Report to Congress

Report to Congress on the National Agriculture and Food Defense Strategy (NAFDS)

Submitted pursuant to Section 108 of the FDA Food Safety Modernization Act (FSMA), Public Law 111-353

U.S. Department of Health and Human Services (HHS)

U.S. Department of Agriculture (USDA)

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Executive Summary

Protecting the nation's food and agriculture supply against intentional contamination and other emerging threats is an important responsibility shared by federal and state, local, tribal, and territorial (SLTT) governments as well as private sector partners. American consumers depend on these entities to ensure that U.S. agriculture and the food supply are safe. In addition to meeting the longstanding expectations of stakeholders, the federal government must also meet new legislative mandates. In January 2011, the President signed the Food and Drug Administration (FDA) Food Safety Modernization Act (FSMA). While FSMA focuses on ensuring the safety of the U.S. food supply by shifting the focus of federal regulators from response to prevention, it also recognizes the importance of strengthening existing collaboration among all stakeholders to achieve common public health and security goals. Specifically, FSMA section 108 directs the Secretary of Health and Human Services (HHS) and the Secretary of Agriculture (USDA), in coordination with the Secretary of Homeland Security (DHS), to develop and implement the National Agriculture and Food Defense Strategy (NAFDS).

The NAFDS details specific food and agriculture defense goals, objectives, key initiatives, and activities that FDA, USDA, DHS, and other stakeholders plan to accomplish to meet the objectives outlined within FSMA. The NAFDS will be used to evaluate and monitor progress and determine whether any modifications are needed. These activities will be accomplished based on the availability of fiscal resources.

The NAFDS charts a direction for how the federal agencies, in cooperation with SLTT governments and private sector partners, protect the nation's food supply against intentional contamination. Within section 108, Congress specifically lays out four overarching goals – Preparedness, Detection, Emergency Response, and Recovery. This strategy outlines the goals, the supporting objectives, and key initiatives that the federal government will undertake over the next 4 years to support the goals. Achieving the stated NAFDS goals of FSMA is a long-term proposition. It will require continuous learning and improvement, accountability, collaboration among Food and Agriculture Sector partners, and a commitment to research, training, and measuring progress. The reward will be improving our collective ability to prepare for, detect, respond to, and recover from threats to our nation's food supply.

Introduction

On January 4, 2011, President Obama signed FSMA into law (Public Law 111-353). Section 108 calls for a National Agriculture and Food Defense Strategy, prepared by HHS and USDA, in coordination with DHS. Specifically, FSMA section 108 states:

(a) Development and Submission of Strategy.--
(1) In general. --Not later than 1 year after the date of enactment of this Act, the Secretary of Health and Human Services and the Secretary of Agriculture, in coordination with the Secretary of Homeland Security, shall prepare and transmit [[Page 124 STAT. 3911]] to the relevant committees of Congress, and make publicly available on the Internet Web sites of the Department of Health and Human Services and the Department of Agriculture, the National

Agriculture and Food Defense Strategy.

(2) Implementation plan.--The strategy shall include an implementation plan for use by the Secretaries described under paragraph (1) in carrying out the strategy.

(3) Research.--The strategy shall include a coordinated research agenda for use by the Secretaries described under paragraph (1) in conducting research to support the goals and activities described in paragraphs (1) and (2) of subsection (b).

(4) Revisions. --Not later than 4 years after the date on which the strategy is submitted to the relevant committees of Congress under paragraph (1), and not less frequently than every 4 years thereafter, the Secretary of Health and Human Services and the Secretary of Agriculture, in coordination with the Secretary of Homeland Security, shall revise and submit to the relevant committees of Congress the strategy.

(5) Consistency with existing plans.--The strategy described in paragraph (1) shall be consistent with--
(A) the National Incident Management System;
(B) the National Response Framework;
(C) the National Infrastructure Protection Plan;
(D) the National Preparedness Goals; and
(E) other relevant national strategies.

(b) Components.--
(1) In general.--The strategy shall include a description of the process to be used by the Department of Health and Human Services, the Department of Agriculture, and the Department of Homeland Security--

(A) to achieve each goal described in paragraph (2); and

(B) to evaluate the progress made by Federal, State, local, and tribal governments towards the achievement of each goal described in paragraph (2).

(2) Goals.--The strategy shall include a description of the process to be used by the Department of Health and Human Services, the Department of Agriculture, and the Department of Homeland Security to achieve the following goals:

(A) Preparedness goal.--Enhance the preparedness of the agriculture and food system by--
(i) conducting vulnerability assessments of the agriculture and food system;
(ii) mitigating vulnerabilities of the system;
(iii) improving communication and training relating to the system;
(iv) developing and conducting exercises to test decontamination and disposal plans;
(v) developing modeling tools to improve event consequence assessment and decision support; and
(vi) preparing risk communication tools and enhancing public awareness through outreach.

(B) Detection goal.--Improve agriculture and food system detection capabilities by--
(i) identifying contamination in food products at the earliest possible time; and
(ii) conducting surveillance to prevent the spread of diseases.

(C) Emergency response goal.--Ensure an efficient response to agriculture and food emergencies by--
(i) immediately investigating animal disease outbreaks and suspected food contamination;
(ii) preventing additional human illnesses;
(iii) organizing, training, and equipping animal, plant, and food emergency response teams of--
(I) the Federal Government; and
(II) State, local, and tribal governments;
(iv) designing, developing, and evaluating training and exercises carried out under agriculture and food defense plans; and
(v) ensuring consistent and organized risk communication to the public by--
(I) the Federal Government;
(II) State, local, and tribal governments; and
(III) the private sector.

(D) Recovery goal.--Secure agriculture and food production after an agriculture or food emergency by--
(i) working with the private sector to develop business recovery plans to rapidly resume agriculture, food production, and international trade;
(ii) conducting exercises of the plans described in subparagraph (C) with the goal of long-term recovery results;
(iii) rapidly removing, and effectively disposing of--
(I) contaminated agriculture and food products; and
(II) infected plants and animals;
(iv) decontaminating and restoring areas affected by an agriculture or food emergency.

(3) Evaluation.--The Secretary, in coordination with the Secretary of Agriculture and the Secretary of Homeland Security, shall--

(A) develop metrics to measure progress for the evaluation process described in paragraph (1)(B); and

(B) report on the progress measured in subparagraph (A) as part of the National Agriculture and Food Defense strategy described in subsection (a)(1).

(c) Limited Distribution.--In the interest of national security, the Secretary of Health and Human Services and the Secretary of Agriculture, in coordination with the Secretary of Homeland Security, may determine the manner and format in which the National Agriculture and Food Defense strategy established under this section is made publicly available on the Internet Web sites of the Department of Health and Human Services, the Department of Homeland Security, and the Department of Agriculture, as described in subsection (a)(1).

Background

The term "food defense" can be summarized as the effort to prevent **intentional** adulteration of the food supply. The contaminants that could be used in an intentional adulteration incident can be biological, chemical, radiological, or even physical. This differs from "traditional" food safety, which is the effort to prevent unintentional contamination of food products by hazards.

While FSMA is primarily focused on preventing illness from unintentional contamination, it also contains mandates to strengthen food defense – that is, protecting the food supply from terrorism or other intentional contamination. FSMA requires FDA to issue regulations to protect against the intentional adulteration of food. For example, FDA is required to promulgate regulations specifying appropriate science-based mitigation strategies or measures to prepare and protect the food supply chain from intentional adulteration at specific vulnerable points. In addition, FSMA requires FDA to issue regulations regarding hazards related to food, including those hazards that may be intentionally introduced, to establish standards for conducting a hazard analysis, documenting hazards, implementing preventive controls, and documenting the implementation of preventive controls. Issuance of regulations to protect against intentional adulteration will mark a shift from the current system. This shift presents a number of challenges to FDA and its stakeholders.

To manage this shift, FSMA directs the development of a NAFDS under which HHS, USDA, DHS, the Environmental Protection Agency (EPA), and SLTT authorities can work together to protect the food supply from hazards that might be intentionally added to food. An interagency working group developed this strategy, which contains a set of specific priorities for addressing any gaps or weaknesses in food defense, as directed by FSMA – including research priorities, improved preparedness, intentional hazards detection, emergency response, and recovery from an intentional agriculture or food-related incident.

In 2003, the Food and Agriculture Sector was identified as a critical infrastructure for national security. At the federal level, USDA and FDA lead efforts to identify infrastructure vulnerabilities and develop plans to address them. While defense of the Food and Agriculture Sector involves physical protection of food manufacturing and agricultural processing, many Sector assets defy traditional physical security practices because they are not "brick and mortar" entities, like buildings, bridges, or dams. Instead, they are open areas (i.e., farms, ranches, or livestock transport areas) and complex systems that span the globe. Sector assets, including processing and distribution facilities and farms, are vulnerable to livestock and crop diseases, foodborne pathogens, pests, or poisonous agents that occur naturally, are unintentionally introduced, or are intentionally delivered by acts of terrorism. Sector partners have acknowledged the importance of early awareness of any threat agent within the Sector's systems. The Sector can improve its food safety and defense posture through improved laboratory capability and capacity, better threat surveillance, and enhanced federal cooperation with SLTT partners as well as the private sector. The need for an improved food defense infrastructure is extensively documented.[1]

[1] Food and Agriculture Sector, 2011 Sector Critical Infrastructure Protection Annual Report http://www.fda.gov/downloads/Food/FoodDefense/UCM348809.pdf

The following is the initial NAFDS in response to this mandate since FSMA was enacted on January 4, 2011. Additionally, the FSMA Section 108 Implementation Plan (Implementation Plan)—Appendix A—was developed for use by the Secretaries described under section 108(a)(1) to support the strategy. The Coordinated Research Agenda (CRA) activities—Appendix B—were consolidated for use by the Secretaries in conducting research to support the goals and activities described in section 108 (b)(1) and (2).

The Implementation Plan provides the specific activities to accomplish for each key initiative with the responsible agencies identified. It will be used to track the overall status of NAFDS and monitor progress made under the outlined goals and objectives. This information will be collected and updated on a regular basis to maintain relevance and measure progress. The CRA is comprised of ongoing and future research activities across the federal government (HHS, DHS, USDA, CDC, and EPA) that support the goals and objectives within the NAFDS. The CRA includes research undertaken by other partners such as SLTT governments. The CRA contains food defense research (studies) that support the outlined goals and objectives within the NAFDS. The NAFDS, Implementation Plan, and CRA reports will be located on FDA's webpage, along with the other FSMA reports and studies at: http://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm271961.htm.

NAFDS - Scope and Guiding Principles:

The development of this strategy document was guided by four goals: Preparedness, Detection, Emergency Response, and Recovery.

GOAL 1 - Preparedness: Enhance the preparedness of the agriculture and food system

GOAL 2 - Detection: Improve agriculture and food system detection capabilities

GOAL 3 - Emergency Response: Ensure an efficient response to agriculture and food emergencies

GOAL 4 - Recovery: Secure agriculture and food production after an agriculture or food emergency

The NAFDS includes our current thinking for implementing these goals, along with subsequent objectives, key initiatives, and activities. These goals serve as an interagency strategic solution for addressing the agriculture and food defense related challenges facing our country. Of note is the provision in FSMA section 110(g), which calls for a Biennial Food Safety and Food Defense Research Plan, inclusive of activities conducted by HHS, USDA, and DHS, for submission to Congress. To avoid duplication of efforts, the agencies have agreed that the food defense research activities and plans will be captured as part of the FSMA section 108 requirement, and the Section 110(g) Biennial Food Safety and Food Defense Research Plan will focus on broad food safety activities with cross-reference to the NAFDS for the food defense research activities, as appropriate.

GOAL 1 - Preparedness: Enhance the preparedness of the agriculture and food system

Preparedness is having the ability to prevent, protect against, respond to, and recover from an incident[2]. *National Preparedness*[3] encompasses many activities and ensures readiness by all stakeholders.

Objective 1.1 - Conduct vulnerability assessments of the agriculture and food system

Vulnerability assessments identify and assess potential security threats, risks, and vulnerabilities along the farm to table supply chains.

Key Initiatives:
1.1.1 - Conduct vulnerability assessments of agriculture and food commodities or systems, as appropriate.

1.1.2 - Reassess or re-evaluate previously conducted assessments and revise, as appropriate.

1.1.3 - Conduct an analysis of vulnerability assessment results to provide direction on areas to target for prevention activities.

Objective 1.2 - Promote the mitigation of vulnerabilities in the agriculture and food system

Vulnerabilities exist along the farm to table supply chain; therefore, it is important to evaluate those vulnerabilities and implement preventative measures.

Key Initiatives:
1.2.1 - Continue to promote the availability of information in the online mitigation strategy databases and other applicable documents.

1.2.2 - Update the content of the online mitigation strategy databases and other applicable documents, as appropriate.

1.2.3 - Issue a final rule for the implementation of the FSMA section 106 provision(s) regarding protection against intentional adulteration of food.

Objective 1.3 - Improve communication and training relating to the system

Preparedness includes improving agriculture and food defense awareness of all stakeholders through the utilization of existing tools and the development of new tools, as appropriate.

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[2] *Incident – The term "Incident" refers to a Food and Agriculture incident, requiring a federal coordinated response that may threaten public health, animal nutrition, food production, aquaculture, livestock production, wildlife, soils, rangelands, and agricultural water supplies (Food and Agriculture Incident Annex).*

[3] *The term "national preparedness" refers to the actions taken to plan, organize, equip, train, and exercise to build and sustain the capabilities necessary to prevent, protect against, mitigate the effects of, respond to, and recover from those threats that pose the greatest risk to the security of the nation (Presidential Policy Directive/PPD-8).*

Key Initiatives:
1.3.1 - Continue to deliver domestic outreach and training to SLTT governments and private sector partners to enhance their food defense capabilities.

1.3.2 - Continue to deliver international outreach and training to foreign governments and academia as well as provide technical support to private sector partners to enhance their food defense capabilities.

Objective 1.4 - Develop and conduct exercises to test decontamination and disposal plans

The response to and recovery from a food or agriculture incident may involve the decontamination and disposal of a variety of items, including food, animals, plants, and equipment. Exercises are an effective way to test and evaluate plans and offer insight into areas needing modification. Exercises should be used to test and evaluate plans.

Key Initiatives:
1.4.1 - Use annual exercises between federal and SLTT government officials and the private sector to evaluate and identify areas for improvement in decontamination and waste management plans.

1.4.2 - Use information from exercises, such as through the after action review process, to update decontamination and waste management plans, as necessary.

Objective 1.5 - Evaluate modeling tools to improve event consequence assessment and decision support

There are a variety of modeling tools that are currently available with direct applicability to agriculture and food systems.

Key Initiatives:
1.5.1 - Evaluate existing modeling capabilities and tools for consequence management of agriculture and food systems.

1.5.2 - Identify information requirements for decision makers and agencies to accomplish consequence management during an incident.

1.5.3 - Promote interagency capability to use operational models for situational analysis and decision making during an incident.

Objective 1.6 - Prepare risk communication tools and enhance public awareness through outreach

Risk communication helps to improve communication in advance of an incident. Developing risk communication tools and establishing lines of communication with the public in advance of an incident can improve the effectiveness of risk communication during an incident.

Key Initiatives:
1.6.1 - Develop a model risk communication template for use by the federal government in response to an intentional incident.

1.6.2 - Conduct focus group studies to analyze the effectiveness of risk communication messages.

1.6.3 - Enhance social media research capability for "just-in-time" social media analysis.

GOAL 2 - Detection: Improve agriculture and food system detection capabilities

Detection is the identification of an agent or its by-products. Detection of an agent provides information needed to help make an informed decision on appropriate actions to prevent further spread of the agent and limit illnesses.

Objective 2.1 - Identify contamination in food products at the earliest possible time

Food products can be intentionally contaminated with a variety of agents. It is important to detect agents that pose a food defense threat at the earliest possible stage in the farm to table supply chain. This will involve continued integration of the nation's laboratory infrastructure at the federal, state, and local levels.

Key Initiatives:
2.1.1 - Continue the development of laboratory methods for the detection of biological, chemical, and/or radiological agents in foods.

2.1.2 - Promote collaboration among the DHS Integrated Consortium of Laboratory Networks to build laboratory capacity and capability.

2.1.3 - Continue efforts to improve targeting mechanisms, capabilities, and strategies for imported foods.

Objective 2.2 - Conduct surveillance to prevent the spread of disease

Foodborne illness surveillance systems are used to detect outbreaks, determine the foods and settings that cause illness, give health care providers information for patient care, and guide prevention efforts to reduce the number of outbreaks and cases of foodborne illness. In addition, animal and plant disease and pest surveillance systems are used to detect outbreaks, determine the causes of illness, and guide animal and/or plant response efforts to reduce the number and severity of outbreaks.

Key Initiatives:
2.2.1 - Evaluate foodborne illness surveillance systems, including outbreak surveillance, environmental surveillance, national case surveillance, and sentinel site surveillance systems.

2.2.2 - Conduct an analysis (assessment) of foodborne illness surveillance systems to determine areas for improvements.

2.2.3 - Work to develop a plan to enhance foodborne illness surveillance systems.

2.2.4 - Evaluate and conduct ongoing analysis of animal and/or plant disease and pest surveillance systems.

GOAL 3 - Emergency Response: Ensure an efficient response to agriculture and food emergencies

Emergency Response is focused on immediate and sustained actions to ensure the safety and availability of food and the containment of the threat to human and animal health and agriculture throughout the duration of an incident. Pursuant to section 202(b) of FSMA, the most recent biennial report to Congress on the Food Emergency Response Network (FERN) was released in November 2013.[4]

Objective 3.1 - Immediately investigate plant or animal disease outbreaks and suspected food contamination

It is important to conduct a timely and thorough investigation into suspected agriculture and food emergencies to ensure a safe food supply and to protect animals and plants from emerging threats.

Key Initiatives:

3.1.1 - Enhance a select network of state and local health departments to develop new and better methods to detect, investigate, respond to, and control multi-state outbreaks of foodborne diseases.

3.1.2 - Develop performance metrics to measure activities related to outbreak response, including laboratory surveillance, epidemiological interviews and investigations, and environmental health.

3.1.3 - Use performance metrics to demonstrate successes and identify gaps in the detection, investigation, and control of enteric disease outbreaks.

3.1.4 - Evaluate responses to outbreaks of disease attributed to human or animal food outbreak responses to identify areas for improvement and successes.

3.1.5 - Evaluate animal and plant disease and pest outbreak responses to identify areas for improvement as well as successes.

3.1.6 - Strengthen animal and plant disease and pest response networks to facilitate response activities.

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[4] Biennial Report to Congress on the Food Emergency Response Network (November 2013) http://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm375711.htm

Objective 3.2 - Prevent additional human illnesses

It is important to expeditiously pursue an investigation to effectively determine the source product and ensure controls are enhanced in response to a food emergency incident to prevent additional human illnesses.

Key Initiative:
3.2.1 - Conduct pilot tests to foster innovative approaches to improve tracking and internal systems for product trace-backward and trace-forward, recalls, and cessation of operations.

Objective 3.3 - Organize and train animal, plant, and food emergency response teams at the federal and SLTT government levels

It is important to remain committed to advancing emergency preparedness and response. Governments must be prepared and have the needed resources and tools available to provide a coordinated response across multiple organizational components at the international, national, and SLTT levels. Consistent application of the National Incident Management System (NIMS) lays the groundwork for efficient and effective responses, and provides a consistent nationwide framework and approach that enables government at all levels to achieve an effective cross-jurisdictional coordinated response by using common processes and systems. The Incident Command System (ICS) provides a flexible, yet standardized core mechanism for coordinated and collaborative incident management. Integrating outputs from these efforts can aid in improving capabilities for responding to emergencies.

Key Initiatives:
3.3.1 - Promote and train staff in the application of the NIMS and the use of ICS principles.

3.3.2 - Develop a toolkit for SLTT Food and Agriculture Sector stakeholders to self-assess and identify areas for potential improvements through various activities, such as conducting trend analyses, using survey results, and supporting database targeted-resources.

3.3.3 - Promote the availability of model response plans for enhancing the protection of the Food and Agriculture Sector from farm to fork.

Objective 3.4 - Design, develop, and evaluate training and exercises carried out under agriculture and food defense emergency response plans

Exercises can be used to evaluate the roles, responsibilities, and procedures for preventing, responding to, and recovering from an incident. Exercises can be designed to identify areas for improvement in emergency staff knowledge about relevant policies, plans, and procedures, which can be rectified by specific types of training.

Key Initiatives:
3.4.1 - Develop a national curriculum framework for animal and plant emergency response training.

3.4.2 - Develop a national curriculum framework for food emergency response training.

3.4.3 - Promote the availability of tools and resources to test emergency response plans.

3.4.4 – Address areas for improvement identified through emergency response exercises.

3.4.5 - Design additional exercises as needed to further efforts to improve response and recovery plans and capabilities.

Objective 3.5 - Ensure effective and consistent risk communication to the public by the federal and SLTT governments and the private sector

It is important to develop a risk communication strategy to improve communication in advance of an incident. This ensures consistency in public messages and aids in their timely release while accounting for the differences in communication needs of the population impacted.[5]

Key Initiatives:
3.5.1 - Conduct risk communication exercises with government officials for responding to food and agriculture incidents.

3.5.2 - Conduct risk communication exercises with stakeholders.

GOAL 4 - Recovery: Secure agriculture and food production after an agriculture or food emergency

The recovery process is a continuum, that is, a sequence of interdependent and often concurrent activities. Although recovery occurs after an event, a successful recovery process begins with efforts in preparedness, planning, and capacity building amongst all stakeholders.

Objective 4.1 - Work with the private sector to develop business recovery plans to rapidly resume agriculture, food production, and international trade

One of the core principles that guide recovery is partnership and inclusiveness. Partnerships and inclusiveness amongst the public and private sectors strengthen the recovery effort by having multiple stakeholders working towards a common goal with an expanded availability of resources. The private sector plays a critical role in establishing public confidence after an event; when the private sector is operational, the community recovers more quickly.

Key Initiatives:
4.1.1 - Work with private sector stakeholders to learn about existing recovery planning efforts.

4.1.2 - Solicit and include private sector representation in the Food and Agriculture Sector recovery and exercise planning efforts.

[5] 2012 Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) Implementation Plan. (December 2012) http://www.phe.gov/Preparedness/mcm/phemce/Documents/2012-PHEMCE-Implementation-Plan.pdf

Objective 4.2 - Exercise response plans with the goal of long-term recovery

Unlike short term recovery, which focuses on more immediate and basic needs within a short amount of time, long-term recovery may continue for months or years and focuses on redevelopment and revitalization of the area of the private sector that is impacted. While exercises are generally geared towards testing response and immediate or short- term recovery, the ultimate goal of long-term recovery should be considered during exercises as well.

Key Initiatives:
4.2.1 - Ensure that the scope of the exercises includes a recovery stage, covering both short-term and long-term recovery.

4.2.2 - When appropriate, participate in Food and Agriculture Sector-led exercises.

4.2.3 - Expand the knowledge and talent base for long-term resiliency through the implementation of a research program for resilience training and education.

Objective 4.3 - Rapidly remove and effectively dispose of contaminated agriculture and food products and infected plants and animals

Immediate disposal of contaminated food or agriculture products is key to preventing the spread of further contamination and illnesses. Proper waste management protocols must be developed and followed.

Key Initiatives:
4.3.1 - Develop or update protocols, guidance, and model plans for the management of wastes from a food or agriculture emergency, including source reduction, waste minimization, waste segregation, waste estimation, recycling, transportation, and treatment and disposal options.

4.3.2 - Provide technical assistance to SLTT governments, the private sector, and other stakeholders on proper waste management options established under 4.3.1.

4.3.3 - Encourage the private sector to establish waste management plans based on the model plans in 4.3.1 and incorporate these plans into Agriculture and Food Defense Emergency Response Plans.

Objective 4.4 - Decontaminate and restore areas affected by an agriculture and food emergency

After an incident, decontamination and restoration efforts are continuously needed to prevent the spread of further contamination and illnesses. Proper decontamination protocols must be developed and followed.

Key Initiatives:

4.4.1 - Develop, review, and update protocols, guidance, and plans for decontamination activities for chemicals, biological agents, and radiological agents.

4.4.2 - Build operational capability to support decision makers during response and recovery.

4.4.3 - Provide technical assistance to SLTT governments, the private sector, and other stakeholders on proper decontamination options established under 4.4.1.

4.4.4 - Encourage the private sector to establish decontamination plans based on the model plans described in 4.4.1.

Conclusion

The NAFDS was developed to protect the food and agriculture supply against intentional contamination and other emerging threats. This level of protection is an important responsibility shared by federal and SLTT governments as well as private sector partners. The NAFDS also outlines an ambitious agenda for meeting today's food safety and food defense challenges. Lastly, the Implementation Plan in Appendix A and the CRA activities in Appendix B will guide us in setting priorities and evaluating progress toward the NAFDS goals. These efforts enable us to strengthen collaboration to meet the goals outlined in Section 108 of FSMA.

Appendix A:
FSMA Section 108 Implementation Plan

**FSMA section 108 activities based on the availability of fiscal resources. Primary Lead Agency (L); Potential Partners, Stakeholders, and/or Participants (P);
*Other Federal/External Stakeholders & Partners include: FBI and related agencies involved in protecting the food supply.

Goal 1 – Preparedness – Enhance the preparedness of the agriculture and food system													
Objective	**Key Initiative**	**Activity****	**Federal**						**External Stakeholders & Partners**			
			HHS	**USDA**	**DHS**	**EPA**	**DOD**	***Other**	**SLTT**	**Industry**	**Academia**	***Other**
1.1 Conduct vulnerability assessments of the agriculture and food system	1.1.1 Conduct vulnerability assessments of agriculture and food commodities or systems, as appropriate	A. Conduct new vulnerability assessments on regulated products, as appropriate	L	L	P			P	P	P	P	P
		B. Conduct vulnerability assessments through Protective Security Advisors Site Assistance Visits and Enhanced Critical Infrastructure Protection Visits			L			P		P	P	P
		C. Conduct risk assessments on the Food and Agriculture Sector related to chemical and biological agents	P	P	L			P			P	P
	1.1.2 Reassess or re-evaluate previously conducted assessments and revise, as appropriate	A. Conduct reassessments on regulated products	L	L				P		P	P	P
		B. Reassess or re-evaluate previously conducted assessments, as requested	L	L	P			P	P	P		
		C. Review previously conducted risk assessments prior to conducting new assessments	P	P	L			P	P	P	P	
	1.1.3 Conduct an analysis of vulnerability assessment results to provide direction on areas to target for prevention activities	A. Conduct Criticality, Accessibility, and Vulnerability (CAV) specific analyses on completed vulnerability assessments	L									
		B. Conduct ongoing routine analysis, develop outreach and guidance for stakeholders for mitigation activities revealed during assessments		L					P	P	P	
		C. Conduct Food and Agriculture Criticality Assessments to target systems and procedures requiring vulnerability assessments			L							
		D. Conduct system analysis to determine vulnerabilities			L			P			P	

Appendix A:
FSMA Section 108 - Implementation Plan

**FSMA section 108 activities based on the availability of fiscal resources. Primary Lead Agency (L); Potential Partners, Stakeholders, and/or Participants (P);
*Other Federal/External Stakeholders & Partners include: FBI and related agencies involved in protecting the food supply.

Goal 1 – Preparedness – Enhance the preparedness of the agriculture and food system												
Objective	**Key Initiative**	**Activity****	**Federal**						**External Stakeholders & Partners**			
			HHS	**USDA**	**DHS**	**EPA**	**DOD**	***Other**	**SLTT**	**Industry**	**Academia**	***Other**
1.2 Promote the mitigation of vulnerabilities in the agriculture and food system	1.2.1 Continue to promote the availability of information in the online mitigation strategy databases and other applicable documents	A. Promote the online mitigation strategy database at annual national conferences, regional meetings, workshops, or other venues	L	P					P	P	P	P
		B. Promote documents, such as Creating a Food Defense Plan, which provide guidance on mitigation strategies for state and local operators of the National School Lunch Program		L				P	P	P		P
		C. Promote and coordinate mitigation strategies through Information Sharing Platforms	P	P	L				P	P	P	P
		D. Support and refine the Food Defense Research Database	L	L	P				P	P	P	
	1.2.2 Provide updates to the content of the online mitigation strategy database and other applicable documents , as appropriate	A. Provide updates to the content of the online Mitigation Strategy Database (as necessary)	L	L								
		B. Maintain content within the mitigation strategies database	L	L								
	1.2.3 Work to issue a final rule for implementation of the FSMA section 106 provision(s) regarding protection against intentional adulteration of food	A. Work on Proposed Rule for FSMA section 106, entitled “Focused Mitigation Strategies to Protect Food Against Intentional Adulteration”	L	P	P	P						
		B. Work to issue a Final Rule for FSMA section 106 entitled “Focused Mitigation Strategies to Protect Food Against Intentional Adulteration”	L									
1.3 Improve communication and training relating to the system	1.3.1 Continue to deliver domestic outreach and training to SLTT government and private sector partners to enhance their food defense capabilities	A. Deliver domestic outreach and training to SLTT government and private sector partners at annual national conferences, regional meetings, or local workshops	L	P			P	P	P	P	P	P
		B. Support applied research that focuses on	P	L	P				P	P	P	P

Appendix A:
FSMA Section 108 - Implementation Plan

**FSMA section 108 activities based on the availability of fiscal resources. Primary Lead Agency (L); Potential Partners, Stakeholders, and/or Participants (P);
*Other Federal/External Stakeholders & Partners include: FBI and related agencies involved in protecting the food supply.

Goal 1 – Preparedness – Enhance the preparedness of the agriculture and food system													
Objective	**Key Initiative**	**Activity****	**Federal**						**External Stakeholders & Partners**			
			HHS	**USDA**	**DHS**	**EPA**	**DOD**	***Other**	**SLTT**	**Industry**	**Academia**	***Other**
		training, education, and outreach that enhances food defense capabilities of partners and stakeholders										
		C. Deliver food defense workshops focused on small and very small establishments designed to increase participation in FSIS' voluntary Food Defense Plans		L					P	P	P	P
		D. Provide training at national meetings and conferences and support school district tabletop exercises for the NSLP		L					P	P		P
		E. Incorporate pre-harvest food safety and other One Health information into APHIS training programs		L								
		F. Continue to support coordination efforts through the CIPAC	P	P	L							
	1.3.2 Continue to deliver international outreach and training to foreign governments and academia as well as technical support to private sector partners to enhance their food defense capabilities	A. In collaboration, deliver international outreach and training workshops to foreign governments, academia, and private sector partners	L	L			P	P		P		P
		B. Support applied research that focuses on training, education, and outreach that enhances food defense capabilities of international partners and stakeholders		L					P	P	P	P
		C. Support the international outreach, as appropriate or directed	P	P	L			P		P		P
		D. Collaborate with academia to hold annual research and development workshops			L						P	

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Goal 1 – Preparedness – Enhance the preparedness of the agriculture and food system													
Objective	**Key Initiative**	**Activity****	**Federal**						**External Stakeholders & Partners**			
			HHS	**USDA**	**DHS**	**EPA**	**DOD**	***Other**	**SLTT**	**Industry**	**Academia**	***Other**
1.4 Develop and conduct exercises to test decontamination and disposal plans	1.4.1 Use annual exercises between federal & SLTT government officials and the private sector to evaluate and identify areas for improvement in decontamination and waste management plans	A. Participate in and conduct exercises that test and evaluate available "all hazards" decontamination and waste management plans for food and agriculture emergencies	P	P		L			P			
		B. Promote inclusion of waste management and decontamination issues in exercise objective				L						
		C. Support DHS Capstone Integrated Product Team			P	L					P	
	1.4.2 Use information from exercises, such as through the after action review process, to update decontamination and waste management plans, as necessary	A. Conduct after action reviews of exercises to update decontamination and waste management plans	L	P	P	P			P			
		B. Use results from after action reviews to inform future program planning and priority setting		L					P	P		
		C. Support DHS National Exercise Program			L				P		P	
		D. Enhance food and agricultural portal on LLIS to share lessons learned from exercises and best practices			L							
1.5 Evaluate modeling tools to improve event consequence assessment and decision support	1.5.1 Evaluate existing modeling capabilities/tools for agricultural and food systems	A. Work to evaluate existing modeling capabilities and tools	L		P							
		B. Support research that focuses on evaluating modeling capabilities for food and agricultural systems		L					P		P	
		C. Work with stakeholders, such as DHS, to evaluate existing modeling capabilities/tools for agricultural and/or food systems		L	P				P		P	

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Goal 1 – Preparedness – Enhance the preparedness of the agriculture and food system													
Objective	**Key Initiative**	**Activity****	**Federal**						**External Stakeholders & Partners**			
			HHS	**USDA**	**DHS**	**EPA**	**DOD**	***Other**	**SLTT**	**Industry**	**Academia**	***Other**
		D. Evaluate existing modeling capabilities/tools, as appropriate			L						P	
		E. Promote the availability of decision support tools			L	P					P	
	1.5.2 Identify information requirements for decision makers to accomplish consequence management during an incident	A. Work to identify requirements for the management of an incident	L									
		B. Work with stakeholders to develop actionable information derived from modeling to inform agency decision makers		L					P	P	P	
		C. Support research that focuses on situational analysis, decision support tools, and risk response		L					P	P	P	P
		D. Work with stakeholders, such as FDA, and promote research efforts that focus on situational analysis, decision support tools, and risk response			L							
		E. Conduct a series of exercises to identify requirements for decision makers and accomplish consequence management during an incident			L							
	1.5.3 Promote (current) interagency capability to use operational models for situational analysis and decision making during an incident	A. Work to promote interagency capabilities for operational and situational analysis (as needed)	L	P					P	P	P	
		B. Work with stakeholders to develop and promote interagency capability to use operational models for situational analysis and decision making during an incident		L	L			P	P	P	P	

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Goal 1 – Preparedness – Enhance the preparedness of the agriculture and food system												
Objective	**Key Initiative**	**Activity****	**Federal**						**External Stakeholders & Partners**			
			HHS	**USDA**	**DHS**	**EPA**	**DOD**	***Other**	**SLTT**	**Industry**	**Academia**	***Other**
1.6 Prepare risk communication tools and enhance public awareness through outreach	1.6.1 Develop a model risk communication template for use by federal government in response to an intentional incident	A. Support research that focuses on strengthening risk communication, risk management, and risk response	P	L					P	P	P	
		B. Work with stakeholders to develop model risk communication (template) in response to an incident	L	P	P			P	P	P	P	P
	1.6.2 Conduct focus group studies to analyze the effectiveness of risk communication messages	A. Establish regular meetings with risk communication personnel to analyze, assess existing messages, develop new content, conduct a focus group study to analyze the effectiveness of risk communication	L									
	1.6.3 Enhance social media research capability for just in time social media analysis	A. Work to enhance social media research capability for just in time social media analysis	L	P				P	P	P	P	P
		B. Meet with industry, as well as other agriculture and food defense stakeholders to develop a strategy for pre-harvest food safety at the farm level	L	L						P		P
		C. Work with stakeholders to enhance social media research capability		L	P			P				P
		D. Conduct research to enhance capabilities in tracking traditional and social media coverage of emerging foodborne event capability			L			P	P	P	P	

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Goal 2 – Detection – Improve agriculture and food system detection capabilities												
Objective	**Key Initiative**	**Activity****	**Federal**						**External Stakeholders & Partners**			
			HHS	**USDA**	**DHS**	**EPA**	**DOD**	**Other**	**SLTT**	**Industry**	**Academia**	**Other**
2.1 Identify contamination in food products at the earliest possible time	2.1.1 Continue the development of laboratory methods for the detection of biological, chemical, and/or radiological agents in foods	A. Develop and/or update laboratory methods for the detection of biological, chemical, and/or radiological agents in foods	L	L					P		P	
		B. Support research that focuses on detection of contaminants in food and water		L		P			P	P	P	
		C. Collaborate on research and development with food and agriculture stakeholders	P	P	L			P	P	P	P	
	2.1.2 Promote collaboration among the DHS Integrated Consortium of Laboratory Networks to build laboratory capacity and capability	A. Collaborate with veterinary diagnostic laboratories at annual national conferences, regional meetings or local workshops	L	P				P				
		B. Support research that encourages and strengthens collaboration to improve laboratory capabilities	P	L					P	P	P	
		C. Deliver training courses and scientific exchanges to strengthen diagnostic capacity and information sharing in cooperation with DOD and State among partner countries' veterinary diagnostic and environmental laboratories	P	L			P	P	P		P	P
		D. Work with stakeholders through FoodSHIELD and CoreSHIELD	P	P	L	P	P	P	P	P	P	P
		E. Collaborate among animal and human diagnostic laboratories to share information and isolates		L					P			
		F. Continue development of NAHLN		L					P			

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Goal 2 – Detection – Improve agriculture and food system detection capabilities												
Objective	**Key Initiative**	**Activity****	**Federal**						**External Stakeholders & Partners**			
			HHS	**USDA**	**DHS**	**EPA**	**DOD**	**Other**	**SLTT**	**Industry**	**Academia**	**Other**
	2.1.3 Continue efforts to improve targeting mechanisms, capabilities, and strategies for imported foods	A. Work to improve targeting mechanisms, capabilities, and strategies for imported foods	L									
		B. Work with stakeholders to improve targeting mechanisms, capabilities, and strategies for imported foods	P	L	P	P	P	P	P	P	P	P
2.2 Conduct surveillance to prevent the spread of disease	2.2.1 Evaluate foodborne illness surveillance systems, including outbreak surveillance, national case surveillance, and sentinel site surveillance systems	A. Work with CDC's BSC/FSMA Surveillance Working Group to review foodborne illness surveillance systems and provide recommendations in an annual report	L	P				P	P	P	P	P
	2.2.2 Conduct an analysis (assessment) of foodborne illness surveillance systems to determine areas for improvements	A. Review food defense verification procedures and food defense surveillance procedures program to determine areas for improvements	P	L								
	2.2.3 Work to develop a plan to enhance (USDA) foodborne (regulatory) illness surveillance systems	A. Review food defense verification procedures and food defense surveillance procedures program		L		P						
	2.2.4 Evaluate and conduct ongoing analysis of animal and/or plant disease and pest surveillance systems	A. Support research that focuses on evaluating and strengthening animal, plant, and pest surveillance systems	P	L					P	P		
		B. Continue to develop plan(s) to address antimicrobial resistance	P	L								
		C. Analyze trapping and surveillance results to notice trends		L								

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Goal 3 – Emergency Response – Ensure an efficient response to agriculture and food emergencies												
Objective	**Key Initiative**	**Activity****	**Federal**						**External Stakeholders & Partners**			
			HHS	**USDA**	**DHS**	**EPA**	**DOD**	**Other**	**SLTT**	**Industry**	**Academia**	**Other**
3.1 Immediately investigate plant or animal disease outbreaks and suspected food contamination	3.1.1 Enhance select network of state and local health departments to develop new and better methods to detect, investigate, respond to, and control multistate outbreaks of foodborne diseases	A. Increase membership in FoodCORE program to develop new and better methods to detect, investigate, respond to, and control multi-state outbreaks of foodborne diseases	L					P				
		B. Evaluate and develop best practices to support foodborne outbreak investigations	L	P				P	P			
		C. Increase number of states participation in RRT initiatives	L					P	P			
	3.1.2 Develop performance metrics to measure activities related to outbreak response, including laboratory surveillance, epidemiological interviews and investigations, and environmental health	A. Work to update outbreak response guidelines and metrics, including laboratory surveillance, epidemiologic interviews and investigations, and environmental assessments	L					P	P			
		B. Work to develop improved epidemiological, laboratory and environmental foodborne outbreak metrics	L					P	P			
		C. Work to develop improved epidemiological, laboratory and environmental foodborne outbreak metrics	L					P	P			
	3.1.3. Use performance metrics, to demonstrate successes and identify gaps in the detection, investigation, and control of enteric disease outbreaks	A. Assess FoodCORE data to measure achievements and identify gaps in the detection, investigation, and control of foodborne illness outbreaks	L					P				
		B. Begin utilizing Integrated Food Safety Centers of Excellence (CoE) to assess foodborne illness outbreak performance at other sites	L			P		P			P	

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			HHS	**USDA**	**DHS**	**EPA**	**DOD**	**Other**	**SLTT**	**Industry**	**Academia**	**Other**
		C. Use data from RRTs to measure foodborne illness response in participating states.	L						P			
	3.1.4 Evaluate human and animal food outbreak (regulatory) responses to identify areas for improvement as well as successes	A. Evaluate human and animal food outbreak responses to identify areas for improvement	L	P					P			
		B. Implement zoonotic disease engagement plan	P	L					P			
	3.1.5 Evaluate animal and/or plant disease and pest outbreak responses to identify areas for improvement as well as successes	A. Support research that focuses on evaluating and strengthening outbreak response		L					P			
		B. Evaluate different survey techniques, lures, and methods to help identify outbreaks earlier		L					P			
		C. Support research that focuses on evaluating and strengthening outbreak response		L					P			
		D. Review the Sub-IPC on Agricultural Screening tools for gaps, and tool development		P	L							
	3.1.6 Continue to build an animal and plant disease and pest response network to facilitate response activities	A. Cooperate with FAO in the Crisis Management Center – Animal Health to assist countries that request assistance on suspected or confirmed animal disease outbreaks or other animal health emergencies		L				P	P			
3.2 Prevent additional human illnesses	3.2.1 Conduct pilot test to foster innovative approaches to improve tracing, and internal systems for product trace-backward and trace-forward,	A. Assess innovative approaches to improve tracing, and internal systems for product trace-backward and trace-forward, recalls, and cessation of operations	L									

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Objective	**Key Initiative**	**Activity****	**Federal**						**External Stakeholders & Partners**			
			HHS	**USDA**	**DHS**	**EPA**	**DOD**	**Other**	**SLTT**	**Industry**	**Academia**	**Other**
	recalls, and cessation of operations	B. Support research that focuses on evaluating and improving trace-back systems		L				P		P		
		C. Support and promote implementing inventory tracking systems and rapid notification system mechanisms to provide alerts and recall information on food products distributed to FNS nutrition assistance programs		L					P			
3.3 Organize and train, animal, plant, and food emergency response teams at the federal and SLTT government levels	3.3.1 Promote and train staff in the application of the National Incident Management System (NIMS) and the use of Incident Command System (ICS) principles	A. Work to promote NIMS and ICS with stakeholders	L	L								
		B. Develop AgLearn courses to allow more participants to train in ICS		L								
		C. Continue delivery of training program with Incident Management Teams focusing on improvement of ICS capabilities	P	L								
		D. Provide Incident Management procedures to promote training and application of the National Incident Management System			L							
		E. Work to promote and train staff in the application of NIMS, and ICS			L							
	3.3.2 Develop a toolkit for States and local Food and Agriculture Sector stakeholders to self-assess and identify areas for potential improvements through various activities such as, conducting trend analyses,	A. Work with stakeholders to self-assess and identify areas for potential improvements-as appropriate			L				P			
		B. Maintain and help facilitate each state's ability to determine their preparedness and provide resources to improve preparedness.			L				P			

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Objective	**Key Initiative**	**Activity****	**Federal**						**External Stakeholders & Partners**			
			HHS	**USDA**	**DHS**	**EPA**	**DOD**	**Other**	**SLTT**	**Industry**	**Academia**	**Other**
	using survey results, and supporting database targeted-resources	C. Issue CIFOR Industry Guidelines for the Investigation of foodborne illness	L		P			P				
	3.3.3 Promote the availability of model response plans for enhancing the protection of the agricultural and food sector from farm to fork	A. Promote the exchange of best practices through Food and Agriculture Information Sharing Environment and State portals			L							
		B. Maintenance and operations of the FARM Toolkit's ability to help facilitate each state's ability to determine their preparedness, and provide resources to improve preparedness			L							
		C. Issue CIFOR Industry Guidelines for the Investigation of foodborne illness	L		P			P				
3.4 Design, develop, and evaluate training and exercises carried out under agriculture and food defense emergency response plans	3.4.1 Develop national curriculum framework for animal and plant emergency response training	A. Work with stakeholders through the NIPP model and provide National Exercise Division to focus on agriculture and food defense emergency response planning	P	P	L	P		P	P			P
		B. Expand the Animal Agricultural Emergency Response Training Curriculum Framework		P	L							
	3.4.2 Develop a national curriculum framework for food emergency response training	A. Expand food related emergency response training and exercises	L					P	P	P		P
	3.4.3 Promote the availability of tools and resources to test emergency response plans.	A. Continue to illustrate the availability of tools and resources, such as FREE-B, at annual national conferences, regional meetings, or local workshops	L	P					P	P	P	P
		B. Support research that focuses on evaluating and strengthening emergency response		L					P	P		

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Goal 3 – Emergency Response – Ensure an efficient response to agriculture and food emergencies													
Objective	**Key Initiative**	**Activity****	**Federal**						**External Stakeholders & Partners**			
			HHS	**USDA**	**DHS**	**EPA**	**DOD**	**Other**	**SLTT**	**Industry**	**Academia**	**Other**
		C. Release and promote tools such as the TTX Toolkit for NSLP stakeholders		L								
		D. Promote and assess the web-based Supply Chain Management system's Rapid Alert System for USDA food products recalled in the NSLP		L								
		E. Continue delivery of TTE program to stakeholders in improving response capabilities	P	L								
	3.4.4 Evaluate lessons learned from emergency response exercises	A. Evaluate exercises, develop recommendations for ways to improve and strengthen response capabilities, and enhance response planning	L	P	P			P				P
		B. Encourage the use of the LLIS system to share lessons learned from exercises	P	L	P			P				P
	3.4.5 Design additional exercises as needed to further efforts to improve response capabilities	A. Design exercises to further efforts to improve emergency response capabilities	L	P	P				P	P		
		B. Conduct a workshop to develop a comprehensive 3-year training and exercise plan for the agency		L								
3.5 Ensure effective and consistent risk communication to the public by the federal and SLTT governments and	3.5.1 Conduct risk communication exercises with government officials for responding to food or agriculture incidents	A. Conduct risk communication exercise for responding to a food incident	L					P	P			P
		B. Encourage international partners to also conduct exercises and improve their responses	L	L			P	P		P	P	P
		C. Work with stakeholders to conduct risk communication exercises in coordination and collaboration			L				P	P	P	

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Objective	**Key Initiative**	**Activity****	**Federal**						**External Stakeholders & Partners**			
			HHS	**USDA**	**DHS**	**EPA**	**DOD**	**Other**	**SLTT**	**Industry**	**Academia**	**Other**
the private sector		D. Develop risk communication strategies and conduct exercises			L							
	3.5.2 Conduct risk communication exercises with stakeholders	A. Conduct risk communication exercises along with stakeholders	L		P							
		B. Support research that focuses on strengthening risk communication, risk management, and risk response	P	L	P			P				P
		C. Work with stakeholders to develop consistent risk communication messages	P	L	P			P				P
		D. Work with stakeholders to conduct risk communication exercises in coordination and collaboration	P	P	L			P	P	P		P
		E. Develop risk communication strategies and conduct exercises	P	P	L			P				P

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Goal 4 – Recovery - Secure agriculture and food production after an agriculture or food emergency													
Objective	**Key Initiative**	**Activity****	**Federal**						**External Stakeholders & Partners**			
			HHS	**USDA**	**DHS**	**EPA**	**DOD**	**Other**	**SLTT**	**Industry**	**Academia**	**Other**
4.1 Work with the private sector to develop business recovery plans to rapidly resume agriculture, food production, and international trade	4.1.1 Work with private sector stakeholders to learn about existing recovery planning efforts	A. Work with private sector stakeholders to promote emergency response and recovery	L		P							
		B. Support research that focuses on developing and implementing comprehensive recovery planning		L								
	4.1.2 Solicit and include private sector representation in the Food and Agriculture Sector recovery and exercise planning efforts	A. Solicit private sector representatives	L						P	P		P
		B. Include industry and private sector participants in international training with Ministry counterparts		L				P				P
		C. Continue to promote Secure Supply Projects for Egg, Turkeys, Milk, and Pork for continuity of business during an outbreak	P	P	L						P	
4.2 Conduct exercises of response plans with the goal of long-term recovery results	4.2.1 Ensure that the scope of the exercises includes a recovery stage, covering both short-term and long- term recovery	A. Work to promote the goal of long-term response and recovery results with stakeholders	L	P	P	P			P	P	P	P
		B. Release and promote tools such as the TTX Toolkit for NSLP stakeholders which includes a discussion of long-term recovery		L					P		P	P
	4.2.2 When appropriate, participate in food and agricultural sector exercises	A. Work with stakeholders to promote emergency response and recovery	L	P		P			P	P	P	P
		B. Participate in sector exercises and conduct internal response and recovery exercises in coordination with stakeholders	P	L	P				P	P		

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Goal 4 – Recovery - Secure agriculture and food production after an agriculture or food emergency													
Objective	**Key Initiative**	**Activity****	**Federal**						**External Stakeholders & Partners**			
			HHS	**USDA**	**DHS**	**EPA**	**DOD**	**Other**	**SLTT**	**Industry**	**Academia**	**Other**
	4.2.3 Expand the knowledge and talent base for long-term resiliency through the implementation of a research program for resilience training and education	A. Resilience will be a CIPAC Plenary Panel topic and Research Program			L	P						
4.3 Rapidly remove and effectively dispose of contaminated agriculture and food products and infected plants and animals	4.3.1 Develop or update protocols, guidance and model plans for the management of wastes from a food or agriculture emergency, including; source reduction, waste minimization, waste segregation, waste estimation, recycling, treatment and disposal options, transport, etc.	A. Develop a list of existing protocols, guidance and model plans for the management of waste following a food or agriculture emergency for a priority list of contaminants			P	L			P			
		B. Identify and address critical gaps in existing model plans for waste management	P	P	P	L		P				
		C. Work with stakeholders, assist with plan development, planning as requested			L							
	4.3.2 Provide technical assistance to SLTT, the private sector, and other stakeholders on proper waste management options established under 4.3.1	A. Provide technical assistance at annual national conferences, regional meetings, or local workshops				L			P	P	P	P
		B. Development an information repository of protocols, plans and guidance for use by stakeholders				L						
		C. Facilitate and assist with training			L							
	4.3.3 Encourage private sector to establish waste management plans based on the model plans described in 4.3.1 and incorporate these plans into	A. Participate in trainings and exercises, to the extent possible given resource limitations, to provide technical expertise and guidance on waste management issues	P	P	P	L						

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Goal 4 – Recovery - Secure agriculture and food production after an agriculture or food emergency													
Objective	**Key Initiative**	**Activity****	**Federal**						**External Stakeholders & Partners**			
			HHS	**USDA**	**DHS**	**EPA**	**DOD**	**Other**	**SLTT**	**Industry**	**Academia**	**Other**
	Agriculture and Food Defense Emergency Response Plans.											
		B. Utilize CIPAC forum to encourage plan establishment			L							
4.4 Decontaminate and restore areas affected by an agriculture and food emergency	4.4.1 Develop, review, and update existing protocols, guidance and plans for decontamination activities for chemicals, biological agents, and radiological agents	A. Develop a list of existing protocols, guidance and model plans for decontamination activities following a food or agriculture emergency for a priority list of contaminants	P	P		L						
		B. Identify critical gaps in existing model plans for decontamination activities			P	L						
		C. Work with stakeholders to develop, review, and update existing protocols, guidance, and plans for decontamination		L								
		D. Work with stakeholders in coordination efforts to update existing protocols	P		L			P				
	4.4.2 Build operational capability to support decision makers during response and recovery	A. Help facilitate outreach to support decision makers during response and recovery			L			P				
	4.4.3 Provide technical assistance to SLTT	A. Develop an information repository of protocols, plans and guidance for use by stakeholders	P	P	P	L		P				

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Goal 4 – Recovery - Secure agriculture and food production after an agriculture or food emergency												
Objective	**Key Initiative**	**Activity****	**Federal**						**External Stakeholders & Partners**			
			HHS	**USDA**	**DHS**	**EPA**	**DOD**	**Other**	**SLTT**	**Industry**	**Academia**	**Other**
	governments, private sector, and other stakeholders on proper decontamination options established under 4.4.1	B. Work with stakeholders on proper decontamination options		P	L			P				P
	4.4.4 Encourage private sector to establish decontamination plans based on the model plans described in 4.4.1	A. Work with private sector to establish decontamination plans based on the model plans	L	L				P		P		

Appendix B:
FSMA Section 108

Coordinated Research Agenda (CRA)

The Coordinated Research Agenda activities (below) were consolidated for use by the Secretaries described under FSMA section 108 – Research (3) paragraph (1) in conducting research to support the goals and activities described in paragraphs (1) and (2) of subsection (b). The following list of CRA activities are based on the availability of fiscal resources.

HHS Research Activities:

- Modeling the Cost of Food Defense Practices
- Isolation and Identification of Non-traditional Pathogens from Food
- Application of Xmap Technology for the Detection of *Francisella tularensis* in Foods
- Isolation and Identification of Special Pathogens from Food
- Multiplex Detection System for Detection of Biothreat Agents in Food using the Bioplex
- Thermal and Chemical Inactivation of Ricin: Validation Studies

USDA Research Activities:

- Emerging Chemical Threats to Food
- Technologies for Detecting and Determining the Bioavailability of Bacterial Toxins
- Extension of Real-Time PCR to FSIS-regulated Products
- Extension of *Clostridium botulinum* Toxin Real-Time PCR to FSIS-regulated products
- Development of Cyanide/Azide Confirmation
- Development of Method to Detect Toxin/Poisons in FSIS-regulated Products using TOX1
- Development/Validation of *C. botulinum* Toxin Detection Assay
- Evaluation of T021 and T022 (GC and LC-MS Chemical Hazards Screening) Methods in FSIS-regulated Products
- Evaluation of Screening Methods for Chemicals in Food and Animal Matrices using QuECHERS, UHPLC, and High Resolution Mass Spectrometry
- In-house Verification Study on Applied Biosystems 7500 Fast in Correlation with the Pathatrix Auto for Detection of Low Level of *Escherichia. coli* O157:H7 in Raw Ground Beef Products

DHS Research Activities:

- Food Product Tracing Technology Capabilities and Interoperability
- Risk Mitigation and Food Supply Chain Design and Control
- Food and Agriculture Information Sharing Environment
- Modeling Health Care Surge Capacity Requirements during an Intentional Attack on Food Supply
- Advancing the Robust Case Study II
- Refining and Enhancing Risk Message Testing for Use with Vulnerable Populations and the General Population
- Economically Motivated Adulteration
- Analyzing Ingredient – Product Relationships to Enhance Traceability
- Modular and Expandable Detection Platform for Current and Potential Food Toxins and Adulterants

Appendix B:
FSMA Section 108
Coordinated Research Agenda (CRA)

- Application of Surface Enhanced Raman Spectroscopy on Detection of Chemical and Biological Terror Agents in Food Matrices II
- Validation of Agent Inactivation and Isolation from Food Systems
- Optimization and Validation of Real-Time RT-PCR Assay for Rapid Detection of FMDV Use in Bulk Tank Milk Samples

List of Acronyms

AFDO – Association of Food & Drug Officials

AgEOC – Agriculture Emergency Operations Center

AgLearn – The Agriculture Learning system from USDA

ALERT – Assure, Look, Employees, Reports, and Threats tool from FDA

ANPRM - Advance Notice of Proposed Rulemaking

APHIS – Animal and Plant Health Inspection Service

APHL – Association of Public Health Laboratories

ASTHO – Association of State and Territorial Health Officials

BSC – Board of Scientific Counselors

CAV – Criticality, Accessibility, Vulnerability Report

CARVER Software – Vulnerability Assessment tool

CDC – Centers for Disease Control and Prevention

CICAT – Critical Infrastructure – Critical Action Team

CIFOR – Committee on Improving Foodborne Outbreak Response

CIPAC – Collaborative Infrastructure Partnership Advisory Council

CoE – Integrated Food Safety Centers of Excellence

CORE – Coordinated Outbreak Response & Evaluation

CPIMD – Contingency Planning and Incident Management Division

CSTE – Council of State and Territorial Epidemiologists

CVM – Center of Veterinarian Medicine

DHRD – Division of Human Resource Development

DHS – Department of Homeland Security

DFDT – Division of Food Defense Targeting

DOD – Department of Defense

ECS – Emergency Coordination Staff

EDEN – Extension Disaster Education Network

ESF-11 – Emergency Support Function 11: Agriculture & Natural Resources

EMA – Economically Motivated Adulteration

EPA – Environmental Protection Agency

ESF-8 – Emergency Support Function #8

FAO – Food and Agriculture Organization of the United Nations

List of Acronyms (continued)

FARM – Food and Agriculture Readiness Measurement

FAS – Foreign Agricultural Service

FAZDD – National Center for Foreign Animal and Zoonotic Disease Defense

FBI – Federal Bureau of Investigation

FDA – Food and Drug Administration

FDAS – Food Defense Assessment Staff

FDECS – Food Defense Emergency Coordination Staff

FEMA – Federal Emergency Management Agency

FERN – Food Emergency Response Network

FERP – Food Emergency Response Plan

FIRST – Employee are the FIRST line of Food Defense tool from FDA.

FMDV – Food and Mouth Disease Virus

FNS – Food and Nutrition Service

FOODCORE – Foodborne Diseases Centers for Outbreak Response Emergencies

FoodNet - Foodborne Diseases Active Surveillance Network

FSIS – Food Safety and Inspection Service

FSMA – Food Safety Modernization Act

FY – Fiscal Year

GC – Gas Chromatography

GCC – Government Coordinating Council

HHS – Health and Human Services

HSIN- Homeland Security Information Network

HSPD – Homeland Security Presidential Directive

I&A – Intelligence and Analysis

IASD – Infrastructure Analysis and Strategy Division

ICS – Incident Command System

ICLN – Integrated Consortium of Laboratory Networks

IFPTI – International Food Protection Training Institute

IFT – Institute of Food Technologist

IICD – Infrastructure Information Collection Division

IP – Infrastructure Protection

List of Acronyms (continued)

IPT – Food Identity Preservation and Traceability

IS – Information Sharing

LC-MS – Liquid Chromatography-Mass Spectrometry

LLIS – Lessons Learned Information Sharing

MAC-FIO – Multi-Agency Coordination Foodborne Investigation *Outbreaks*

NACCHO – National Association of County and City Health Officials

NAFDS – National Agriculture and Food Defense Strategy

NAHLN – National Animal Health Laboratory Network

NASDA – National Association State Departments of Agriculture

NASPHV – National Association of Public Health Veterinarians

NBIC – National Biosurveillance Integration Center

NCFPD – National Center for Food Protection and Defense

NED – National Exercise Division

NEHA – National Environmental Health Association

NFSMI – National Food Service Management Institute

NICC – National Interagency Coordination Center

NIFA – National Institute of Food and Agriculture

NIMS – Nation Incident Management System

NIPP – Nation Infrastructure Protection Plan

NISAC – National Infrastructure Simulation and Analysis Center

NLR – National Level Reporting

NRF – National Response Framework

NSLP – National School Lunch Program

NRG – National Response Framework

OCM – Office of Crisis Management

OEET – Office of Environmental Engineering and Technology

OFVM – Office of Foods and Veterinary Medicine

OGC – Office of General Counsel

OHA – Office of Health Affairs

OHSEC – Office of Homeland Security and Emergency Coordination

OIE – World Organisation for Animal Health

List of Acronyms (continued)

OOEET – Office of Outreach, Employee Education and Training

OPA – Office of Public Affairs

ORA – Office of Regulatory Affairs

PCR – Polymerase Chain Reaction

PETNet - An Information Exchange for Pet Food Related Incidents

PFP – Partners for Food Protection

PHEMCE – Public Health Emergency Medical Countermeasures Enterprise

PPD-8 – Presidential Policy Directive 8

PSCD – Protective Security Coordination Division

PPQ – Plant Protection and Quarantine

PSA – Protective Security Advisor

QuEChERS - Quick Easy Cheap Effective Rugged Safe (Pesticide residue analysis)

RRT – Rapid Response Team

RT-PCR – Reverse Transcription Polymerase Chain Reaction

RTI – Research Triangle Institute International

SAADRA – Southern Agriculture and Animal Disaster Response Alliance

SAR – Sector Annual Report

SCC – Sector Coordinating Council

SLTT – State, local, Tribal, and Territorial

S&T – Science & Technology

SOPD – Sector Outreach and Programs Division

SSP – Sector Specific Plan (Appendix 4)

Sub-IPC – Sub-Integrated Policy Committee

TTE – Table Top Exercise

TTX – Table Top Exercise

UHPLC – Ultra High Performance Liquid Chromatography

USDA – United States Department of Agriculture

VA – Vulnerability Assessment

Vet-LIRN – Veterinary Laboratory Investigation and Response Network

VS – Veterinarian Services

ZADD – Center of Excellence for Zoonotic and Animal Disease Defense