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AGRO–DEFENSE: RESPONDING TO THREATS AGAINST AMERICA'S AGRICULTURE AND FOOD SYSTEM

HEARING

BEFORE THE

OVERSIGHT OF GOVERNMENT MANAGEMENT, THE FEDERAL WORKFORCE, AND THE DISTRICT OF COLUMBIA SUBCOMMITTEE

OF THE

COMMITTEE ON HOMELAND SECURITY AND GOVERNMENTAL AFFAIRS UNITED STATES SENATE

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TUESDAY SEPTEMBER 13, 2011

U.S. SENATE,
SUBCOMMITTEE ON OVERSIGHT OF GOVERNMENT MANAGEMENT, THE FEDERAL WORKFORCE, AND THE DISTRICT OF COLUMBIA,
OF THE COMMITTEE ON HOMELAND SECURITY AND GOVERNMENTAL AFFAIRS,
Washington, DC.

The Subcommittee met, pursuant to notice, at 2:37 p.m., in room SD–628, Dirksen Senate Office Building, Hon. Daniel K. Akaka, Chairman of the Subcommittee, presiding.

Present: Senators Akaka and Moran.

OPENING STATEMENT OF SENATOR AKAKA

Senator AKAKA. I call this hearing of the Subcommittee on Oversight of Government Management (OGM), the Federal Workforce, and the District of Columbia to order. I want to welcome our witnesses. Aloha and thank you so much for being here.

Today the Subcommittee will examine the Federal Government's progress in implementing the Nation's food and agriculture defense policy. Specifically, we will look at our readiness to respond to and recover from a terrorist attack and natural disasters affecting food and agriculture, and we will be reviewing a new Government Accountability Office (GAO) report on that topic.

Protecting agriculture is critically important to the well-being of Americans. The U.S. agriculture and food sector annually generates more than $300 billion worth of food. One in 12 American jobs is in this sector. Agro-terrorism, such as the deliberate introduction of animal and plant diseases, poses a critical threat to both public health and the world economy.

The agricultural and food system is particularly vulnerable because relatively unsophisticated methods could produce tremendous damage. For instance, foot-and-mouth disease is a highly contagious disease affecting cattle and certain other animals. It can easily be transmitted by aerosol, clothing, and shoes.

The impact of a foot-and-mouth disease outbreak could be devastating to our country's economy. The 2001 outbreak in the United Kingdom (UK) resulted in the slaughter of approximately 7 million animals, and financial losses of $8 billion to agriculture, tourism, and other sectors. In 2002, documents from an al-Qaeda training

camp showed that the terrorist group had researched how to compromise U.S. food supplies.

As we mark the 10-year anniversary of the September 11, 2001, attacks, we may not be facing a specific agro-terror plot, but we must remain vigilant.

I would like to highlight several issues that particularly concern me. The Government Accountability Office will testify that there is no centralized coordination to oversee the Federal Government's progress in implementing Homeland Security Presidential Directive (HSPD) 9 which spells out our Nation's agro defense policy. This means we cannot be sure of the effectiveness of agencies' efforts.

Additionally, I am concerned about how well Federal agencies are working with each other and their State, Tribal, local, and industry partners. No single agency has the ability to address these threats and challenges alone. All levels of government, industry, and citizens need to work together to limit the consequences if an attack occurs. We will look at different areas where coordination and collaboration is critical, such as information sharing, surveillance, and disaster assistance.

I am also concerned about the Federal veterinarian workforce and its ability to respond to major animal disease outbreaks, such as the bird flu or foot-and-mouth disease. Federal veterinarians perform critical food safety research and public health functions.

I held a hearing in 2009 on this topic, where GAO identified several challenges, including troubling veterinarian shortages at numerous agencies involved in food safety inspections and responding to these disease outbreaks. Since that hearing, the Office of Personnel Management (OPM) has established a council that brings Federal agencies together to work on this issue. I look forward to hearing about what progress the agencies here today have made in this area.

Since the September 11, 2001, attacks, we have taken steps to prepare for an attack on our food or agricultural systems, but I remain concerned that America is not ready to effectively respond and recover from an agricultural food event. I look forward to hearing from our witnesses this afternoon and to a productive discussion with you.

I look forward to hearing from our first panel and welcome you here today. Colonel John Hoffman, who is the Senior Research Fellow at the National Center for Food Protection and Defense (NCFPD), at the University of Minnesota, and Dr. Paul Williams, the Director of Agriculture, Food, and Veterinary Programs at the Georgia Emergency Management Agency.

As you know, it is the custom of the Subcommittee to swear in all witnesses, and I would ask both of you to stand and raise your right hand.

Do you swear that the testimony that you are about to give before the Subcommittee is the truth, the whole truth, and nothing but the truth, so help you, God?

Mr. HOFFMAN. I do.

Dr. WILLIAMS. I do.

Senator AKAKA. Thank you. It will be noted for the record that the witnesses answered in the affirmative.

Before we start, I want you to know that your full written statements will be part of the record, and I would also like to remind you to please limit your remarks to 5 minutes. Colonel Hoffman, will you please proceed with your statement?

STATEMENT OF COLONEL JOHN T. HOFFMAN (RET.),[1] SENIOR RESEARCH FELLOW, NATIONAL CENTER FOR FOOD PROTECTION AND DEFENSE, UNIVERSITY OF MINNESOTA

Colonel HOFFMAN. Chairman Akaka, I am honored to represent the National Center for Food Protection and Defense, a U.S. Department of Homeland Security (DHS) Center of Excellence (COE), to provide my perspective on the progress and continuing needs in the effort to defend the Nation's food supply infrastructure from intentional attacks and catastrophic failure.

We believe the global integration and overall complexity of the food supply chain requires that we continue to improve our extensive food safety system and aggressively deploy and mature our food defense capabilities.

The availability of sufficient and safe food is key to the health and stability of any Nation. Food is the one infrastructure you cannot opt out of. The dual mission of safety and defense, collectively referred to as food protection, must have the same standing and dedication of resources as protecting any other infrastructure.

Despite the significant progress in food protection resulting from Homeland Security President Directive (HSPD)–7 and HSPD–9, and the Food and Drug Administration (FDA) and the U.S. Department of Agriculture (USDA), sector-specific plans under the National Infrastructure Protection Plan (NIPP), and the impending implementation of the new FDA Foods Modernization Act, much remains to be done.

Thousands die and hundreds of thousands are sickened each year by food-borne illness. Dr. Robert Scharff estimated in his article on health-related costs from food-borne illness in the United States, that the cost to the Nation is at least $152 billion. Some contend it is closer to $1.4 trillion once private sector costs are included.

Given the current level of food-borne illness in the United States, the concentration of supply chains, our growing reliance on food imports from Nations with suspect food safety standards, and the increasing frequency of economically motivated adulteration events, how will we know an actual terrorist attack has taken place, as opposed to another routine food-borne illness event.

In fact, it may not take weeks, but months to recognize that an intentional attack on our food system is unfolding. Recent events such as the contamination of green peppers with Salmonella St. Paul from Mexico, and this summer's bean sprout contamination with E. coli in Germany demonstrate the large geographic footprint, the potential for extensive casualties, substantial financial burden, and political cost where only a small quantity of one product in international trade is involved.

This has not been lost on our potential adversaries. For example, the following is a translation provided by the Counter Agro Terrorism Research Center (CATRC), in Israel of a recent post to a

[1] The prepared statement of Colonel Hoffman appears in the appendix on page 34.

Jihadist internet forum: "I say, and may Allah help us to success, the qualities of the E. Coli, as well as the ability to develop it into biological weapon, bio-engineered in a laboratory, make the E. coli a most attractive candidate and a significant element in biological warfare, spreading violently, and killing silently, irritating the enemies and tearing their guts apart." Chilling to hear.

Key provisions of HSPD–9 have been implemented with varying degrees of success. Functional information surveillance, deployment of preventive controls, and mitigation strategies have all suffered from distributed responsibilities across government, gaps in overlaps and agency authorities and their capabilities, and concerns about unintended consequences.

The variability of food safety governance from local to State to Federal is another key problem in deploying and maturing an effective food defense system. Simply put, there is no single, coherent, clearly delineated line of authority over our Nation's food defense efforts.

The various and not insignificant challenges are further complicated by concerns over proprietary information protection, liability issues, and the difficulty of implementing an effective system that does not unnecessarily drive up the cost of food. The unfortunate truth is that we as a Nation lack effective surveillance for emergent high consequence food borne illness events, domestic and global.

At present, our primary detection capability is the emergency room. This limits us to a detect to respond capability. Relying primarily on a response-focused detection system is expensive, both in terms of human suffering and economic impact.

While we can start in many places, what we need most is to expand surveillance and detection to include points much earlier in these events' time lines. This would enable mitigation strategies or preventive controls to be informed by surveillance and detection.

There are two detection modes that need to become our objective capabilities, both of which are envisioned in the Food Safety Modernization Act (FSMA). First and more reasonably developed, with commitment, appropriate senior leadership emphasis and some moderate resourcing is detect to protect. This capability detects and identifies serious emergent events closer to the first casualties so as to intervene and protect more of the population that might otherwise be exposed.

Ultimately, we need to move to a detect to prevent policy, where surveillance detects contaminated adulterated products before they are consumed and emergent events in foreign countries are detected before they reach the United States. Such capability, combined with new risk assessment, event modeling, diagnostic tools, and improved mitigation and response capabilities could render our food supply chain a less attractive target for our adversaries.

From many perspectives, the Food Modernization Safety Act may place too much of the early intentional threat identification task on the private sector where there is only limited capability to fulfill this role. As a result, we may be blindsided by an intentional food-based attack on this Nation some time soon.

Such an event could deal a devastating blow to the psyche of the Nation, it could have a decades-long impact on our national econ-

omy, productivity, national security, and our own food security. Successful implementation of the FSMA, which recognizes the risk covered in the spectrum of biological to chemical to radiological, will certainly reduce incidents of food borne illness, but a lot remains to be done.

Aligning government authorities, supporting an increasingly complex nature of responsibilities across government and industry, and averting criminal and terrorism-related contamination events without unduly increasing the price of food is a daunting challenge. As many in the food and agriculture sector have stated, food is the ultimate weapon of mass distribution and agriculture is the ultimate weapon of mass unemployment.

Failure to effectively deploy a national food and agricultural defense capability represents a major strategic risk to the Nation. This risk begs additional focus, new approaches to our food system, preventive controls, surveillance, and early event detection. We ignore these at our peril. Thank you.

Senator AKAKA. Thank you very much, Colonel Hoffman. Dr. Williams, please proceed with your statement.

STATEMENT OF PAUL WILLIAMS,[1] DVM, DIRECTOR OF AGRICULTURE, FOOD, AND VETERINARY PROGRAMS, DIVISION OF HOMELAND SECURITY, GEORGIA EMERGENCY MANAGEMENT AGENCY

Dr. WILLIAMS. Senator Akaka, I appreciate the opportunity to appear before you today and give you an overview of the State's perspective to the implementation of HSPD–9 and the Emergency Support Function (ESF–11). From the State's perspective, the entire concept of ESF–11 and integrated agriculture emergency management did not begin with September 11, 2001. It began in the 1990s as a result of natural disasters.

In 1994, Georgia, Florida, and Indiana became the first States in the Nation to have an ESF–11 in the State Emergency Operation Plan. In 1995, the National Institute of Animal Agriculture comprised of the Nation's largest agribusinesses, recommended that the Federal Government install an ESF–11 in the Federal Response Plan (FRP).

In 2001, the National Emergency Management Association (NEMA) contracted with the Georgia Emergency Management Agency (GEMA) to write a model ESF–11 to be added to the Federal Response Plan. In 2002, the Gilmore Commission recommended to the White House Advisory Council to the President that the intent of the model be placed in the new National Response Plan. This is the genesis of ESF–11.

The concept of Animal Health Emergency Management (AHEM) and Agriculture and Food Defense has for the most part been a capability that has found its leadership, direction, and energy at the State level. Federal agencies have, for the most part, participated with a reluctant acceptance.

In the broad context of Food Defense and Critical Infrastructure, there is a reluctance to provide the same level of commitment as they have in food safety. The Department of Homeland Security, al-

[1] The prepared statement of Dr. Williams appears in the appendix on page 43.

though having statutory responsibility for all elements of the National Response Framework (NRF), including Critical Infrastructure, frequently abdicate their responsibility for leadership and oversight to the sector specific agencies that view these responsibilities "as other duties."

States have grown increasingly frustrated with the lack of a comprehensive strategy for coordination and implementation of a State, regional, and national Agriculture and Food Defense Risk Reduction Plan that addresses the elements of national critical infrastructure.

Preliminary assessments done by each State demonstrate that as much as two-thirds of what their citizens consume came from another State. Food defense requires State, regional, and national coordination. To accomplish regional capabilities, States have begun to organize. Ten southern States formed the State Animal and Agriculture Disaster Response Alliance (SAADRA). In the Midwest, 12 States formed the Multi-state Partnership to begin work on food defense issues.

In 2009, these two regional Alliances met to discuss common goals and objectives. We identified early on a major problem. Six years after HSPD–9, the Government Coordinating Council (GCC) had yet to develop a definition of a National Agriculture or Food Critical Infrastructure Site. As a result, for 6 years after HSPD–9, there were no such sites identified in the United States except for Federal buildings.

In January 2010, over 100 representatives from 30 States met with the Department of Homeland Security, Homeland Infrastructure Threat Risk Analysis Center (HITRAC). After 3 days of meetings, HITRAC accepted the States' recommendation for a definition. By June 2010, over 1,400 Level 2 Agriculture and Food National Critical Infrastructure Sites had been identified and validated by HITRAC.

Training and exercise has changed little since 2005 and does not address the measure of effectiveness of our capability as required by the National Infrastructure Protection Plan.

In 2009, Georgia hosted and conducted a full scale, live agent exercise at the Federal Law Enforcement Training Center (FLETC). Over 300 participants from 60 local, State, Federal, and private sector agencies and organizations participated. The scenario, a chemical attack on the U.S. food supply, created 80,000 illnesses and 40,000 deaths in an unmitigated attack.

In the exercise, a consequence model, funded by the State Homeland Security Grant Program (SHSGP), tracked the 14 target capabilities exercised and the consequence reduction of each. At the end of the exercise, it could be demonstrated that the actions taken by the participants reduced the number of illnesses to 27,000 and the number of deaths to 12,000.

States have demonstrated the ability to advance the capabilities necessary for true agriculture and food defense. This requires funding. From 2003 to 2007, the Federal Emergency Management Agency (FEMA) reported that the Agriculture and Food Sector received approximately one percent of the State Homeland Security Grant Program funds.

Recently, the U.S. Animal Health Association (USAHA), through a resolution, requested funding for a regional exercise and training. FEMA denied this request, stating that from 2007 to 2011, the Agriculture and Food Sector had received 20 percent of the State Homeland Security Grant Program funds. The States refute this amount following a polling of States by the SAADRA group. All States report no increase in funding to the agriculture and food sector from 2007 to 2011.

We must continue to measure the effectiveness of our capability. A list of accomplishments to be checked off as done does not answer the question, "are we safer today than we were before?" Understanding the Agriculture and Food System as Critical Infrastructure will allow us to prioritize response so that each natural disaster does not carve away another piece of our economic viability that does not return. Thank you.

Senator AKAKA. Thank you very much, Dr. Williams, and thank you both for your testimony.

Colonel Hoffman, you testified that there is little doubt that those who want to do us harm will study disease and food-borne illness events and that agro-terrorism presents substantial risks to the United States. I would like to hear more from you about the threat.

Would you please discuss why you believe terrorists may be attracted to using food as a weapon, and what economic and social costs a serious food-based attack could have nationally and globally?

Colonel HOFFMAN. Well, Senator, at the beginning you mentioned the foot and mouth disease (FMD) risk. As was demonstrated in the U.K. in 2001, the impact on society, the cost to the Nation, in this case Britain, to deal with an event like that went far beyond anybody's expectations. And, in fact, the full appreciation of the impact on the country socially, economically from a trade standpoint, and just everyday life, was not fully appreciated for years afterwards.

This is not lost on our enemies. They recognize this, as was demonstrated in the records that were found at Tarnak Farms in Afghanistan. Obviously they had been thinking about this because we found written evidence that was the case. These events were horrendous and they had tremendous impact.

Food, for the human side, is simply the fastest way to make things happen. This quote that I provided to you is actually an extract from a much larger translation from a blog in a Jihadist forum where they actually discuss why food makes a good weapon or a modality to deploy a weapon, and how effective even common pathogens can be.

And I think, while we have given appropriate focus to what we call select agents, the more virulent, more dangerous pathogens, these common everyday pathogens like E. coli, which surface in our food supply system with unnerving frequency anyway, could be easily weaponized and the systems for deploying it are demonstrated with every one of these food outbreaks. And the cost of these food outbreaks, as with Salmonella St. Paul, where 44 States were impacted and many, many people were made ill.

This is documented in the media. They can study the media, they can see what happened, they can see very clearly how the event unfolded, and they provide what we call die studies for somebody to look at it and examine how one of these events may occur.

I am not suggesting this would be easy to do, but I am also suggesting it would not be difficult for somebody with determination and some very limited resources. So I believe that the risk is there. I think that implementing the various defense plans that have been promulgated already by the agencies, but also fully implementing, fully resourcing the Food Safety Modernization Act would help go a long way toward making defense a reality.

But I am also concerned about accountability and how we make that happen and how we hold people accountable to make sure those defense plans are put in place.

Senator AKAKA. Thank you Colonel Hoffman. You testified that even if the 2011 Food Safety Modernization Act is funded and regulations are put in place, that there still remains the challenge that there is no single authority in charge of all aspects of the system.

Will you please elaborate on why you believe it is important to have one authority in charge of food defense?

Colonel HOFFMAN. I think the simplest way to describe that need is that it is very difficult to bring to bear, if you will, the majority of their resources to effectively focus your resources on a critical need when the use of those resources and accountability for those resources if fragmented across numerous agencies.

And this is by no means a criticism of those agencies. They are doing what they think are their priorities, their mandates, and what their leadership views needs to be done. But the simple truth is, this results in gaps and overlaps. And lacking that clear line of authority and accountability for steps that have been taken, the preparation for a defense is going to leave gaps.

It is going to leave those overlaps in place. We will not effectively use the limited resources we have, and in today's economy, that is unacceptable. We have to do a better job of effectively using the resources we have, applying them in the most effective manner, and achieving the greatest level of defense we can with the modest resources available.

Senator AKAKA. Thank you. Dr. Williams, you raised concern about the lack of leadership and commitment from the Federal Government on a comprehensive strategy for agriculture and food defense. Will you please elaborate on these concerns?

Dr. WILLIAMS. Yes, sir. The concerns that we have at the State level are, I think, vastly different than some of the concerns that you see at the Federal level. We, at the State level, have to deal with this issue from a situation where it is in our backyard. In other words, every incident occurs in someone's county, someone's municipality that type of issue.

And so, the capability that we have has to be driven down to that particular level, and there is no coordination currently to really accomplish that. I mentioned in my testimony the issue of not having the ability to identify critical infrastructure sites in our States and in our counties.

An ag and food critical infrastructure site is a site that, if compromised, could cause 10,000 or more casualties, affect five or more

States, and could take longer than a year to recover. That is a Level 2 national critical infrastructure ag and food site.

As I mentioned, up until 2010, we did not have any of those sites identified at the State and local level so that we could even begin preparedness to prepare for any type of mitigating actions for those particular sites. We did not know they existed. Today we know that they exist.

But one of the things that we have to do to manage those types of assets at the State and local level is to be able to identify them, place them in what is called the Automated Critical Asset Management System that is operated by the State and local law enforcement, where we begin at that grassroots level to be able to provide the type of security that we need for those types of sites.

We cannot protect everything, but we have to begin to protect those things that can be most injurious to us if we are attacked. And we have had really no leadership or direction for how to actually do that. The States have been doing it by ourselves, more or less, as I mentioned, through some of those compacts.

We have over 30 States right now that are part of regional compacts and we are adding States every day. The testimony that I gave to you earlier was not just my opinion. Thirty States reviewed my testimony before I submitted it to you. And so, it is a general consensus of what we are all seeing out there.

And so, we are looking for ways to begin to develop a State, regional, and national comprehensive food defense capability and we do not have that right now.

Senator AKAKA. Thank you. Dr. Williams, according to your testimony, FEMA reports that from 2007 to 2011, the agriculture and food sector received approximately 20 percent of State Homeland Security Grant Program funds. You refuted that number, indicating that in 2003 to 2007, FEMA reported that only one percent of these funds went to the agriculture and food and that the States' you surveyed reported no increase in funding from FEMA.

Have you been able to determine the source of this discrepancy? Also, what impact has low funding levels had on preparing for a food and agriculture incident?

Dr. WILLIAMS. The States did refute that amount of 20 percent, and I can certainly supply you with all of the reports from 2003 to 2007 where FEMA stated that the States had received one percent of the State Homeland Security Grant Program funds, which is really how States develop their preparedness.

Each State, based on population and risk and various and sundry other types of triggers, receive X amount of dollars. And out of that, the States determine what they actually are going to fund. As we have formed these regional alliances, we began to share information as to how much funding we were actually getting to develop preparedness for food defense, and we have a lot of data that I could share with you that shows each State's allocation for those actions from 2003 forward.

We were unaware that there was any discrepancy being reported until the U.S. Animal Health Association requested funding for training and exercise and were denied, and in the denial letter, FEMA reported, at that time, that there was from 2007 to 2011

there was 20 percent going to the ag and food sector at the State level.

We refuted that and we have sought to be able to validate the discrepancy by polling each State, and from 2003 to—excuse me—from 2007 to 2011, we have a spreadsheet that shows how much each year each State actually got for those purposes. Where the 20 percent came from we do not know.

Now, we have asked FEMA to supply us where those figures came from and they have refused to give us that information. So why there is a discrepancy I am not really sure.

Senator AKAKA. Thank you very much. I would like to call on the Senator from Kansas, Mr. Moran. Thank you so much for being here and for any opening remarks you may have and questions.

Senator MORAN. Well, Mr. Chairman, thank you very much. I would just express—I will submit my opening statement for the record, other than to express my appreciation to you for hosting and holding this hearing.

Senator AKAKA. It will be included in the record.

Senator MORAN. This is a significant issue, certainly for our country. As a Kansan, this is a significant issue for us. Food safety and cultivation agriculture is a significant component of our economy and just the rumor of a contaminant has dramatic consequences upon the agricultural industry and certainly upon the prices received.

And so, I want to make certain that we, as a Congress, and the Department of Homeland Security and others involved in this topic are doing the necessary things to protect our food supply.

In that regard, let me just ask a broad question, and maybe I will start with you, Dr. Williams. Your sense of the commitment by the Department of Homeland Security is, is food and agricultural safety a priority, a focus of the U.S. Department of Homeland Security?

Dr. WILLIAMS. I think it is a concern of Homeland Security. One of the worst things that we did following September 11, 2001, was to coin the term agro-terror. The moment that we did that we stovepiped ourselves as something different.

If you actually look at an attack on agriculture, whether it be foot and mouth disease or avian influenza or any of those types of things, it actually is a Chemical, Biological, Radiological, Nuclear and Explosive (CBRNE) attack. It is an attack using a chemical, biological, or radiological agent on the food supply, whether it is to impact economically, agriculture or food, or whether it is to use the agriculture and food supply as a method of disseminating a chemical, biological, or radiological agent.

CBRNE, going back to the question about the FEMA funding, from 2003 to 2007, FEMA reported that there were five target capabilities that received 56 percent of all the State Homeland Security Grant Program money. One of those was critical infrastructure, which is one reason we are desperate to be in the critical infrastructure game.

The other one was CBRNE. That was one of the five most funded target capabilities. And so, we are beginning to look at those attacks on the food supply as a CBRNE event, rather than an agro-terror event. I am not sure if that answers your question, but——

Senator MORAN. And the result of that distinction is what? What does that mean in practical terms?

Dr. WILLIAMS. In practical terms, that means that we were not at the funding table, and States——

Senator MORAN. So the categorization matters as far as the priority or emphasis, at least in funding, that comes from the Federal Government?

Dr. WILLIAMS. Absolutely. I actually work for the State Administrative Agency in my State. We are the ones that actually manage all of the State Homeland Security Grant Program funds, and my area of expertise is ag and food defense. And I, on a weekly basis, tried to make a point that we needed funding for the ag and food sector for various reasons, for CBRNE and for especially critical infrastructure.

And I was told for over 6 years that until we have a definition of an ag and food critical infrastructure site, we are not eligible for any of those funds. So there were 6 years lost in my State, in your State, and in every State.

Senator MORAN. Is there an understanding within the security community as to where a contamination might most likely occur? What is the distinction between plant agriculture and livestock agriculture? Is it more clear that we are more susceptible or our vulnerabilities lie on the livestock side?

And in addition to the production side of agriculture, then is it more likely that something happens in production agriculture versus something that happens as the food is processed in the food chain?

Dr. WILLIAMS. That is a complicated question.

Senator MORAN. Where are the greatest risks, is my question, I guess.

Dr. WILLIAMS. Well, I think the greatest risk for economic damage probably comes in the production agriculture side, from the introduction of a foreign animal disease or something of that nature.

Senator MORAN. And it is on the animal side?

Dr. WILLIAMS. On the animal side. If you are looking at the ability to kill people, it is obviously in the processing side of things so that you are actually creating a product that is going to be directly consumed by the public. It is also those things that are going to be consumed rapidly, in other words, things that are either packed on ice or stored not in cans, things of that nature.

Things that are going to sit on a shelf for a long period of time are not as attractive as something like seafood, for instance, that is going to be disseminated and eaten by the public within literally 72 hours. Those are particularly vulnerable and particularly dangerous areas.

Senator MORAN. Is our focus more on prevention or upon containment?

Dr. WILLIAMS. I think our focus is primarily on response. I think something happens, we respond. There is not enough effort being made to prevent these things from happening at all. I mean, let us face it. There is going to be less consequences if it never happens.

And one of the things that we are challenged with, and that is one of the reasons that the critical infrastructure piece is so important, is that one of the things that we are forced to do in complying

with the National Infrastructure Protection Plan, is to look at critical nodes, and then when we to look at those critical nodes from where are their supply chains, what are their distribution footprints, and we begin to develop a picture of what that system or subsystem begins to look like in a State, in a region, and across the country. This helps define risk.

I had actually met with the Federal Bureau of Investigations (FBI) last week with our Fusion Center folks and one of the things that they brought up is that intelligence is bits and pieces of information. And people describe that as a piece of a puzzle. Well, one of the FBI agents said something that I thought was particularly good in describing our situation.

A puzzle comes in a box with a picture of what the puzzle looks like on the top. We are forcing our intelligence people to take bits and pieces of the puzzle and put it together with no picture of what the puzzle even looks like.

And through our efforts of painting that picture through critical infrastructure, we are able to begin to describe what that picture of the puzzle looks like. And we have a better chance of interdicting and preventing some of these things from happening to begin with.

Senator MORAN. When you say our focus is more on the containment side, do we have the necessary scientific and technological base of information to know what the response is to be? Is our science sufficient to respond? As you indicate, the most likely attack or introduction of an agent would be on the side of livestock.

Do we have the scientific basis to know what to do when that occurs or is there research yet to be done?

Dr. WILLIAMS. I think that we have a good capability to respond. It is not an accident that we have not had foot and mouth disease in this country since the 1960s or 1950s possibly. Good surveillance, good programs to control and eradicate those types of things, import/export rules and regulations, those all protect us from those types of events.

I think we have the ability to identify an incident after it has occurred and to respond to it reasonably well. One of the things that we saw—and I hate to keep giving a historical perspective—but one of the things that we started seeing in the mid-1980s was a depletion of the agriculture and food response community as far as people are concerned.

We have fewer and fewer people available at the State and field level to respond to one of these types of incidents. And that was one of the reasons that we developed Animal Health Emergency Management and Agriculture Emergency Management, is because we were able to dip into the emergency management community to get the resources that we no longer had in the ag and food community.

And that is still true today. Even though there has been some improvements in the workforce, we still do not have enough boots on the ground to be able to respond to a major event without utilizing the entire emergency management system.

Senator MORAN. Doctor, thank you very much. Colonel, I did not intend to ignore you, although I finally, in visiting with Georgia, I can understand. Appreciate the conversation, Mr. Chairman. Thank you very much.

Senator AKAKA. Thank you very much. Let me start a second round of questions. Colonel Hoffman, you raise concerns that the intelligence community does not focus adequately on emerging dangers within the global food and agriculture sector. You stated that this could result in us being blindsided by the next event.

Would you please describe what you believe the appropriate level of assessment would look like?

Colonel HOFFMAN. I would be happy to.

Senator AKAKA. Also, what steps need to be taken to achieve this?

Colonel HOFFMAN. I would be happy to do that. I think it would be useful to start with an example of one of the shortcomings, because I believe that our intelligence folks do a great job in many areas, but I do not believe that they have sufficient mandate or instruction for actually collecting the kind of information that we need.

I would start with the example of melamine in wheat gluten. When that event occurred, that product was brought into the United States as a supposedly human food grade product. It was purchased by one company from another company through a commodity brokerage arrangement. The broker went out and found the product in a foreign country, imported it into the United States, and sent it to the company that ultimately used it in pet food, fortunately.

Well, the reality is that the situation was actually understood by others in the international community and we seem to have been totally blindsided by that event.

For example, the Chinese entities involved had already been caught putting melamine in products like that in other countries. All right? Two specifically were Australia and the European Union where they had been banned from importing those products because of their tendency to do that.

Yet, that information was not readily available to our industry, was not known by various agencies in the U.S. Government or the State governments that was the case. The product was allowed to come into the country without inspection and forwarded directly to that firm and put into the marketplace.

We need to fix that. We need to create a capability, establish requirements and collection plans, if you will, in the intelligence community to begin to identify when there are changes or shifts in commodity actions in other countries or where there are players who may be cheating on the system.

And there are indicators out there if we are tuned to watch them, and I am afraid we are not, and I believe that this level of surveillance and detection that I have been referring to needs to move beyond the traditional that we are doing looking for indicators of biologic events for human disease.

But actually out into the agriculture community, the food production community around the world to watch for indicators that there are nefarious players, there is somebody preparing to or conducting economically motivated adulteration, or somebody worse may be planning to exploit the food supply chain.

Senator AKAKA. Thank you. Dr. Williams, as you may know, my home State will be hosting the Asian-Pacific Economic Cooperation

(APEC) meeting this fall which Secretary Napolitano has designated as a national special security event (NSSE). I understand that you were a member of an advisory committee for a previous NSSE event.

What are some of the things that we should be focusing on to ensure a safe and secure event in regard to food?

Dr. WILLIAMS. A national special security event is a challenge. My first exposure to one was actually the 1996 Olympic games, but most recently, the 2004 G–8 Summit that was held in Sea Island, Georgia. And the thing that was obvious to us in developing a food defense plan for the Group of 8 and all 30 heads of State that also attended, was they were all fed in congregate feeding areas. In other words, there were areas that were secured so that they could have their luncheons and their dinners and so forth.

It takes at least 6 months, preferably a year, of preparation to put together a food defense plan that is adequate. So planning ahead of time is really important. It is not rocket science. In doing the G–8 Summit, we basically met with the White House food staff and we met with the venue that was actually going to be preparing all the food for the Group of 8.

And we questioned them and we found that they were customarily getting food from over 60 vendors that supplied the various types of food that would be prepared for the President and the rest of the Group of 8.

We looked at those vendors and many of those vendors did not have the ability to secure their food that we felt was adequate. Now, we, being the State of Georgia, both public health and agriculture and emergency management and USDA and FDA, and it was a very good partnership in preparing for that particular event.

An FDA team was responsible for the Group of 8. There were 17 other congregate feeding stations for first responders and other people that were part of those delegations. The responsibility for those other 17 congregate feeding areas fell upon the State, as it would in your State, as far as public health and agriculture, to secure the food that would go into those congregate areas.

What we actually did is we simply reduced the number of vendors from 60 to about three vendors that we could actually provide adequate food security and defense for. Most of those three companies actually had the ability, as a company, to provide the level of security that we actually thought necessary.

All of the food that was purchased for the event, with the exception of a few perishable products, was actually purchased months ahead of time and put in refrigerated warehouses where they had 24-hours-a-day, 7-days-a-week armed law enforcement. And the food that went to the Group of 8 actually moved to those sites in sealed trucks with a law enforcement escort.

Like I say, it is labor-intensive, but it is not particularly rocket science. It is just figuring out what it is that you can protect that will provide the most security for those that are attending the event.

Senator AKAKA. Thank you. I would like to give both of you an opportunity to provide any final statements or comments. Dr. Williams, let me call on you first.

Dr. WILLIAMS. Actually, you have asked me to talk a lot today and I certainly appreciate the opportunity. Actually, for those of us at the State level, this is a particularly unique opportunity to say in front of a group like this the concerns that we actually have.

Today at 11 o'clock, a conference call with the SAADRA, States, the southern States, and the Midwest Multi-State Partnership, took place and there was great excitement that we were actually going to get an opportunity to have our view of this actually heard. I appreciate the opportunity for doing that.

Senator AKAKA. Thank you very much. Colonel Hoffman.

Colonel HOFFMAN. I would simply like to say that I very much appreciate the opportunity to come and be a part of an effort like this. This seems to me, like a step toward re-invigorating the process of getting food defense established as a priority and funded here in the United States. I thank you very much for the opportunity and commend you for holding the hearings.

Senator AKAKA. Thank you very much. Senator Moran, do you have any further questions?

Senator MORAN. Mr. Chairman, just one additional question. You mentioned Australia and another country in regard to knowing something that we did not know and prohibiting the information did not become available or we were not aware. Are there countries out there that are role models for us, Colonel Hoffman? Are there things that other countries are doing better that we ought to look at?

Colonel HOFFMAN. Well, first I would say nobody is doing it perfectly, and that is evidenced by the events that occur in those countries. But I think there are lessons to be learned. Australia is a good example of how they handle imports, how they monitor food and agriculture products coming into their country, and the focus that they put on early detection and prevention at the border. I think we can learn from that.

I think in partnership with the EU, there is a lot we can do to improve our ability to prevent port-shopping and the kinds of things that nefarious players do to try to get things into our countries. So I think this is going to have to be a partnership with other countries, just as it has to be a partnership with government and industry to solve it.

Senator MORAN. Thank you, Mr. Chairman.

Senator AKAKA. Thank you very much, Senator Moran. I want to thank our first panel. Your testimonies have been valuable to us this afternoon and I want to again thank you for your point in trying to focus on this agro-terrorism here in our country. Thank you very much.

I would like to ask the second panel now to come forward. I want to welcome our second panel. Ms. Lisa Shames, who is the Director of Natural Resources and Environment at the Government Accountability Office; Dr. Doug Meckes, Director of Food, Agricultural, and Veterinary Defense Division at the Office of Health Affairs at the Department of Homeland Security; Mr. Ted Elkin, Director of the Office of Food Defense, Communication and Emergency Response at the Food and Drug Administration at the Department of Health and Human Services (HHS); Ms. Sheryl Maddux is the Deputy Director, Office Homeland Security and

Emergency Coordination at the Department of Agriculture, and she is accompanied by Dr. John Clifford, who is the Deputy Administrator and Chief Veterinary Officer for the Animal and Plant Health Inspection Service (APHIS). Dr. Clifford is not providing a statement, but is available to respond to questions.

It is the custom of this Subcommittee to swear in all witnesses and I would ask you to please stand and raise your right hands.

Do you solemnly swear that the testimony you are about to give this Subcommittee is the truth, the whole truth, and nothing but the truth, so help you, God?

Ms. SHAMES. I do.

Dr. MECKES. I do.

Mr. ELKIN. I do.

Ms. MADDUX. I do.

Mr. CLIFFORD. I do.

Senator AKAKA. Thank you. Let the record show that all witnesses responded in the affirmative.

Before we start, I want you to know that your full written statements will be made a part of the record and I would also like to remind you to please limit your oral remarks to 5 minutes. Ms. Shames, please proceed with your statement.

STATEMENT OF LISA SHAMES,[1] DIRECTOR, NATURAL RESOURCES AND ENVIRONMENT, U.S. GOVERNMENT ACCOUNTABILITY OFFICE

Ms. SHAMES. Thank you. Chairman Akaka, Senator Moran, I am pleased to be here today to discuss the defense of this country's food and agriculture system. Senator Akaka, as you observed in your opening statement this is an especially timely issue in observing the tenth anniversary of September 11, 2001.

As one could imagine, any natural or deliberate disruption could present a serious threat. My testimony today highlights GAO's key findings from a report that was requested by Senator Akaka and is being released today. GAO's overall message is twofold. First, there is no centralized oversight of the Federal Food and Agricultural Defense policy, and second, USDA faces challenges in implementing its responsibilities.

Regarding GAO's first key finding, that there is no centralized oversight, we found that food and agriculture defense responsibilities cut across several Federal agencies. For this reason, centralized oversight is critical to help ensure an effective response.

At one time, DHS and the White House Homeland Security Council collected information from agencies about their various activities, but that has ceased. Because there is no centralized oversight, it is unclear if efforts to protect food and agriculture are well-designed and can reduce the Nation's vulnerability to and the impact of terrorist attacks, major disasters, and other emergencies.

GAO's second key finding is that USDA does not have a departmentwide strategy for implementing its food and agriculture defense responsibilities. Such a strategy is essential to guide progress in achieving national security goals. Instead, USDA has delegated these responsibilities to its agencies.

[1] The prepared statement of Ms. Shames appears in the appendix on page 47.

Although these agencies have taken steps to implement the Department's response and recovery responsibilities, they face challenges. For example, the National Veterinary Stockpile (NVS), was developed to respond to the 17 most damaging animal diseases such as a highly pathogenic avian influenza. Positively, critical supplies have been acquired, guidance has been developed, and a full-time liaison was hired to help the States.

However, there are still complex implementation challenges. In particular, vaccines and diagnostic test kits for certain diseases have either not been developed or may be too costly for purchase. Also, some vaccines could take longer than the required 24 hours to deliver to the States. And finally, there may be missed opportunities with HHS to leverage resources with the Strategic National Stockpile which contains medical supplies for human health emergencies, and as such, may be useful for responders in animal emergencies.

Repeating your opening statement that responding to an outbreak of a highly contagious disease, Senator Akaka, you mentioned specifically foot and mouth disease. It also presents challenges as we have seen in the recent outbreaks in Japan, Korea, and the United Kingdom.

In particular, animals infected with foot and mouth disease should be disposed of within 24 hours. But USDA has told us that it could take as long as 80 days to depopulate a single feed lot. While burial has been the preferred disposal method, USDA officials told us that this may not be feasible on a large scale, and could have public health consequences if done incorrectly.

Positively, USDA's draft response plan for foot and mouth disease considers other approaches such as vaccines for at-risk animals that could help mitigate these concerns.

USDA also faces challenges coordinating the Federal food and agriculture response for natural disasters, including hurricanes, floods, and winter storms. There have been 28 in the last 5 years. Positively, State officials we met with said that having a single USDA coordinator facilitated communication and contributed to a successful response.

However, State officials also told us that because multiple Federal agencies become involved, responsibilities are not always clear and could delay a response. These delays could pose a public health risk. In one case during Hurricane Ike, water surges washed cattle, horses, and poultry 15 to 20 miles inland, leaving dead livestock in backyards, in front of hospitals, and on highways. We were told that time was lost because it was unclear if USDA or the Corps of Engineers was to carry out the disposal. In the end, it was USDA that carried it out.

In addition, we found that USDA has not consistently prepared after-action reports. These are documents that summarize what went well and what needed improvement during an emergency. Without a more consistent and comprehensive reporting process, USDA managers may not have the necessary information to identify gaps and address them through corrective actions to help ensure that past mistakes are not repeated.

In our report, we are making numerous recommendations to help ensure that the Federal Government can effectively implement a

food and agriculture defense, and adequately respond to and recover from emergencies affecting food and agriculture. All the agencies we evaluated concurred with our recommendations.

This concludes my prepared remarks and I would be pleased to answer any questions that you may have.

Senator AKAKA. Thank you very much, Ms. Shames. Now I will call on Dr. Meckes. Please proceed with your statement.

STATEMENT OF DOUG MECKES,[1] DVM, DIRECTOR OF FOOD, AGRICULTURAL, AND VETERINARY DEFENSE DIVISION, OFFICE OF HEALTH AFFAIRS, U.S. DEPARTMENT OF HOMELAND SECURITY

Dr. MECKES. Thank you, Chairman Akaka, Senator Moran. My name is Dr. Doug Meckes and I am the Branch Chief for the Food, Agricultural and Veterinary Defense Branch of the Office of Health Affairs (OHA) at the Department of Homeland Security. Thank you for the opportunity to speak to you regarding DHS's efforts to defend our Nation's agriculture, food, human and animal health in an all-encompassing one-health approach.

A central tenet of the DHS mission is protecting the Nation's agriculture, food, human and animal health in the face of all hazards. DHS works to complement the efforts of our partners, including other Federal agencies, that focus on food and agriculture safety to protect our agriculture and food systems which are critical to our public health and to our economic well-being.

Homeland Security President Directive-9, Defense of the United States Agriculture and Food, establishes national policy to defend the agriculture and food system against terrorist attacks, natural disasters, and other emergencies. DHS is responsible for coordination of the overall national effort to protect critical infrastructure and key resources of the United States.

OHA is specifically charged by the Secretary of DHS with providing oversight and management of DHS's implementation of HSPD–9, and coordinating those efforts with other Federal departments and agencies, State, local, Tribal, and territorial governments, and the private sector.

While much remains to be achieved, DHS has approached HSPD–9 tasks and responsibilities in the spirit of collaboration and coordination. With the release of HSPD–9 in February 2004, the Secretary of DHS was identified as the lead and co-lead for specific tasks within HSPD–9. Today I will provide an overview of DSH activities, initiatives, and progress with regard to several of these tasks.

One of OHA's primary responsibilities is to mitigate the consequences of biological incidents through early detection. Within DHS, OHA operates, manages, and supports the Department's biological defense and surveillance programs. The BioWatch Program provides for the detection of aerosolized biological agents and the National Biosurveillance Integration System (NBIS) provides the means to develop and maintain an integrated, real-time, multi-discipline surveillance picture.

[1] The prepared statement of Dr. Meckes appears in the appendix on page 57.

In order to develop resources capabilities related to agriculture and food, State and local governments must integrate the agriculture and food interests into their emergency planning efforts. To facilitate this integration, OHA partnered with the National Center for Food Protection and Defense to develop the Food Sector Food and Agriculture Readiness Measurement Toolkit.

This tool allows the States to self-assess the strengths of their food emergency resources plans. Four States are currently testing the FARM toolkit.

OHA also partnered with the Center of Excellence for Emerging Zoonotic and Animal Diseases (CEEZAD) to develop a partner page on the lessons learned, information-sharing portal where emergency providers and Homeland Security officials can access an online network of content related to lessons learned, best practices, innovative ideas on food, agriculture, and veterinary defense.

A standardized, unified response plan is imperative for effective incident management. The Food Emergency Response Plan (FERP) template assists States with the development of a food-related emergency response plan, which can be integrated into existing all-hazards response planning. OHA partnered with the National Association of the States' Department of Agriculture to revise and update the Food Emergency Response Plan template to align it with the national response framework.

With 20 percent of the United States gross national product coming from agriculture, the importance of the private sector in defending our food supply and keeping our economy strong is critical. The National Infrastructure Protection Plan provides a unifying structure for a public/private partnership model to enhance the protection of the Nation's critical infrastructure.

For the food and agriculture sector, DHS's Office of Infrastructure Protection (IP) and the sector-specific lead agencies, USDA and FDA, co-chair the Government Coordinating Council which developed a sector-specific plan to advance security. The GCC acts as the counterpart and partner to the private industry-led Sector Coordinating Council (SCC) to plan, implement, and execute sufficient and necessary sector-wide security programs for the Nation's agriculture and food sector's critical assets.

DHS's Science and Technologies (S&T's) Office of University Programs taps the expertise of our Nation's colleges and universities to address pressing homeland security needs through the Centers of Excellence Program. The Centers of Excellence engage the academic community to enhance the Department's Homeland Security capabilities for the agriculture and food sector.

In addition to the National Center for Food Protection and Defense, at Minnesota and CEEZAD at Kansas State University, OUP has created the National Center for Foreign Animal and Zoonotic Disease (FAZD) Defense at Texas A&M.

Senators Akaka and Moran, I have touched briefly on just a few aspects of DHS engagement in the agriculture and food sector, and I am pleased to answer any questions you may have.

Senator AKAKA. Thank you very much, Dr. Meckes. Mr. Elkin, would you please proceed with your statement?

STATEMENT OF TED ELKIN,[1] DIRECTOR, OFFICE OF FOOD DEFENSE, COMMUNICATION AND EMERGENCY RESPONSE, CENTER FOR FOOD SAFETY AND APPLIED NUTRITION, FOOD AND DRUG ADMINISTRATION, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Mr. ELKIN. Good afternoon, Chairman Akaka and Senator Moran. I am Ted Elkin, Director of the Office of Food Defense, Communication and Emergency Response for the Center for Food Safety and Applied Nutrition (CFSAN) at the Food and Drug Administration, which is part of the Department of Health and Human Services. Thank you for the opportunity to discuss our food defense activities.

Food safety and food defense continue to be top priorities for FDA. A terrorist attack on the food supply could have both severe public health and economic consequences, while damaging the public's confidence in the food we eat.

FDA is the Federal agency that regulates all the food we eat except for meat, poultry, and processed egg products which are regulated by our partners at the U.S. Department of Agriculture.

FDA's primary mission is to protect the public health. Ensuring that FDA regulated products are safe and secure is a vital part of that mission. While performing our mission, we play a central and a leadership role in the Nation's defense against acts of intentional contamination. It is FDA's goal, working closely with other government and private sector stakeholders, to reduce the likelihood that an FDA-regulated product could be used to poison or otherwise harm Americans.

We also help ensure that the Nation's public health system is prepared to deter a potential threat and is ready to respond to an act of intentional contamination, including terrorism. FDA has been working closely with DHS, USDA and other Federal agencies to implement the Homeland Security Presidential Directives. HHS and USDA exercise key responsibilities as food sector-specific agencies and serve as co-leads for the food sector within the Government Coordinating Council.

The GCC is charged with coordinating agriculture and food defense strategies, activities, and communication across government and between the government and private sector partners. The Food and Agriculture Sector is a public/private partnership that combines expertise from several Federal agencies, as well as that of State, local, tribal, and territorial officials, and the private sector, including more than 100 trade associations and individual firms participating.

Mr. Chairman, I would now like to describe FDA's other food defense activities. FDA's risk-based approach to food defense helps the Agency determine where to focus its resources. As part of its efforts to anticipate threats to the food supply, FDA has conducted extensive scientific vulnerability assessments of different categories of food, determining the most serious risks of intentional contamination with different biological or chemical agents during various stages of food production and distribution.

[1] The prepared statement of Mr. Elkin appears in the appendix on page 66.

Results of these updated assessments are being used to develop technology interventions and mitigation strategies, identify research needs, and provide guidance to the private sector. FDA has made available vulnerability assessment software for the food industry to determine the vulnerability of individual food facilities to attack.

FDA has also developed and made available other tools to help our stakeholders implement and enhance food defense measures. The Food-Related Emergency Exercise Boxed Set released in July, is a compilation of five scenarios based on intentional and unintentional food contamination events, which was developed in collaboration with the Centers for Disease Control (CDC) and USDA. The Food Related Emergency Exercise Boxed (FREE-B), is designed to assist government regulatory and public health agencies in assessing food emergency response plans, protocols, and procedures. It provides stakeholders with a variety of options to test and improve their capabilities to respond to food-related human or animal health emergencies.

The Food Defense Mitigation Strategy Database launched in March 2011 is a new resource outlining preventive measures designed for companies that produce, process, store, package, distribute and/or transport food or food ingredients.

Two additional training tools that FDA has developed are Employee FIRST and ALERT to educate front-line food industry workers and managers about how to lower the risk of intentional food contamination.

Before concluding, Mr. Chairman, I would like to briefly mention the FDA Food Safety Modernization Act, which will provide further protections for American consumers from both intentional and unintentional contamination. FSMA gives FDA a modern mandate and toolkit to improve the safety of the country's food supply. It shifts our food safety focus from reaction and response to prevention, so that prudent prevention measures will be systematically built into all parts of the food system.

Specifically to address the threat of intentional contamination, FSMA directs FDA, in consultation with DHS and USDA, to issue regulations to require appropriate science-based mitigation strategies or measures to protect certain high-risk foods against intentional contamination. Previously, FDA could recommend, but not require, implementation of such food defense measures.

In closing, Mr. Chairman, due to the enhancements being made by FDA and our food defense partners, the United States food defense system is stronger than ever before. Although we have made progress, we are continuously working to improve our ability to prevent, detect, and respond to terrorist threats and other acts of intentional contamination.

Thank you for this opportunity to discuss our food defense activities. I would be pleased to respond to any questions. Thank you.

Senator AKAKA. Thank you very much, Mr. Elkin. Ms. Maddux, would you please proceed with your statement?

STATEMENT OF SHERYL K. MADDUX,[1] DEPUTY DIRECTOR, OFFICE OF HOMELAND SECURITY AND EMERGENCY COORDINATION, U.S. DEPARTMENT OF AGRICULTURE; ACCOMPANIED BY JOHN R. CLIFFORD, DVM, DEPUTY ADMINISTRATOR AND CHIEF, VETERINARY OFFICE FOR THE ANIMAL AND PLANT HEALTH INSPECTION SERVICE

Ms. MADDUX. Chairman Akaka and Senator Moran, I want to thank you for holding the hearing today on the important topic of responding to threats against America's agriculture and food system. On the heels of the 10-year anniversary of the devastating attacks of September 11, 2001, we are reminded of the need for improved vigilance and the importance of partnership and collaboration at all levels of government and with the private sector.

The U.S. Department of Agriculture considers defense of the food and ag sector a critical component of our mission to provide leadership on food, agriculture, natural resources, and related issues based on sound public policy, the best available science, and efficient management.

The sector is composed of a complex system and has the capacity to feed people within and beyond the boundaries of our Nation. These systems, which are almost entirely under private ownership, operate in a highly competitive global market, strive to operate in harmony with the environment, and provide economic opportunities and improve quality of life for the rural and urban citizens of the United States and others around the world.

The sector is dominated by small businesses that employ the majority of the food industry workforce and account for roughly one-fifth of the Nation's economic activity. Further, the sector supply chain operates at the international level with more than 20 percent of all U.S. imports being food products.

My knowledge in the area of agriculture and food defense is comprehensive because for the past 9 years, I have been on the Department's career managers most closely and deeply involved in the Department of USDA's plans and operational programs.

As Branch Chief of the Disaster and Emergency Operations at the U.S. Forest Service headquarters in Washington, DC, when the events of September 11, 2001, occurred, I was the highest ranking USDA career civil servant engaged with these issues based on my 21-year career as a U.S. Forest Service employee and program manager.

The events of September 11, 2001, propelled the Department and myself with it into the rapids of change unleashed by these attacks. I served personally on the ground, both in New York at Ground Zero, and at the Pentagon. I was hand-picked by the Secretary of Agriculture in 2002 to develop USDA's internal plan, and also to represent USDA in joint efforts with the White House Homeland Security Council, and other Federal departments and agencies.

Thus, I have played a major role in interpreting the principles, practices, regulations, and laws governing homeland security, emergency preparedness, continuity of operations of government, and the process of actually designing, implementing national level strategies and action plans to protect the safety and security of the

[1] The prepared statement of Ms. Maddux appears in the appendix on page 79.

Nation's food supply, research facilities, materials, and USDA employees.

USDA has made significant progress in ability to defend the agriculture and food systems since the events of September 11, 2001. USDA's Food Safety Inspection Service (FSIS), Animal and Plant Inspection Service, and the National Institute of Food and Agriculture enhance security through programs aimed at inspecting native and foreign agricultural products, conducting vulnerability assessments, and maintaining laboratory networks capable of rapidly identifying disease and pests that could have drastic consequences on our economy.

Likewise, the Agriculture Research Service operates laboratories and funds research in the United States and abroad that seek to advance our ability to identify, remediate, and even prevent harmful pathogens that threaten the food and agriculture industry.

Our USDA team has collaborated closely with Federal partners as well as State, local, tribal, and territorial and private partners to address critical components of the government's food defense plan. For example, in response to the Homeland Security Presidential Directive–7 and in close collaboration with FDA and DHS, USDA helped to establish the Food and Agriculture Government and Sector Coordinating Councils.

We are currently participating in the Sub-Interagency Policy Committee led by the National Security staff to develop a national strategy for biosurveillance. In addition, USDA has formed a One Health Working Group to augment the respective missions and participating USDA agencies and offices. USDA agencies continue to develop and implement monitoring surveillance programs in collaboration with the Federal, State, local, tribal, and territorial and private sector partners.

We actively participate in the National Biosurveillance Integration, Interagency Working Group, and in addition, FSIS has a full-time liaison working at the DHS National Biological Integration Center. APHIS also participates in that activity by routinely providing subject matter expertise and information sharing on animal health situational awareness on both the domestic and international issues.

These and other issues in the area of surveillance, detection, response, and recovery are central to the ongoing work we are doing to increase our capability and our capacity to respond to an emergency. As the quick overview has shown, USDA plays a critical role in the Nation's security. Even in the current economic environment, it is critical that the agriculture industry continue to maintain and advance its capability and capacity to protect the U.S. food supply.

Threats assume many forms, from natural hazards or acts of terrorism, that would inevitably cause losses in productivity that could decrease food availability for United States consumption, increase commodity prices, decrease exports, harm the national and international confidence in United States products, force smaller farms and ranches out of business, and additional monetary losses on a large scale recovery effort.

USDA will continue to push forward in its effort to build a strategic and efficient approach to improving the safety and security of

the Nation's food supply. Mr. Chairman, that concludes my statement. I am joined today by Dr. John Clifford who is the Deputy Administrator and Chief Veterinary Officer for APHIS's Veterinarian Services Program. So we would be happy to answer any questions.

Senator AKAKA. Thank you very much, Ms. Maddux.

I want to ask Ms. Shames, as you stated in your testimony, GAO found no centralized coordination to oversee governmentwide progress in implementing the Federal Food and Agriculture Defense Policy. Would you please elaborate on the implications of the findings?

Ms. SHAMES. What we found when we conducted this review was that at one time, the Department of Homeland Security, DHS, and the Homeland Security Council had collected information on what the various agencies' activities were, but interest waned a couple of years ago and we found that sort of oversight ceased.

It has not started again. It is something that we recommended that both DHS and the Homeland Security Council resume. In particular, we recommended that there be an interagency process established, that agencies be encouraged to participate in that process, and the agencies, DHS and the Homeland Security Council staff agreed with that.

The implications, of course, are that it puts the country at risk if we do not know what agencies are doing, and it puts us at risk that we cannot have a coordinated response if there were a food and agriculture emergency.

Senator AKAKA. Thank you. Dr. Meckes, GAO recommended that the Department resume its efforts to coordinate agencies' overall HSPD–9 implementation efforts. What steps will the Department take to implement GAO's recommendation?

Dr. MECKES. Senator Akaka, as Ms. Shames mentioned, the Office of Health Affairs, DHS, had previously engaged in a benchmarking of HSPD–9 performance across the interagency. During 2007 and 2008, early 2009, we had literally a champion within the Homeland Security Council that supported us and worked with us to gather information and track the implementation of HSPD–9.

As was mentioned, in 2009, our champion departed the Homeland Security Council (HSC) and then the National Security Council (NSC) was formed with the merger of NSC and HSC. The interest waned in the agriculture and food sector and the implementation of HSPD–9. At this point, we stand ready to support the National Security staff in whatever manner or fashion is deemed appropriate for DHS to participate in renewed efforts to monitor implementation.

Senator AKAKA. The next question is a followup for Mr. Elkin and Ms. Maddux. GAO's report states that White House National Security staff indicated that they are looking to re-engage on HSPD–9 oversight. My question for you is, what interaction have you had recently with the White House on food and agriculture defense issues? Mr. Elkin.

Mr. ELKIN. I am not aware of that many White House activities that we have had from the perspective, if I could, in terms of the questions that you were asking earlier. For the Department, for the FDA and our partnership with the USDA, I mean, that is very

much an engaged effort. When we train for exercises, we certainly try to have our Office of Crisis Management coordinate these activities higher and further through other agencies. I do not know exactly what the quote was in regard to White House involvement, but I will try to flesh that out.

Senator AKAKA. Thank you. Ms. Maddux.

Ms. MADDUX. I think what we have to look at, even though they have not had someone that was assigned as their food and agriculture coordinator that they have had in the past, they have continued to look into dealing with food and agriculture throughout their other interagency policy committees. So the Domestic Resilience Group that I sit on, a lot of the activities, even though they are not directly related to food and ag, they do touch on different aspects of how we would look at recovery through the type of response.

Most recently, through the new Presidential Policy Directive–8 with the new preparedness goal that we are working on, that will have to also be folded into anything that we would do in ag and the food defense with HSPD–9. So even though we do not have a regular person looking on, there are aspects, if you break down HSPD–9 into the different taskings that are there that get picked up, it is just that it is the overall coordination of how they are looking at it is not put there.

We continue to emphasize it within the Department because we still meet with all of our agencies on a monthly basis and do a monthly report. So we know how folks are doing on their HSPD–9, and then we also work with our partners as we put that information into the Annual Sector Report.

Senator AKAKA. Dr. Meckes, like I mentioned during the first panel, Hawaii will be hosting the Asia-Pacific Economic Summit meeting in November of this year. What steps has the Department taken to ensure a safe and secure event in regard to agro defense?

Dr. MECKES. Chairman Akaka, we have not been privy to any of those activities thus far. I am certain that the National Special Event team is working that issue, but we provide consultation to them in regards to specific questions that might arise. So should those come to pass, I will certainly provide that information. But at the present time, we have not been involved in any of those planning efforts, or the Food and Agriculture been in any defense.

Senator AKAKA. Well, thank you very much. Let me call on Senator Moran for any questions he may have.

Senator MORAN. Chairman Akaka, thank you very much. I appreciate the testimony this afternoon. I do not know who exactly to direct this question to. Perhaps it is the Department of Agriculture, the Department of Homeland Security.

Have there been known attempts to introduce foreign animal diseases to our agricultural food safety system? How serious are the threats? And what analysis has been done to suggest that this is a real threat to our food and agriculture system? Dr. Clifford.

Mr. CLIFFORD. Thank you, Senator. There have not, to my knowledge, been any actual known attempts for introduction. I think as Colonel Hoffman had stated, we were aware of those reports earlier, post-September 11, 2001, that those types of things have been

discussed by terrorist groups. But to our knowledge, there has not been any attempt.

Now, having said that, our work at USDA is to protect American agriculture, both plant and animal, from any introduction regardless of whether it is intentional or not intentional, and our response would be the same to either event. So we prepare for the event regardless.

Senator MORAN. That is a good point. Even though it may be intentional or it may not be intentional, the consequences could be very similar and very devastating. Is that true?

Mr. CLIFFORD. Yes, and it also is dependent upon the agent that they are introducing. So I would also add that in our preparedness, we do pathway analysis. We look at risk analysis on most likelihood of introduction of different types of diseases.

Now, other than the terrorist threat, the most likely way for these types of diseases to enter the United States today is through accidental introduction, not through intentional introduction. Our import requirements are stringent, they are not zero risk-based. We do not close our borders, but they are a risk-based approach to minimize the introduction of foreign animal diseases into the United States.

And as previously stated, we actually have not had a case of foot and mouth disease in this country since 1929. We have had an introduction in the last probably 8 to 10 years ago of exotic Newscastle disease in California. That in itself was a very devastating event for us, which we were able to respond to and address appropriately.

Senator MORAN. I mentioned this earlier, but I would reiterate, even the rumor of the disease introduction, whatever disease it is, has had tremendous consequences in market prices. But particularly even today, we are fighting to get our export markets back from really the rumor of BSE, for example. So the threat is certainly something to be concerned about, but in the absence of an actual introduction, other countries use this to their advantage, certainly to our—to their advantage economically.

Mr. CLIFFORD. Yes, sir, they do, and especially in a number of areas. I think, BSE is an issue that we have appropriately addressed throughout the world. It is a disease that is on a decline, but it is still used politically to block trade.

With regards to diseases like foot and mouth disease, I think it is important, as noted in the GAO report. If we get foot and mouth disease into the United States, in certain parts of the country, it could be very devastating.

But as an organization that is looking at the best interest for the livestock industry in the United States, we have to take a new approach, a new look to the way we address these diseases today. We cannot just have a scorched earth-type policy where we go out and kill and destroy millions and millions of animals, like we saw in the U.K. with burning carcasses.

So we have to look at the development of new technologies, new vaccines to be able to address these in a more practical way where we minimize the amount of the animals that we are putting down and the destruction, and also, at the same time preventing spread of that disease from one herd to the next.

Senator MORAN. That is a segue to a line of a couple of questions that I wanted to followup, but it is also in line of my question to the gentleman, the previous witness from Georgia about prevention versus reaction or containment. You are suggesting that we need to have a greater emphasis or we are emphasizing more the prevention through vaccines and, I assume, other methods as compared to simply—it is not simple, but killing cattle after the fact.

Mr. CLIFFORD. Correct. And I would agree. The best approach is prevention, and prevention comes through early detection and that means you have to have good strong surveillance systems to be able to detect that. So those are the types of approaches we need to take.

At USDA, one of the things that we are doing is we used to approach diseases from a standpoint of pulling samples on animals to test for a single or maybe two diseases. We are looking at implementation of a comprehensive surveillance approach and the first species we are looking at doing this for is swine, where we are looking at multiple disease issues with a single sample. So that we are doing the rights types of surveillance for multiple surveillance streams.

But the thing is, those things do not always get the attention or the resources because they are not the issue today that is on the front page. It is a prevention issue. It is not a response and reaction issue.

Senator MORAN. Well, in addition to surveillance and, Dr. Meckes, your testimony talks about food and agricultural research, and you talk about the potential of a vaccine scheduled for completion based upon approval of APHIS and the regulatory process, in 2012.

Do we have the scientific—let me say it this way. Through science and research, do we have the ability to develop the necessary vaccines and antivirals, the diagnostic capabilities to reduce the damaging economic and health consequences from the introduction of animal disease?

Dr. MECKES. Senator Moran, as you are well-aware, the threat of foot and mouth disease to your State of Kansas is always on the mind of those of us involved in agriculture.

Senator MORAN. Thank you.

Dr. MECKES. And certainly, the development of a vaccine has been one of the foremost efforts at Plum Island Animal Disease Center off the coast of New York. We are, in fact, in concert with the USDA, APHIS, and USDA Agricultural Research Service (ARS), close to developing a vaccine that will be available for foot and mouth disease.

As to the specifics of the disease, the nature of it, I would ask that I could provide you with additional followup from the Science and Technology Directorate of the Department of Homeland Security that is working toward that end.

Senator MORAN. Well, that would be fine, sir. Let me ask a broad question which is, is that the hope for the future, is that we can develop the necessary capabilities through science and research so that the consequences of the introduction of one of these diseases is minimized so that really no terrorist ever decides, This is the way to attack the United States because the economic and life-

threatening consequences of that introduction no longer are significant? Are we headed to that point? Is that a goal?

Dr. MECKES. Absolutely, and I would suggest that it is not only a goal for all the critters in the country, it is a goal for folks as well, and the efforts that are ongoing at Plum and potentially NBIF, once the construction is complete there, will go a long ways toward, as Dr. Clifford said, preventing the disease and thereby eliminating it as a threat to our country.

Senator MORAN. Secretary Napolitano testified this morning in a full Committee hearing and indicated that we have a ways to go—this is my summary of what she said—in preparedness on agro bioterror and that NBIF, the facility needs to be built. What opportunities—and again, the Department of Agriculture or Department of Homeland Security, what expanded opportunities for research and vaccine development would be available with a Biosafety Level 4 facility that would reduce the risk to agriculture and humans?

And in your testimony, Ms. Maddux, you talk a lot about that bio and agro defense facility.

Dr. MECKES. Dr. Clifford, go ahead.

Mr. CLIFFORD. I think it is very important for us to have state-of-the-art facilities to be able to do our work in foreign animal disease diagnostics and research, which means not only having biosafety level 3 (BSL–3) capabilities, but the BSL–4 capabilities that you are responding to, to be able to work on diseases of concern that have not just an animal health concern, but human health concern, and can be worked with safely in these laboratories.

We do not currently have that capability at Plum Island to do that type of work. That facility is reaching the end of its life span and so, it is very critical that we be able to have a state-of-the-art facility, to be able to do this type of work in.

Senator MORAN. Dr. Meckes.

Dr. MECKES. Absolutely, Senator Moran, we concur. There is a crying need for a facility of this nature in this country at this time. Thank you.

Senator MORAN. Thank you, Mr. Chairman.

Senator AKAKA. Thank you. We will have a second round of questions. Dr. Meckes, HSPD–9 directs the DHS to work with its Federal partners to enhance our ability to detect an attack through biological threat awareness. In response, DHS created the National Biosurveillance Integration System. However, in 2009, GAO found that NBIS was not fully equipped to carry out its mission because it lacked data and personnel from its partner agencies.

Will you please discuss coordination and any other challenges the Department has faced in carrying out this responsibility?

Dr. MECKES. Chairman Akaka, as a member of the Office of Health Affairs, like so many of my fellow members, we are deeply committed to the idea of a National Integrated Biosurveillance Program within the country, and we work closely with our colleagues at the NBIS and at the Center to provide updates on a daily basis.

As a matter of fact, one of my staff is currently detailed to NBIS to provide food and agriculture expertise for their daily operations. We support their efforts. I think Colonel Hoffman spoke to this idea of detection to protect and even detection to prevent, and it is only through the capability of biosurveillance, gathering data, in-

tegrating data, analyzing data, and characterizing data will we ever have that capability.

Senator AKAKA. I would like to give the FDA and USDA an opportunity to discuss their efforts to coordinate with DHS on NBIS. Mr. Elkin.

Mr. ELKIN. Our role in NBIS is that of support. We have our directed information sharing to efforts like Food Shield and HSIN, which are their networks, but our role in NBIS, I think, has been just to provide the information sharing support and data that we could. But I do not know that we have an ongoing detail in that regard.

Senator AKAKA. Ms. Maddux

Ms. MADDUX. USDA has been involved with NBIS since the very beginning. We have had members on the NBIS interagency working group. I have been the representative to the NBIS Interagency Oversight Council. We have done a lot of work, realizing that it is challenging when you are looking at all of the data that they are looking at coming into the integration center.

And so, they have listened to the interagency partners and we have moved forward in that we updated, recently updated the charter that we had when the NBIS project first took place, to where now all the partners are signatories on that charter versus just DHS being a signatory to it.

We are in the process of creating an NBIS strategic direction which will help us, as partners, know exactly, and define what we are looking at, where we wanted to head for the future, the gaps, the areas we need to examine. And that should be ready to go to the Interagency Working Group in October.

And we are also, working, as I mentioned, with the National Security staff on the National Strategy for Biosurveillance. So I feel that the folks over at the National Biosurveillance Integration Center and the individuals that are managing NBIS have really listened to the partners and taken some steps to where I think as we move forward, even though it is going to be a challenge, that we are going to end up where we need to be in the future.

Senator AKAKA. Thank you very much. I have a question for Ms. Shames and I would like Dr. Clifford to respond to Ms. Shames' comments. Ms. Shames, your testimony states that although agencies have taken positive steps on veterinarian workforce issues such as creating the Advisory Council, they still need to evaluate the veterinarian workforce needed during a catastrophic event. Will you please elaborate on this?

Ms. SHAMES. Yes, I can. This was a report that you asked us to do, Senator, and we were pleased to testify on the results a couple of years ago. Basically we found challenges at two levels. First of all, the Office of Personnel Management did not really have a governmentwide understanding of the Federal Government's veterinarian capacity and we know that it is a mission-critical position throughout the government.

We also found that several agencies, including HHS and USDA, had not done a workforce plan, again, for veterinarians which were considered mission critical for them to fulfill their strategic goals. Based on what we have found in our updates, OPM has looked gov-

ernmentwide, has developed this interagency forum, and has developed a strategic workforce plan.

However, on the agency front with HHS and USDA, they have not yet completed their workforce plans. And as you mentioned, in a catastrophic event, veterinarians play a key role. One thing in particular that we found at USDA that underscores the need for a departmentwide approach is that we found that veterinarians were entering USDA through the slaughter plants because it is not a very pleasant job, it has a chronic issue of vacancies, and as soon as these veterinarians were able, they moved on to other parts of USDA.

So we found that in USDA, the left hand did not know what the right hand was doing and that is why we thought that such a departmental approach was especially important.

Senator AKAKA. Thank you very much. Your response to her comments, Dr. Clifford.

Mr. CLIFFORD. Yes. Thank you, Mr. Chairman. We do agree with the GAO report that there is an issue and concern about the veterinarian workforce, and it is not the number of graduates, per se, coming out, but it is the number of graduates that are going into food animal-type medicine and have an interest in that area.

Having said that, with regards to the Food Safety Inspection Service through new hiring authorities, using incentives such as repayment of student loans, incentives for hiring and working for them, have been able to reduce their vacancy rate from about 15 percent to about 7 percent.

Also, with regards to veterinarian workforce plans, I do not know about the departmental level. I know that within APHIS, Veterinary Services, we have a workforce plan for our needs with regards to veterinarians based upon our current resources.

We also do things like the National Animal Health Emergency Response Corps (NAHERC). We have to utilize this—we are not going to be able to employ—the Federal Government is not going to be able to employ enough veterinarians to be able to handle all types of situations. So it is important for us, and through our Veterinary Accreditation Program, to call upon the private sector and other sectors to assist us in those events, not just utilizing the resources within the Federal Government, from other government sectors such as FSIS, who is the largest employer of veterinarians, in APHIS Veterinary Services, who is the second largest employer of veterinarians in the Federal Government, but the private sector.

We have over 600 private veterinarians that are signed up for that activity in case of a national emergency, and we have over 900 animal health technicians to assist in that area. In addition, other things that we're doing is that during an event, an occurrence, in a response, things that we would have traditionally done and assigned with veterinary oversight, we are finding new ways of handling that oversight to free up our veterinarians to be able to address the specific disease issues.

Senator AKAKA. Thank you. Let me call on the Senator from Kansas, Senator Moran, for any further questions.

Senator MORAN. Mr. Chairman, thank you. I have no additional questions and I know that a vote has been called at 4:17. So I ap-

preciate the opportunity to join you here today and appreciate the testimony of our witnesses.

Senator AKAKA. Thank you Senator Moran. I would like to thank all of our witnesses for being here today. This is a very important issue that deserves our utmost attention.

It is clear that we have made some good progress to improve our food and agriculture defenses since the establishment of HSPD–9. However, more work needs to be done. I look forward to working with the Administration and my colleagues in the Senate to make sure we have robust capabilities to defend against both intentional and natural threats to the food and agriculture systems.

The hearing record will remain open for 2 weeks for additional statements or questions other Members may have for you. So the hearing is now adjourned.

[Whereupon, at 4:24 p.m., the hearing was adjourned.]

APPENDIX

Senator Jerry Moran - Opening Statement
Agro-Defense: Responding to Threats Against America's Agriculture and Food System

Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia
September 13, 2011

Chairman Akaka, I appreciate you holding this hearing today to examine our nation's agriculture and food defense policy. As you acknowledged, the agriculture and food industry is a significant part of the U.S. economy, especially in states like Kansas. It is critical we have the right policies and capabilities in place to protect America's farms and food.

I look forward to receiving an update from the panelists before us today about what we are doing, and what we should be doing, to improve our country's preparedness and response to the many threats facing agriculture. I had hoped we could also hear from experts at Kansas State University on this topic. Although none were able to appear today, I want to take a few minutes to highlight some of their contributions in the area of agro-defense.

Kansans have an inherent interest in protecting our agricultural livelihood, and as a result the state and its people have been at the forefront of addressing our vulnerabilities. Kansas State University in particular has long been a leader. In fact, this morning I had breakfast with former K-State President Jon Wefald. In 1999, long before agroterrorism was making national headlines, President Wefald testified before the Senate sounding the alarm and highlighting a K-State program they developed to improve America's response capabilities to terrorist attacks and natural disasters affecting food and agriculture. A few months after September 11, K-State formed the National Agricultural Biosecurity Center (NABC). That facility has conducted statewide agroterrorism exercises and produced a comprehensive carcass disposal assessment for the USDA. In 2004, the State of Kansas constructed the Biosecurity Research Institute (BRI) in Manhattan, Kansas, on K-State's campus. The BRI is a biosafety level 3 (BSL-3) laboratory that researches pathogens threatening livestock, crops, and food.

Most recently, the Department of Homeland Security and the Department of Agriculture have partnered with the State of Kansas and Kansas State University to ensure that the U.S. is prepared to combat outbreaks of foreign animal diseases. Because these diseases can cause devastation to economies and people around the globe, it was decided that a modern federal research lab is urgently needed to replace the current, antiquated animal disease facility off Long Island, which is limited in its capacity to respond to these threats. In 2008, after a rigorous three-year site selection process, DHS and USDA chose Manhattan, Kansas to be the location for the National Bio and Agro-Defense Facility, or NBAF. Soon to be constructed, NBAF is a state-of-the-art BSL 3 & 4 lab. This modern research facility will accelerate the development of vaccines, anti-virals, and diagnostics to protect our country from foreign animal disease outbreaks.

Mr. Chairman, I thank you again for calling this hearing, and I am especially grateful for the work of our witnesses today in safeguarding our country's agriculture economy and food supply. I look forward to their remarks.

Testimony provided to the **Senate Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia** for the hearing entitled *"Agro-Defense: Responding to Threats Against America's Agriculture and Food System."*

Respectfully submitted by:
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Chairman Akaka, Ranking Member Johnson and Members of the Subcommittee, thank you for giving the National Center for Food Protection and Defense, a Department of Homeland Security funded Center of Excellence, based at the University of Minnesota (NCFPD), the opportunity to discuss our nation's preparedness to defend our food supply system and our population from intentional attacks on that system. The continued global integration of the food supply chain and our increasing dependence upon imported food products requires that we continue to develop our extensive food safety system and aggressively deploy and mature our food defense capabilities. The National Center for Food Protection and Defense is honored to have the opportunity to provide one perspective on the progress and continuing needs in the ongoing effort to protect the nation's food supply infrastructure from intentional attacks on the food system.

The use of food as a weapon of war through contamination, destruction or insufficient access dates backs thousands of years. Sadly, such events remain in the news even today. The availability of sufficient and safe food is key to the health and stability of any nation. Food is one infrastructure you cannot opt out of. You can live without electricity, you can stop flying in planes or ride in trains, you can stop using banks but you must eat to survive. Insuring food safety and defending the food system from intentional and criminal acts are a joint responsibility of government and industry. This dual mission of safety and defense, collectively Food Protection, must have the same standing and dedication of resources as protecting any other infrastructure. The hearing today addresses this vital sector and our successes and current gaps in protecting this vital infrastructure.

Before I discuss what I believe are the key unresolved issues, I would like to address the significant recent progress that is improving important aspects of both food safety and our defense posture. During the 1990's, there were several efforts intended to protect the nation from the effects of weapons of mass destruction. These include the 1996 Nunn-Lugar-Domenici Domestic Preparedness Initiative, which built upon the goals of the original Nunn-Lugar Act to improve our ability to respond after an attack by a weapon of mass destruction, including biological agents, and the 1998 Presidential Decision Directive/NSC 63, entitled Critical Infrastructure Protection. It must be noted that these efforts did not specifically recognize the nation's food supply system as a critical infrastructure and little effort was directed to its protection and sustainment in the face of an attack directed to food or that exploited the food system. As a result, once HSPD-7 designated Food and Agriculture as Critical Sectors and HSPD-9 delineated the initial strategic guidance and food defense tasks for government in early 2003, this infrastructure faced a substantial task catching up with those sectors that had five plus years of protective efforts already. This was a huge challenge not just for government but also for the industry. The development of the National Infrastructure Protection Plans, to include the sector specific plans from FDA and USDA, has provided the states and industry with additional useful food protection guidance. Both FDA and USDA published their own commodity or product chain specific food defense guidance as well. The Department of Homeland Security, working with its partners in the various federal agencies and with state local, tribal and territorial government agencies has made substantial

progress in developing capabilities to aid the sector in responding to both potential criminal or terrorist act. While we are by no means fully prepared, government and industry can mobilize substantial resources to respond when needed, once an event is identified and the investigation of the potential product involved begins. Unfortunately for traditional foodborne illness events, given that physicians and emergency rooms are the initial detection system, recent experience suggests that source identification often takes weeks to months.

Other progress of note is the development and institutionalization of the sector coordinating bodies, pioneered by the Food and Agriculture sector. For the government agencies, there is the Food and Agriculture Government Coordinating Council or FAGCC. On the private sector side is the Food and Agriculture Sector Coordinating Council or FASCC. These bodies have proven to be an effective means of collaboration between government and the private sector in the area of Homeland Defense. They are, therefore, useful in our national food defense coordination efforts. The Department of Homeland Security also reached out to academia and actively engaged the education and research communities in the effort to protect our critical infrastructures. The National Center for Food Protection and Defense, hosted at the University of Minnesota, is a multi-university consortium that is engaged in efforts to create and transition to use within the sector new tools for protecting our food infrastructure and to aid the various federal agencies in fulfilling their roles and missions. Others of note are the Centers of Excellence for Zoonotic and Animal Disease Defense hosted at Texas A&M and Kansas State University. Examples of recent work include new diagnostic tools, advanced risk assessment tools designed specifically for the food and agriculture sector, food architecture studies and food system component criticality tools, such as the Food and Agriculture Sector Criticality Assessment Tool (FASCAT), to more effectively focus protective efforts. Indeed, the use of FASCAT, a National Center for Food Protection and Defense developed tool, has enabled the states, for the first time, to add critical food system components to the DHS Level Two Critical Asset listing.

Key provisions of HSPD-9 have been implemented with varying degrees of success. The success or stagnation of some efforts under the provisions of HSPD-9 has most often been influenced by the fractured nature of government responsibilities within the areas addressed, such as in the arena of surveillance and detection where agency interests and concerns around unintended consequences has hampered the development of an effective information sharing environment.

The passage of the 2011 FDA Food Safety Modernization Act may prove to be the most substantial change to food safety and food defense in 50 years. This act, combined with the aforementioned progress will aid in further improvements in our ability to respond to accidental or intentional foodborne illness events. While no additional funding was provided for its implementation, FDA is striving hard to develop the implementing regulations and guidance to the states and industry to facilitate the achievement of the act's goals. Yet components of this law present substantial challenges to industry that may prove impossible obstacles to it full deployment. It now places the burden of protection of the infrastructure, and the food products it provides, against intentional act, to include terrorism and the potential use of weapons of mass destruction that exploit our food supply system, upon the private sector. This is a new responsibility for the sector that has many potential unintended consequences that must be considered before a reasonable implementation of the act can be fully complete. For example, what will be the insurance consequences of this act? How will a firm have any ability to reasonably foresee an intentional act? How does a private sector firm know where the critical point of protection against an intentional act will be when there are currently only limited means to gather, assess and share such threat information between government and the private sector? What components of a firm's operation are subject to the act and what falls under another agency and may

not fall under the provisions of this act? Where are the optimum points for deploying additional surveillance and detection to aid in early event recognition? Here we begin to see significant gaps in our progress towards truly protecting this infrastructure. The truth is that we do not know what the impact on the nation's food infrastructure or the future cost of food will be until several key provisions of this act are fleshed out. The desire on the part of everyone is, I believe, to very carefully and wisely implement these provisions through interagency and public-private cooperation. Yet serious challenges confront the sector as this effort moves forward.

A key problem in deploying and maturing an effective food defense capability is the responsibility matrix distributed vertically and horizontally across our food safety agencies. By that I mean the inconsistencies, overlaps, gaps and fractured responsibilities in food safety that exist at state and locals levels and up through and across the federal agencies. For operators small and large within the private sector, multiple agencies have jurisdiction over various aspects of their activities, whether in food production, processing or distribution and retail. The 2011 FDA Food Safety Modernization Act addresses only that portion of this problem that falls within the purview of FDA.

With such a fractured and disjointed system of food safety governance in place as a foundation, it will be very difficult to build a comprehensive and effective food defense capability. Even with the lofty goals sought under the 2011 FDA Food Safety Modernization Act, when, at some point in the future, the effort is funded and all required regulations are in place, this challenge is not necessarily solved as there is no one authority in charge of all aspects of the system. There are many who have statutory responsibilities for various parts and functions within the overall food safety community. But there is no coherent, clearly delineated line of authority over the broader system at the federal level and the situation is often even more complicated at the state level. I am reminded of the state of coordination and organization within the Defense Department in the 1980s when Army radios could not communicate with Navy radios. Processes within FDA differ from those within USDA/FSIS. Those differ from NOAA and other federal agencies with some role in food protection. The same is true within governments at the state, local, tribal and territory levels. Even in the case of the food and agriculture components of the National Infrastructure Protection Plans, originally FDA and USDA developed separate Sector Specific Plans as guidance to the states under the NIPP. I have often asked a simple question of my colleagues in the various federal agencies responsible for some aspect of protecting this vital infrastructure. That question is "Who is in charge." The answer is always something like "Well, actually no one is in charge of it all!" Even with the recent investment in response, our capability is modest and handicapped by this leadership gap.

At present we also have a vast difference in capability between the states. Many have advanced human disease surveillance programs in place that focus on early detection of key diseases and a very few have aggressive foodborne illness detection programs. Even those programs, however, remain focused upon emergency department reporting based upon an agent specific reporting list and a time to report schedule. Others have very little capability in either area. Regulations across states vary in content and standards. Local and state laboratory capabilities and capacities differ. Food safety rules, requirements and other aspects of the food and public health system vary across the states. This confused regulatory environment makes both compliance and innovation in food protection difficult for private industry that owns and is directly responsible for 80% of this infrastructure.

In the area of system surveillance and early event detection, a priority of the 2011 Food Safety Modernization Act, there is still a long way to go. Effective surveillance and detection, at an early enough stage in the evolution of such events to be preventive instead of forensic, has been difficult for

reasons that vary from fractured responsibilities across government agencies to proprietary information protection to liability issues and the shear difficulty of implementing an effective system that does not unnecessarily drive up the cost of food. To complicate this lack of emergent event awareness and preparedness shortcomings that result, there is an extraordinary level of everyday foodborne illness in this country. Dr. Robert L. Scharff recently stated in his "Health-Related Costs from Foodborne Illness in the United States" for the Produce Safety Project at Georgetown University that his estimate of the annual cost of foodborne illness in the United States is $152 billion. He reported that some, however, attribute much higher overall costs to the annual impact of such outbreaks, even as high as $1.4 trillion once private sector and related costs are included! Whatever the potential cost range, these are big numbers, particularly given the current state of the economy in the United States. These regularly occurring events strain our overall disease detection, emergency response and overall health care system to a point where there is little resilience to deal with any major insult to our health. Even with the latest health care and food safety legislation there is only modest effort to improve our ability for early detection of such events or to reduce their incidence and scale. At the state level, the impact of these all too frequent foodborne illness events is most acutely felt. They undermine our confidence in our food, they are expensive to respond to and mitigate. They result in hardships for victims, financial burdens for the firms involved and can lead to significant job losses for their employees.
To date the implementation of HSPD-9 and the broad acceptance and deployment of the concepts and provisions or the NIPP within the nation's food supply infrastructure have not yet been successful. The National Bio-Surveillance Integration Systems, called for under Paragraph 10 of HSPD-9 has not delivered the sought-after capabilities for a variety of reasons, with shared understanding of mission and inconsistent cooperation among agencies the main issues.

These challenging aspects of effective surveillance and detection, and the related responsibility and liability questions, are not new. They have also challenged the private sector, where many are actually expanding their internal quality control, surveillance, detection and threat assessment efforts to meet new insurance requirements, the statutory requirements of Sarbanes-Oxley , and the expected requirements of the 2011 FDA Food Safety Modernization Act. Yet they have had little effective reach, in most cases, beyond their own internal programs and results are rarely shared with commercial partners or the government for the reasons mentioned above. FDA and USDA face similar challenges and have historically taken a response, compliance and enforcement approach because that has been their mandate. These challenges are, in fact, a key component of the background that led Congress to enact the FSMA. But what is not in the FSMA is the "how" and, where cooperation with key threat information providers is needed, the identification of the "who." FDA is struggling with these new requirements and the approach to their implementation.

The unfortunate truth is that we, as a nation, lack effective surveillance for emergent, high consequence biological events, domestic as well as global. This is particularly true for high consequence foodborne illness events. At present, our primary detection capability is the emergency room. As a result, our existing detection capability is effectively a "detect to respond" capability. Relying primarily on a response focused detection system is expensive, both in terms of financial impact and human suffering. Further, it adds to our overall national health cost problem. Adding to this burden is that the utility of food as a modality to facilitate crime, whether as a means to illicit gain or terrorism, is well demonstrated by recent events. In the past few years we have seen criminal acts targeting food products such as the Economically Motivated Adulteration (EMA) of milk products from China with melamine. We have also seen law enforcement personnel in Iraq targeted by terrorists with contaminated food. Events such as the contamination of green peppers with *Salmonella* St. Paul from Mexico and the recent green sprout contamination with *E Coli* 0104:H4 in Germany both demonstrate

the large geographic impact footprint, extensive casualties and political cost where just a limited quantity of one product in international trade is involved. This is not lost on our potential Jihadist adversaries. As an example of that the following is a translation provided by The Counter Agro Terror Research Center (CATRC) in Israel of a recent post to a Jihadist internet forum:

> "I say, and may Allah help us to success, the qualities of the E. coli, as well as the ability to develop it into biological weapon, bio-engineered in a laboratory, make the E. coli a most attractive candidate and a significant element in biological warfare, spreading violently, and killing silently, irritating the enemies and tearing their guts apart."

If we are to achieve the level of protection and response we owe the American public, we need to solve these fundamental surveillance and detection challenges. I submit that we need a new approach. We must understand unfolding events early enough that a "detection" of an emergent threat or contamination/adulteration events, whether accidental or intentional , enables analysis, confirmation and intervention in sufficient time to reduce or eliminate liability, proprietary information losses and supply chain disruptions while also protecting the public from a high consequence event. This is both desirable and possible. But it will require a larger leadership commitment and broader government and private sector engagement. Quite simply what we need is to move the surveillance focus and the points of detection much earlier in the event evolution timeline. There are two detection points that need to become our objective capabilities. First, the more easily developed – with commitment, appropriate senior leadership emphasis and modest resourcing – is "detect to protect". This goal not yet achieved even given the significant efforts to date, is to detect emergent events early enough in their evolution to protect most of the population who might otherwise be exposed under current capabilities. This would mean that with just a few exposed and a limited number of geographic locations involved, we are "cued" to the event and can intervene earlier than today. This would effectively reduce potential casualties and our health care cost load.

Ultimately, we need a "*Detect to Prevent*" capability where: 1- food supply chain surveillance detects contaminated/adulterated products before they are consumed; 2- emergent events in foreign countries are detected, whether in food or human populations, before there are consequences in the U.S. and we can take preventive measures (whether embargoes, recalls or arriving international passenger screening); 3- supply chain, environment and animal population surveillance that detects pathogen or contamination events before they are problems in the human population. Hence "Detect to Prevent" is the ultimate goal, but it is a long way in the future, given current realities, and in some cases, technologies. This approach would be an additional modest investment that could provide an even more substantial reduction on health care costs.

The FBI, FDA and the USDA investigate and conduct enforcement actions that are structured for successful prosecutions after events since that is their mandate. To the extent they have been given the resources, they are working toward early detection, intervention and event mitigation, but there is much yet to do. We need to be thinking about the form and nature of this threat today and what it will be ten years from now. Who has that task today? It has not been demonstrated that FDA, USDA or even the nation's intelligence community has tackled this task for the entirety of the food and agriculture sector. It is obvious that not only is there no one charged with this task, but there has been little, if any, thought on how to establish such a capability. The FSMA is worded, from the perspective of many in the sector, so as to place this this task and the overall strategic food system defense burden on the private sector itself, where there is little chance that such firms currently have a capability to fulfill this role.

Finally, in assessing these risks to our vital food supply system, our new environment is rapidly changing the very nature of the risk. For example, we are now in a period of "hyper empowered individuals" where a single individual or a small group is empowered with information, technologies and freedom of movement that enables a heretofore unknown freedom of action. It means that these individuals can exploit information, technologies and their innate creativity with consequences far in excess of their capacity just 10 years ago. In the arena of food system protection, this prospect is indeed frightening. It is also important to understand that we now have the ability, as do our potential adversaries (and even the lone wolf) to have heightened situational awareness on almost any topic, to include the functioning of our food supply systems. This is because both the media and government now approach the concept of openness in a manner that further empowers anyone by providing extraordinary access to information on almost any supply chain and near real time commodity trading data. Another major concern for the sector is our increase on cyber reliance across government and industry. Because our adversaries have proved to be formidable cyber criminals, there is an increased risk of proprietary data compromise and broadened situational awareness about even the most mundane operations, from processing to transport, across the food sector.

The context of this risk is further complicated by the scale of even unintentional food contamination or criminal, but not terrorist, adulteration (EMA) events in our global supply system. The scale of these events seem to increase with almost every new food safety or economically motivated adulteration event. Today these events are of an order of magnitude greater than just twenty years ago and the prospects are that their reach and severity will only expand. Given the vast transportation networks supporting the food supply chain and the just in time nature of inventory management within the sector, the speed with which these events unfold and impact our national population now often place our public health, emergency response and law enforcement activities outside the sphere of influence over the events for weeks to months. This was dramatically demonstrated by two recent events in the United States. The first was the *Salmonella* St. Paul contamination of peppers imported from Mexico where it took four months to recognize the actual nature of the event and the actual culprit food item involved. In this case the event impacted all but six states before any real intervention was initiated. The second event was the contamination of peanut paste at a Georgia peanut plant that impacted every state in the nation, and where 18 months was required to track down all of the food items affected. This is clearly not lost on our adversaries.

With the existent level of everyday foodborne illness "noise" in this country, combined with the growing reliance upon food imports from nations with substandard public health oversight and lax standards within their food production systems and the routine presence of economically motivated food contamination events, how will we know an actual terrorist attack has taken place as opposed to just another "routine" foodborne illness event? In fact it may not be weeks but months, given our current capabilities for detection and our lack of appropriate surveillance and intelligence information gathering to appreciate such an event is unfolding. Worse, such delay will mean that our ability to intervene appropriately and to mitigate the event will be insufficient to prevent the terrorist from attaining their mortality and morbidity goals.

Any effective public-private bio-surveillance program requires an open and broadly accessed information sharing environment where key local, state and federal agency staff, practicing clinicians, industry and the public can be informed and can inform. Imagine a time where a clinician goes on duty, where a veterinarian starts his clinical day, or where a food, agriculture or related food industry Quality Assurance / Quality Control specialists can access a web site to learn what are the current biological events or threats, whether disease or foodborne illness related (often we do not know the causative

agent until well into an event) in his/her area (the current situation), what may be expected to impact his/her area in the near future (the forecast) and what may become a problem in the distant future (horizon scan), as well as historical data on biological events, adjusted for cultural, population and environment shifts at the three and five digit zip code level. How can such a trusted, open and comprehensive capability come into being?

The risks involved in our failure to solve these challenges are great. First, the aforementioned cost of foodborne illness to the United States combined with the thousands of deaths and millions sickened each year is unsustainable and unacceptable. Second, there is little doubt, as I mentioned earlier, that those who would do us harm will study recent disease and foodborne illness events as they plan future attacks on the United States and our allies. Recent EMA events, as well as events such as the *E Coli* outbreak in Germany this year, provide roadmaps for potential attack scenarios.

So who will provide the early cuing to emergent events? How will government agencies charged with protecting our food supply, or the food production and service firms across this nation know about these emergent events, particularly if they are foreign in origin? A disturbing fact is that few in the United States Intelligence Community actually work the issue of indicators and warning of emergent or imminent risks within the global food and agriculture sector and within the food system focused public health communities. The Office of the Director of National Intelligence has stated often, this is the result of two circumstances. First, it is not a priority because these Critical Infrastructure sector issues are not generally viewed as strategic risks to the nation. Second, and perhaps even more consequential in the eyes of the Office of the Director for National Intelligence, there are no relevant indicators of any emergent risk to these sectors, beyond, of course, the potential for influenza pandemic. Even that risk is seen as adequately addressed by current HHS initiatives from the US perspective. The result is, unfortunately, that we will, as we have been in the past, be blindsided by the next "event," If that event is minor, there will be few, if any, consequences from a strategic perspective. But if it is significant, well then, we may be in deep trouble. The fact is that we are not looking, not assessing and not aware to the level we should be. Therein lays a significant emergent event detection or early warning gap.

While we have put increased focus on so called "select agents," the fact is that the criminal elements who regularly conduct economically motivated adulteration of products target and employ common food products with commonly available adulterants. Similarly, those who are intent on conducting bio-warfare can easily and reliably exploit common food pathogens, such as *E. coli or Salmonella,* or commercially available toxins as the contaminant. Use of these common agents, given our current surveillance, detection and response posture, may well delay our recognition that the event is an overt attack as opposed to another routine foodborne illness event. Finally, use of such pathogens in an attack via the food supply system has a greater chance of successfully creating high numbers of morbidity and mortality over a larger geographic area than employment of a more sophisticated, but complex bio-warfare weapon that requires unique handling and delivery modalities. The result may well be, given our current posture for detection, mitigation and response, substantial casualties before an intentional foodborne illness outbreak is detected much less recognized as an intentional act. A major intentional food based attack on this nation could crush any financial recovery and deal a devastating blow to the psyche of the nation. It could have a decades long impact on our national economy, productivity, national security, as well as our own food security. Many of the recent food system events in the U.S. and globally, from contaminated California spinach, to contaminated imported Mexican peppers to the intentional use of Melamine in dairy products and wheat gluten, provide

detailed studies of how such events unfold and they provide planning guidance clues for any future food based attack.

We had no early warning on any of these recent events. Yet, in hindsight, there were indicators of most, but we did not have an effective integrated early surveillance and detection capability in place and we were not employing our available international event indicator information collection capabilities in a focused and effective manner. In fact the Chinese had actually employed melamine as early as 2004 in exported products and were detected in Europe and Australia, yet there was no warning through any channel, public or private, that we might expect the arrival of such intentionally adulterated products in the United States, and then we had the2007 pet food contamination event in Canada and the United States. In retrospect, the rising production levels from 2002 to 2006 of processed dairy products within certain Chinese dairy firms could not be sustained by domestic Chinese raw milk production or imports. Something was wrong with the economics and the export levels, but we were simply not looking and, as a result, had no warning. What if this event had been intended to be more malevolent? It is important to note that the melamine contaminated Wheat Gluten surrogate that was found in pet food was permitted to be imported into the United States as a human food grade product.

Any food or agriculture system based terrorist attack presents substantial strategic risks to the United States. These risks fall into four categories. First, there are the substantial human health risks to the American Public. Second, there are the potentially catastrophic damages that a foreign animal disease could bring to the nation's domestic food supply chain and our global trading ability. Third, there is the severe economic damage to our nation's economy that would result. Lastly, there are strategic risks to America's ability to project it power to protect our international interests and /or those of our allies. If we are to achieve the goals set forth in HSPD-9, and the 2011 FDA Food Safety Modernization Act, then what we need are new approaches to the surveillance and detection problem. We need additional food and agricultural subject matter expertise introduced into the intelligence community. We need to invigorate the focus and effort within this community on agricultural and food system risks. We need new tasking based upon new, more sector risk appropriate questions given to this community to explore and answer on a daily basis. We need to look deeper into social changes, economic shifts, infrastructure and production performance, social disruption/disturbance and public health events globally to watch for tests, rehearsals and indicators of the use of attack like agents and modalities. We need to look closer at the purchase patterns of agents (biological and chemical), pre-cursors, laboratory equipment, unusual deployments of food processing or agricultural equipment and for the movement and activities of known suspect individuals within areas and in organizations of interest as part of our strategic risk analysis. Then we need to have appropriate, two way sharing mechanisms that engage both government and the private sector.

If we can combine substantially improved emergent event indicators and warning information flow improvements in early detection and recognition and reductions in the national incidence of foodborne illness, we may have that long sought capability to not only detect, but to effect early intervention in any biological attack on this nation that employs our vast and complicated food supply chain. To bring about such a level of food protection also means that we need to implement the capability to differentiate evolving accidental events from those which may be intentional. We need to develop event diagnostic tools to aid in profiling food characteristics, typical food system function, indication of irregular production system operations, import export profiles, cultural characteristics, irregular food movement transactions or combinations and even to detect unusual orders, shipments or stocks of identified high risk food or ingredients. Current food risk modeling in development with the DHS Centers of Excellence can be of substantial help in developing these tools.

In summary, what we need in place is a capability to monitor global events for indicators that some individual or group of individuals (or even a nation state) is moving towards such an attack, regardless of who the targeted population may be. And we must have the private sector inside the detection and surveillance information sharing environment so that their internal supply chain surveillance and detection results can be integrated into the overall surveillance effort. We need the ability to detect, identify and intervene early in the event evolution cycle of these events. This is the only way we reduce the impact of these events, reduce the scale and cost of response and maintain public confidence in our food supply system.

This is an attainable goal but it will require focus, a modest shift of resources and a senior leadership commitment to reduce the background of current foodborne illness within this country. Even if the new FDA Food Safety Modernization Act does reduce the incidence of accidental food contamination via increased food facility inspection/re-inspection alone, there remains the problem of early detection of emergent international intentional EMA or terrorism related events. And there remains the issue of assuring that the sector is informed in some manner so that events become, at some level, "foreseeable" and detectable. Only then will intervention, mitigation and response cost, both in terms of lives and treasure, be sustainable. As many in the food and agriculture sector often state, food is the ultimate weapon of mass distribution and agriculture is the ultimate weapon of mass unemployment. Food and agriculture attacks and system failures indeed present major strategic risks to the nation and this strategic risk begs a new focus and new approach to system surveillance and early detection. These are risks we ignore at our peril.

Thank you for this opportunity to present my thoughts on our food defense posture.
John T. Hoffman

WRITTEN STATEMENT

BY PAUL WILLIAMS, DVM

DIRECTOR, AGRICULTURE, FOOD AND VETERINARY PROGRAMS

GEORGIA DIVISION OF HOMELAND SECURITY

GEORGIA EMERGENCY MANAGEMENT AGENCY

TO THE

UNITED STATES SENATE

COMMITTEE ON HOMELAND SECURITY AND GOVERNMENTAL AFFAIRS

SUBCOMMITTEE ON OVERSIGHT OF GOVERNMENT MANAGEMENT,

THE FEDERAL WORKFORCE AND THE DISTRICT OF COLUMBIA

SEPTEMBER 13, 20011

Chairman Akaka, and members of the Committee, I appreciate the opportunity to appear before you today to provide an overview of the State's perspective to the implementation of Homeland Security Presidential Decision Directive 9 and Emergency Support Function 11 in the National Response Framework.

OVERVIEW:

I find it difficult to discuss HSPD-9 or ESF 11 without some historical perspective that relates to my States role in its evolution. The entire concept of integrated agriculture emergency management did not begin with 9/11. It began in the mid 1990's as a result of natural disasters that left the typical agriculture and food sector specific agencies unequipped to respond with the resources that they had internally. In 1994 Georgia became the first state in the nation to have an ESF 11 in the State Emergency Operations Plan, followed shortly thereafter by Florida and Indiana. In 1995 the National Institute of Animal Agriculture invited those three states to present this new concept at their National Conference. The result was a resolution by this organization, comprised of the nation's largest agribusinesses, that the Federal Government install an ESF 11 in the then Federal Response Plan. Early in 2001 the National Emergency Management Association contracted with the Georgia Emergency Management Agency to write an ESF 11 model State Plan that could be adopted by states as additions to state emergency operations plans and to be added to the Federal Response Plan. In 2002 the Gilmore Commission recommended to the White House Advisory Council to the President that the intent of the model plan be placed in the new National Response Plan.

This is the genesis of ESF 11 as we see it today. The current representation of ESF 11 is a result of many working groups comprised of local, state, federal and private sector agencies and organizations to reach the compliance levels outlined in the National Response Framework. The concept of Animal Health Emergency Management and Agriculture and Food Defense has for the most part been a capability that has found its leadership, direction and energy at the state level. Federal agencies have, for the most part, participated with a reluctant acceptance. Federal Sector Specific agencies have statutory responsibility for food safety and control and eradication of agricultural disease which are a vital part of Agriculture and Food Defense, but are only a part of Food Defense. They have done a remarkable job in these areas of statutory responsibility. However, in the broader context of Food Defense and Critical Infrastructure there is a reluctance to provide the same level of commitment. The Department of Homeland Security although having statutory responsibility for all elements of the National Response Framework , including Critical Infrastructure, frequently abdicate there responsibility for leadership and oversight to the sector specific agencies that view these responsibilities as "other duties".

HSPD-9 and ESF 11

HSPD-7 in 2003 recognized the Agriculture and Food Sector as one of the eighteen elements of National Critical Infrastructure. In 2004 HSPD-9 described various action items that would begin to build capability in Agriculture and Food Defense to include Agriculture and Food Critical Infrastructure Site identification and prioritization. Progress was made in a number of areas. USDA created the National Veterinary Stockpile that has shown great potential value. FDA created pilot programs that began to develop Rapid Response Teams. USDA, Food Safety Inspection Service in coordination with the National Guard Bureau equipped all 55 State Civil Support Team mobile laboratories with the same capabilities as a Food Emergency Response Network Laboratory. The Department of Homeland Security funded National Centers of Excellence that produced training and exercise programs that have been delivered to many states as well as models to address assessment of Risk for Agriculture and Food Sites. Although these are important benchmarks to HSPD-9, States have grown increasingly frustrated with the lack of a comprehensive strategy for coordination and implementation of a state, regional, and national Agriculture and Food Defense Risk Reduction Plan that addresses the elements of the National Infrastructure Protection Plan. Preliminary assessments of each States agriculture and food system showed that as much as two thirds of what their citizens consumed came from another state. We realized we needed a picture of what our agriculture and food system looked like including its supply chain and distribution foot print and the identification of critical nodes within the system if we were to provide adequate Food Defense. We realized that these supply chains and distribution foot prints would be in multiple states and regions requiring regional information sharing, training and exercise.

2.

To accomplish regional capability and mutual aid states have begun to organize. Southern states formed the State Animal and Agriculture Disaster Response Alliance (SAADRA). This includes most of the States in FEMA Region 4 with the addition of Louisiana and Texas. The group was originally formed to deal with hurricane mutual aid coordination, but later took up the task of dealing with Food Defense. In the Midwest twelve states formed the Multi-state Partnership to begin work on Food Defense issues. In 2009 these two regional Alliances met to begin to discuss common goals and objectives. Twenty eight states attended that first meeting to begin to utilize the Food and Agriculture Criticality Assessment Tool created by the DHS, Center for Food Defense at the University of Minnesota. We identified early on a major problem. Even though HSPD 7 had been issued in 2003, there was still no definition of an Agriculture or Food Critical Infrastructure Site. After six years the Government Coordinating Council and Sector Specific Coordinating Councils had yet to develop a definition of an Agriculture or Food Critical Infrastructure Site. As a result for over six years after HSPD 9 there were no such sites identified in the US except for Federal buildings. In January 2010 over 100 representatives from 30 states met with the DHS, Homeland Infrastructure Threat Risk Analysis Center (HITRAC) in Chicago. After three days of meetings HITRAC accepted the State's recommendations for a definition. By June of 2010 over 1400 Level 2 Agriculture and Food National Critical Infrastructure Sites had been Identified and validated by HITRAC.

BUILDING CAPABILITY THROUGH TRAINING AND EXERCISE

Training and exercise since 9/11 has largely been dedicated to developing local, state, and federal compliance to the Incident Command System, the National Response Plan, and the National Response Framework. September 30, 2005 was a major benchmark in Domestic Preparedness as it marked the compliance of all local, state, and federal agencies with the National Response Plan. Continued delivery of such training is essential to maintaining a state of readiness.

However, the current curriculum of training and exercise does not address some of the unique aspects of Agriculture and Food Defense as it relates to Critical Infrastructure, Continuity of Business, and Resiliency. The National Infrastructure Protection Plan calls for the measurement of Effectiveness of plans not just their compliance with the National Response Framework.

States have taken it upon themselves to develop training and exercises that measure the reduction of consequences by developing models that track the reduction of morbidities, fatalities and economic loss based on the actions taken by the participants in the exercise.

In August 2009, Georgia hosted and conducted a full scale live agent exercise at the Federal Law Enforcement Training Center in Brunswick Georgia. Over 300 participants from 60 local, state, federal and private sector agencies and organizations that included the FBI, US Attorney, CDC, USDA, FDA, DHS,DOD, Georgia Emergency Management, Division of Homeland Security and agribusiness companies participated. There were three scenarios of an attack on the US Food Supply.

Two of the scenarios were interdicted, one became operational. The operational scenario created 80,000 illnesses and 40,000 deaths in an unmitigated attack. In the exercise a consequence model funded by State Homeland Security Grant Program and developed by the Georgia Emergency Management Agency tracked the fourteen target capabilities exercised and the consequence reduction of each. At the end of the exercise it could be demonstrated that actions taken by the participants reduced the number of illnesses to 27,000 and the number of deaths to 12,000.

States have demonstrated the ability to advance the capabilities necessary for true Agriculture and Food Defense. This however, requires funding. From 2003 to 2007 FEMA reported that the Agriculture and Food Sector received approximately 1% of State Homeland Security Grant Program funding. Recently the US Animal Health Association, through a resolution, requested funding for regional exercise and training. FEMA responded, stating that from 2007 to 2011 the Agriculture and Food Sector had received 20% of the State Homeland Security Grant Program funds. The states refute this amount following a polling of states by the SAADRA group. All states report no increase in funding for the Agriculture and Food Sector from 2007 to 2011. The reports actually supported a further decrease in funding from the 1% reported by FEMA for 2003-2007. This is more consistent with the overall 40+% decrease in the State Homeland Security Grant Program from 2007 to 2011.

We must continue to measure the effectiveness of our capability. A list of accomplishments to be checked off as done does not answer the question, "are we safer today than we were before"? Agriculture and Food Defense is not about making bricks. It is about building a wall out of those bricks.

The ability to measure what capabilities are most effective in reducing consequences is essential to funding those things that make a difference rather than funding things that do not.

The ability to understand what elements of the Agriculture and Food System is critical to our National Security and the vitality of our economy is crucial. Understanding the Agriculture and Food System as Critical Infrastructure will allow us to prioritize response so that each natural disaster does not carve away another piece of our economic viability that does not return.

I appreciate the opportunity to make these statements before you today. I will try to the best of my ability to answer any questions that you may have.

4.

United States Government Accountability Office

GAO

Testimony
Before the Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia, Committee on Homeland Security and Governmental Affairs, U.S. Senate

For Release on Delivery
Expected at 2:30 p.m. EDT
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HOMELAND SECURITY

Challenges for the Food and Agriculture Sector in Responding to Potential Terrorist Attacks and Natural Disasters

Statement of Lisa Shames, Director
Natural Resources and Environment

GAO-11-946T

Chairman Akaka, Ranking Member Johnson, and Members of the Subcommittee:

I am pleased to be here today as you examine issues related to food and agriculture emergencies. Agriculture is critical to public health and the nation's economy. It annually produces $300 billion worth of food and other farm products and is estimated to be responsible for 1 out of every 12 U.S. jobs. As a result, any natural or deliberate disruption of the agriculture or food production systems—including natural disasters, disease outbreaks, and food contamination—can present a serious threat to the national economy and human health and can halt or slow trade. The food and agriculture systems are also vulnerable to terrorist attacks, such as the intentional introduction of a foreign animal or plant disease or the intentional contamination of food products.

Recognizing the vulnerability of the U.S. food and agriculture systems, the President issued Homeland Security Presidential Directive (HSPD) -9 in January 2004 to establish a national policy to defend these systems against terrorist attacks, major disasters, and other emergencies. HSPD-9 assigns various emergency response planning and recovery responsibilities to federal agencies, including the Departments of Agriculture (USDA), Health and Human Services (HHS), and Homeland Security (DHS), and also the Environmental Protection Agency (EPA). Separately, DHS's 2008 National Response Framework outlines how the nation will collectively respond to any emergency, regardless of its cause or size. The framework includes 15 emergency support functions (ESF) for the federal response to an emergency or for federal support to states during an emergency. DHS activates individual ESFs when a threat or emergency necessitates a specific type of coordinated federal response. ESF-11 specifically addresses the federal food and agriculture response during emergencies, and USDA is designated as coordinator.

Protecting food and agriculture has been a topic of interest to the Subcommittee for many years. For example, in 2005, we reported to this Subcommittee that, although many steps had been taken to protect agriculture from a terrorist attack, complex challenges limited the nation's ability to quickly and effectively respond to a widespread attack on agriculture.[1] In 2007, we also reported to this Subcommittee that USDA

[1]GAO, *Homeland Security: Much Is Being Done to Protect Agriculture from a Terrorist Attack, but Important Challenges Remain*, GAO-05-214 (Washington, D.C.: Mar. 8, 2005).

and DHS had not determined how they will work together during an outbreak of highly pathogenic avian influenza that is sufficient in scope to warrant various federal disaster declarations.[2] Our prior work has shown that roles and responsibilities must be clearly defined and understood to facilitate rapid and effective decision making.[3] This issue has yet to be resolved.

In 2009, we testified before this Subcommittee that the lack of a government-wide initiative to address current and future veterinarian shortages may place human health, the economy, and the nation's food supply at risk.[4] We made numerous recommendations, including that agencies with food safety responsibilities assess their veterinarian workforces to identify current and future workforce needs, including training and employee development, and that a government-wide approach be used to address these shortcomings. In response, agencies created an interagency forum and developed a strategic workforce plan to obtain a government-wide understanding of the current status and future needs of the federal veterinary workforce. This is a positive step, but more work remains to be done. For example, steps are still necessary to understand the veterinarian workforce needed during a potential catastrophic event—whether a pandemic or an attack on the food supply.

Most recently, you asked us to look at response and recovery from potential terrorist attacks and natural disasters affecting food and agriculture. This statement summarizes our report being released today[5] that (1) evaluates the extent to which there is oversight of federal agencies' overall progress in implementing the nation's food and agriculture defense policy (HSPD-9); (2) evaluates the steps USDA has

[2]See, GAO, *Avian Influenza: USDA Has Taken Important Steps to Prepare for Outbreaks, but Better Planning Could Improve Response*, GAO-07-652 (Washington, D.C.: June 11, 2007).

[3]GAO, *Catastrophic Disasters: Enhanced Leadership, Capabilities, and Accountability Controls Will Improve the Effectiveness of the Nation's Preparedness, Response, and Recovery System*, GAO-06-618 (Washington, D.C.: Sept. 6, 2006).

[4]GAO, *Veterinarian Workforce: The Federal Government Lacks a Comprehensive Understanding of Its Capacity to Protect Animal and Public Health*, GAO-09-424T (Washington, D.C.: Feb. 26, 2009).

[5]GAO, *Homeland Security: Actions Needed to Improve Response to Potential Terrorist Attacks and Natural Disasters Affecting Food and Agriculture*, GAO-11-652 (Washington, D.C.: Aug. 19, 2011).

taken to implement its response and recovery responsibilities outlined in this policy, and identifies challenges, if any, that the department faces in implementing these responsibilities; and (3) identifies the circumstances under which USDA has coordinated the federal food and agriculture response for an emergency for which ESF-11 was activated and challenges, if any, that the parties involved experienced.

I will focus my testimony today on three key points. First, there is no centralized coordination to oversee federal agencies' overall progress in implementing the nation's food and agriculture defense policy. Second, USDA does not have a strategy for implementing its HSPD-9 responsibilities and faces challenges implementing these responsibilities. Third, USDA faces challenges in coordinating the federal food and agriculture response for natural disasters for which ESF-11 was activated.

My statement summarizes the findings in our report, being released by the Subcommittee today, on response and recovery efforts for food and agriculture emergencies. To perform this work we, among other things, reviewed key documents; surveyed animal health officials from all 50 states and five U.S. territories; and interviewed state and industry officials, as well as officials from USDA, DHS, HHS, and EPA—because these agencies have the most responsibilities under HSPD-9. Our report contains a detailed overview of our scope and methodology. We conducted this work in accordance with generally accepted government auditing standards.

No Centralized Coordination Exists to Oversee Federal Agencies' Overall Progress in Implementing the Nation's Food and Agriculture Defense Policy

There is no centralized coordination to oversee the federal government's overall progress implementing the nation's food and agriculture defense policy. Because the responsibilities outlined in this policy (HSPD-9) cut across several different agencies, centralized oversight is important to ensure that efforts are coordinated to avoid fragmentation, efficiently use scarce funds, and promote the overall effectiveness of the federal government. Previously, the White House Homeland Security Council conducted some coordinated activities to oversee federal agencies' HSPD-9 implementation by gathering information from agencies about their progress, and DHS supported these activities by coordinating agencies' reporting of HSPD-9 implementation progress. However, the Homeland Security Council and DHS's efforts are no longer ongoing. Top-level review can help ensure that management's directives are carried out and determine if agencies are effectively and efficiently using resources. Because there is currently no centralized coordination to oversee agencies' HSPD-9 implementation progress, it is unclear how

effectively or efficiently agencies are using resources in implementing the nation's food and agriculture defense policy. As a result, the nation may not be assured that crosscutting agency efforts to protect agriculture and the food supply are well-designed and effectively implemented in order to reduce vulnerability to, and the impact of, terrorist attacks, major disasters, and other emergencies.

USDA Does Not Have a Department-wide Strategy for Implementing Its Response and Recovery Responsibilities

USDA does not have a department-wide strategy for setting priorities and allocating resources for implementing its numerous HSPD-9 responsibilities. Instead, according to USDA, the department assigned HSPD-9 implementation responsibilities to its agencies based on their statutory authority and expertise and allowed individual agencies to determine their implementation and budget priorities. We have previously reported that developing a strategy to accomplish national security goals and desired outcomes helps agencies manage their programs more effectively and is an essential mechanism to guide progress in achieving desired results.[6] Moreover, effective strategies help set priorities and allocate resources to inform decision making and help ensure accountability. Such priority setting and resource allocation is especially important in a fiscally constrained environment. Without such a strategy, USDA cannot be assured that its agencies' efforts are making progress to align with departmental priorities and effectively allocate resources. Therefore, USDA also cannot be assured that it is fulfilling its HSPD-9 responsibilities. According to USDA officials, the department would benefit from strategic direction from the National Security Staff—which supports the White House Homeland Security Council under the current administration—to help prioritize specific activities and funding decisions, given this time of limited resources.

Moreover, although USDA agencies have taken steps to implement the department's response and recovery responsibilities, they also face challenges. For example:

- *National Veterinary Stockpile (NVS):* USDA's Animal and Plant Health Inspection Service (APHIS)—which is responsible for issuing orders and regulations to prevent the introduction or dissemination of animal and plant pests and diseases—has developed the NVS to respond to

[6]See, for example: GAO, *Combating Terrorism: Evaluation of Selected Characteristics in National Strategies Related to Terrorism*, GAO-04-408T (Washington, D.C.: Feb. 3, 2004).

the 17 most damaging animal diseases, such as highly pathogenic avian influenza. This disease is associated with high morbidity and mortality in poultry, and the H5N1 strain of avian influenza is associated with illness and death in humans. Among the steps APHIS took to develop the NVS, was the acquisition of critical supplies to respond to animal disease outbreaks. APHIS also took steps to prepare states to use these supplies, such as developing guidance and hiring a full-time liaison to, among other things, help states develop a plan to manage these supplies.

However, APHIS also experiences complex implementation challenges. For example, although the NVS has acquired various supplies to respond to each of the 17 animal disease threats, vaccines and diagnostic test kits for certain diseases have either not yet been developed or may be too costly for the NVS to purchase. In addition, APHIS officials told us that although they have the capability to deploy certain supplies within 24 hours—as required by HSPD-9—it will take longer to deliver certain vaccines to states. Furthermore, states may not be adequately prepared to receive and use NVS supplies. About one-third of all the states and territories responding to our survey reported completing an NVS plan, which, according to guidance, is needed to ensure emergency responders get the NVS supplies they need. Finally, NVS may be missing opportunities to leverage resources, where appropriate, from the Strategic National Stockpile, as directed by HSPD-9. The Strategic National Stockpile contains medical supplies to address public health emergencies affecting humans, and as such, may have resources that are also useful in emergencies affecting animals. HHS's Centers for Disease Control (CDC), which manages the Strategic National Stockpile, and APHIS have taken some steps to help the NVS leverage these resources. However, confusion about the mission and infrastructure of each stockpile, and disagreement about whether additional resources can be leveraged, may be impeding efforts to identify further leveraging opportunities. Because they have no formal agreement regarding if and when leveraging is appropriate, USDA and HHS may miss opportunities to more effectively utilize federal and state resources.

- *National Plant Disease Recovery System (NPDRS):* USDA's Agricultural Research Service (ARS)—which is the department's chief research agency—has taken steps to develop the NPDRS, a system intended to help the nation recover from high-consequence plant disease outbreaks that could devastate the nation's production of

economically important crops. According to the NPDRS's 2010 draft strategic plan, ARS's principal method for fulfilling this responsibility is to develop an estimated 30 to 50 recovery plans for select high-consequence plant diseases that may enter the United States. As of May 2011, ARS had completed 13 plans, which are intended to provide a brief primer on each plant disease and identify research gaps and priorities. For example, the NPDRS recovery plan for stem rust of wheat—one of the most devastating plant diseases worldwide—states that current understanding of the disease is based largely on 50-year-old data that must be reexamined and identifies 13 specific areas that require updated research. ARS also uses NPDRS funds as a flexible source of funding to help ARS initiate research on new, emerging plant disease problems as they arise.

However, ARS lacks a systematic process to monitor and fill research gaps included in the plans. According to ARS officials, they rely on a variety of entities—including other federal agencies, state governments, land grant universities, and the private sector—to conduct research on high-consequence plant diseases that may fill research gaps identified in the recovery plans. Without a documented, systematic process to monitor the extent to which research gaps are filled, USDA may not have critical information needed to help the nation recover from high-consequence plant disease outbreaks. Moreover, NPDRS guidance states that recovery plans provide an opportunity to indicate where research dollars need to be concentrated in the future. ARS also has not effectively communicated the NPDRS to key stakeholders that need to know about these plant disease recovery plans. The NPDRS draft strategic plan states that recovery from high-consequence plant diseases will require coordination between USDA and states. However, the 12 USDA and state plant health officials we met with all had limited or no knowledge about NPDRS recovery plans, even though ARS officials told us that they were sharing plans through a variety of venues. As a result, key state and federal plant health officials may not have the necessary information to facilitate recovery from high-consequence plant diseases.

- *Recovery from an emergency:* Various USDA agencies have taken steps to enhance recovery efforts for emergencies affecting food and agriculture. For example, several USDA agencies participated in a 2005 EPA-led effort that produced guidance on federal roles and responsibilities for disposing of contaminated animals, crops, and food products and decontaminating affected areas in order to prevent the

spread of disease. APHIS also is partnering with universities, states, and industry to develop continuity-of-business plans for some animal disease emergencies.

However, recovery efforts face critical challenges. For example, there may not be sufficient workforce capacity to depopulate—or slaughter—animals quickly in the event of a catastrophic outbreak of a highly contagious animal disease, such as foot-and-mouth disease, a viral disease of cattle, swine, sheep, and other cloven-hoofed animals. Foot-and-mouth disease could create the need to depopulate millions of animals to control the outbreak. However, APHIS officials told us that it could take as long as 80 days to depopulate a single feedlot with about 100,000 cattle. Also, burial has traditionally been the preferred method for disposal, but USDA officials told us that this may not be feasible on a large scale because, among other things, it is labor intensive and may be limited by topography, soil type, and environmental regulations. According to APHIS officials, the public health consequences of carcass burial on a large scale are unacceptable, as recent outbreaks of foot-and-mouth disease in Japan, Korea, and the United Kingdom have shown. For example, the media reported groundwater contaminations in Korea near some burial sites—including near several schools—that made the water unfit for human use. USDA's November 2010 draft foot-and-mouth disease response plan takes into consideration alternative approaches to depopulation and disposal—such as increasing the use of vaccines for at-risk animals—that could help mitigate the depopulation and disposal resource concerns.

USDA Faces Challenges Coordinating the Federal Food and Agriculture Response for Natural Disasters

According to USDA, from 2007 through May 2011, it coordinated the federal food and agriculture response for 28 natural disasters, including hurricanes, floods, winter storms, and other weather-related emergencies. USDA and state officials we met with said that having a single USDA coordinator to facilitate communication during ESF-11 emergencies contributed to the success of USDA's ESF-11 response. However, they also identified some challenges. For example, when ESFs are activated and multiple federal agencies become involved, agencies' responsibilities for disposing of animal carcasses are not always clear, which has delayed previous disposal efforts and could pose a public health risk. In one case, during Hurricane Ike in Texas in 2008, water surges washed cattle, horses, and poultry 15 to 20 miles inland, leaving dead livestock in backyards, in front of hospitals, and on roads and highways. Texas officials involved with the response told us that valuable time was lost as

federal officials debated whether the U.S. Army Corps of Engineers or USDA would carry out the disposal. Ultimately, DHS's Federal Emergency Management Agency (FEMA)—which directs response to emergencies and major disasters—asked USDA's Natural Resources Conservation Service to do so. The Natural Resources Conservation Service administers a number of programs that encourage conservation, development, and productive use of the nation's land. However, according to officials from that agency, FEMA did not make the request until several days after the hurricane struck, and the carcasses had begun to decompose. We have previously reported that a lack of clarity in leadership roles and responsibilities can result in disjointed federal emergency response efforts among collaborating agencies and confusion about what resources would be provided within specific time frames.[7] To address such a lack of clarity in leadership roles among collaborating agencies, we have reported that a practice to enhance and sustain collaboration is for agencies to work together to define and agree on their respective roles and responsibilities, including how the collaborative effort will be led.[8]

In addition, we found that USDA has not consistently prepared after-action reports—documents that summarize what went well and what needed improvement during an emergency response. Specifically, USDA completed 14 after-action reports—including one that covered the 2008 hurricane season—for various emergencies, even though USDA officials reported to us that ESF-11 has been activated for about 28 emergencies.[9] Moreover, not all of the after-action reports that USDA completed contained the perspectives of key parties involved in the response, such as FEMA officials, relevant USDA officials at the state level, and state officials. Without a more consistent and comprehensive after-action reporting process, USDA managers may not have the necessary information to identify gaps or challenges and address them through corrective actions to help ensure that past mistakes are not repeated. Moreover, in February 2006, a White House report on Hurricane Katrina stated that "too often, after-action reports for exercises

[7]See GAO-06-618.

[8]GAO, *Results-Oriented Government: Practices That Can Help Enhance and Sustain Collaboration among Federal Agencies*, GAO-06-15 (Washington, D.C.: Oct. 21, 2005).

[9]Three of these 28 emergencies occurred in spring 2011 and, therefore, the agency would not have developed after-action reports at the time we completed our audit work.

and real-world incidents highlight the same problems that do not get fixed."[10] According to the report, all departments and agencies should translate findings of homeland security gaps and vulnerabilities into concrete programs for corrective action that are fully implemented in a timely fashion.

In our report, we are making nine recommendations to help ensure that the federal government is effectively implementing the nation's food and agriculture defense policy and to ensure that the nation is adequately prepared to respond to and recover from emergencies affecting food and agriculture. In written comments on the report, USDA, HHS, and DHS generally concurred with the recommendations. In addition, in an e-mail received July 22, 2011, the National Security Staff's Deputy Legal Advisor stated that the National Security Staff agrees that a review of HSPD-9 is appropriate and that they will look for an opportunity to do so. The report contains a complete list of our recommendations, along with agencies' comments, and our evaluation of those comments.

Chairman Akaka, Ranking Member Johnson, and Members of the Subcommittee, this concludes my prepared remarks. I would be happy to respond to any questions that you may have at this time.

GAO Contact and Staff Acknowledgments

For questions or further information regarding this testimony, please contact Lisa Shames, Director, Natural Resources and Environment, at (202) 512-3841 or shamesl@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this testimony. Key contributors to this testimony include Mary Denigan-Macauley, Assistant Director, and Amanda Krause. Kevin Bray and Benjamin Shouse also made important contributions.

[10]The White House, *The Federal Response to Hurricane Katrina: Lessons Learned* (Washington, D.C.: Feb. 26, 2006).

Statement of
Dr. Doug Meckes
Branch Chief
Food, Agriculture, and Veterinary Defense Branch
Office of Health Affairs
Department of Homeland Security

Before the
Senate Committee on Homeland Security and Government Affairs
Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia

"Agro-Defense: Responding to Threats against America's Agriculture and Food System"

September 13, 2011

Good afternoon Chairman Akaka, Ranking Member Johnson, and Members of the Subcommittee,

My name is Dr. Doug Meckes and I am the Branch Chief of the Food, Agriculture, and Veterinary Defense Branch of the Office of Health Affairs (OHA) at the Department of Homeland Security (DHS).

Thank you for the opportunity to speak to you regarding DHS's efforts to defend our Nation's agriculture, food, human and animal health.

DHS's Role in Agro-Security and Food Safety

Homeland Security Presidential Directive 9: Defense of United States Agriculture and Food (HSPD-9), establishes national policy to defend the agriculture and food system against terrorist attacks, major disasters, and other emergencies. DHS is responsible for coordinating the overall national effort to protect the critical infrastructure and key resources of the United States. DHS works to complement the efforts of our partners, including other federal agencies that focus on food and agriculture safety, to protect agriculture and food systems which are critical to our public health and economic well-being. In addition, DHS works to mitigate the consequences associated with catastrophic incidents, and coordinates and integrates federal assets to prevent, protect against, prepare for, respond to, and recover from incidents.

OHA is specifically charged by the Secretary of DHS with providing oversight and management of DHS's implementation of HSPD-9 and coordinating those efforts with other federal departments and agencies, state, local, tribal, and territorial governments, and the private sector.

DHS's Lead HSPD-9 Responsibilities

With the release of HSPD-9 in February 2004, the Secretary of DHS was identified as the lead for five, and co-lead for eight, of the 19 specific tasks delineated in HSPD-9.

DHS leads HSPD-9 efforts to:

- Create a new biological threat awareness capacity to enhance detection and characterization of an attack;
- Ensure that the combined federal, state, and local response capabilities are adequate to respond quickly and effectively to a terrorist attack, major disease outbreak, or other disaster affecting the national agriculture or food infrastructure;
- Develop a coordinated agriculture and food-specific standardized response plan;
- Work with appropriate private sector entities to establish an effective information sharing and analysis mechanism for agriculture and food; and
- Establish university-based centers of excellence in agriculture and food security.

Today I would like to share with you the progress DHS has made in achieving the objectives of HSPD-9.

Biological Threat Awareness Capacity

One of OHA's primary responsibilities is to mitigate the consequences of biological incidents through early detection. Prompt identification of a biological incident has the potential to improve the delivery of medical countermeasures and save lives.

Within DHS, OHA operates, manages, and supports the Department's biological defense and surveillance programs. Two programs that provide biological threat awareness capacity are BioWatch and the National Biosurveillance Integration System (NBIS).

OHA's BioWatch program is the only federally-managed, locally-operated, nationwide environmental detection system designed to detect the intentional release of aerosolized biological agents. This program deploys collection devices and analytical capability in more than thirty high-risk metropolitan areas throughout the nation. BioWatch provides public health experts with a warning of the presence of a biological agent before exposed individuals develop symptoms of illness. This "detect-to-treat" approach provides public health officials with an

opportunity to respond to the release of a biological agent as quickly as possible and mitigate any potentially catastrophic impacts.

Current detection capabilities, termed BioWatch Generation 1 and 2 (Gen 1/2), consist of outdoor aerosol collectors, whose filters are manually retrieved for subsequent analysis in a Laboratory Response Network (LRN) facility. This system, while extremely beneficial, is labor intensive and results may not be available until 12-36 hours after the release of a biological agent has occurred. As a result, OHA is currently testing and evaluating the next generation of BioWatch, Generation 3 (Gen-3). The Gen-3 system will advance current detection technology by providing an automated detection capability that is expected to significantly reduce the time between a release of a biothreat agent and confirmation of that release by BioWatch technology.

In addition to providing critical early detection capabilities, the BioWatch program has increased collaboration between the federal government, state and local public health officials, and emergency management officials. This partnership is a model for future endeavors.

Another key element to an overarching biodefense framework is biosurveillance. OHA is focused on developing and maintaining an integrated, real-time surveillance picture.

To that end, OHA manages NBIS—a consortium of federal partners that was established to rapidly identify and monitor biological events of national concern. NBIS collaborates among federal and state partners to collect, analyze, characterize, and share human, animal, plant, food, and environmental biosurveillance information. The National Biosurveillance Integration Center (NBIC) integrates information from federal agencies and state, local, private sector, and international sources to provide early warnings of a possible biological attack or pandemic. NBIS can then identify important bio-events using the Biosurveillance Common Operating Picture (BCOP)—which is currently being piloted in four states. Through this process, the NBIC and NBIS enhance recognition of biological events, reduce response time, and promote effective response.

The May 2011 *E. coli* outbreak in Germany is a recent example of how NBIS can be used to enhance response to food and agricultural incidents. During this incident, NBIS made subject matter experts available to answer existing concerns about the potential origin and virulence of the associated E. coli strain, and facilitated communication between federal agencies. Sixty-one individuals representing 13 federal staffs, agencies, or departments participated in this process. As a result of this collaborative effort, American citizens at home and abroad were given up-to-date information about the outbreak and how to stay safe. Additionally, the U.S. Customs and Border Protection (CBP) was able to use this information to target imports that may have posed a risk to the United States.

In particular, the presence of a United States Department of Agriculture (USDA) liaison officer has strengthened the NBIC, improving coordination of USDA within the NBIS community and providing Food Safety Inspection Service (FSIS) with timely information. In addition, the quality of food defense and agriculture information shared with other agency partners has noticeably improved in both specificity and depth.

While the NBIC and NBIS have made significant steps toward achieving a robust national biosurveillance system, there is more work to be done. OHA is currently working with our partners and stakeholders to continue to enhance and improve the NBIC, in alignment with statutory requirements and Congressional intent. We will continue to work with our stakeholders to increase collaboration and data integration, improve analysis, and ensure high-quality and timely reporting.

Combined Federal, State, and Local Response Capabilities

Because all emergency response begins at the local level, ensuring adequate local response capabilities is vital to defending our Nation's food supply. DHS has worked to help states identify where they need to develop additional capabilities, and has provided information on grants, best practices, and training.

In order to develop response capabilities related to agriculture and food, state and local governments must integrate agriculture and food interests into their emergency management planning efforts. To facilitate this integration, OHA partnered with the National Center for Food Protection and Defense (NCFPD) to develop the Food Sector Food and Agriculture Readiness Measurement Toolkit (FARM Toolkit). In the early development of the Food Sector FARM Toolkit, OHA worked closely with other DHS components, interagency, non-governmental organizations, and with state and local officials to solicit input and ensure that the toolkit met state and local needs.

The FARM Toolkit allows the states to self-assess the strengths of their food emergency response plans and identify areas for potential improvement through a survey tool. The survey assesses the level of preparedness in the food-sector, level of integration of the food-sector into the emergency management community, current emergency management capabilities of the food-sector, and the emergency management needs of the food sector. Upon receiving the survey results, an integrated database returns relevant information on best practices, planning, training, and funding resources – all designed to help state and local communities improve their preparedness for adverse food incidents.

OHA and NCFPD are currently engaged in an outreach program with five states, and recently completed pilots in Minnesota and Washington to assist the states in using the FARM toolkit.

OHA met with stakeholders from across the Washington and Minnesota state governments in a day-long workshop to review the FARM Toolkit's questionnaire and discussed improvements that could be made to the questions. Later this month, OHA and NCFPD will meet with officials in Oklahoma to present the FARM Toolkit.

An additional benefit of the FARM Toolkit is the ability to identify national trends in preparedness. Summary data from all participants is compiled by NCFPD, without attribution to the submitter, to allow for an overarching view of trends in preparedness and identification of potential gaps.

OHA is also working to improve state and local governments' access to grants to improve preparedness. OHA developed a grants tutorial to assist state and local governments in finding grants to support the development of their response capabilities. The grant tutorial provides education on how to locate, evaluate, and apply for grants, as well as how to manage awards. The grants tutorial and FARM Toolkit are available online at www.FoodShield.org.

OHA also developed a partner page on the Lessons Learned Information Sharing (LLIS.gov) portal where emergency response providers and homeland security officials can access an online network of content related to lessons learned, best practices, and innovative ideas on food, agriculture, and veterinary defense. Best practices help states leverage lessons learned to improve their capabilities and planning.

Food and agriculture sector training and education is another way DHS is working to improve capabilities at the state and local level. The Federal Emergency Management Agency has partnered with colleges and universities to offer training for food and agriculture safety and security. Programs have been offered at the Center for Agriculture and Food Security and Preparedness (CAFSP) at the University of Tennessee, the National Center for Biomedical Research and Training (NCBRT) at Louisiana State University, the Agro-Terror Preparedness Center at Kirkwood Community College in Iowa, and the Western Institute for Food Safety and Security (WIFSS) at the University of California Davis.

Develop a Coordinated Agriculture and Food-Specific Standardized Response Plan

A standardized, unified response plan is imperative for effective incident management. The Food Emergency Response Plan (FERP) template assists states with the development of a food-related emergency response plan, which can be integrated into existing all-hazards emergency response planning. A food-related emergency involves the unintentional or deliberate contamination of food that may impact human health. A food emergency response plan does not apply to food incidents routinely handled by local or state health departments.

In 2006, DHS worked with the National Association of State Departments of Agriculture (NASDA), the USDA's FSIS, and the Food and Drug Administration (FDA) to develop the FERP template, which aligns with the National Response Plan. OHA and NASDA have just completed a revision and update of the FERP, which addresses changes made with the transition of the National Response Plan to the National Response Framework and adds additional potential food events. The FERP will be highlighted during NASDA's annual meeting, which will be held September 14-19, 2011 in Salt Lake City.

Work with the Private Sector to Establish an Information Sharing Mechanism

With 20% of the United States' gross national product coming from agriculture, the importance of the private sector in defending our food supply and keeping our economy strong is critical. DHS works closely with the private sector to share information regarding our food and agriculture system.

The National Infrastructure Protection Plan (NIPP) provides the unifying structure for a public-private partnership to enhance protection of the Nation's critical infrastructure. For the food and agriculture sector, DHS's National Protection and Programs Directorate's (NPPD) Office of Infrastructure Protection (IP) and the sector-specific lead agencies, USDA and FDA, co-chair the Government Coordinating Council (GCC), which develops sector-specific plans to advance security. The GCC acts as the counterpart and partner to the private industry-led Sector Coordinating Council (SCC) to plan, implement, and execute sufficient and necessary security programs for the Nation's food and agriculture sector's critical assets, systems, networks, and functions. In addition, IP conducts tabletop exercises and threat and intelligence briefings with food and agriculture stakeholders.

OHA has worked with DHS's Office of Intelligence and Analysis (I&A), and FEMA on the Health Security Intelligence Enterprise (HSIE), an initiative to integrate public health and healthcare community interests into homeland security information and intelligence exchanges. The initiative coordinates the efforts of the public health and the healthcare communities with the nationwide network of State and Major Urban Area Fusion Centers (fusion centers). OHA has worked to bring agriculture and public health officials into the fusion centers to improve preparedness and response capabilities.

Establish University-Based Centers of Excellence in Agriculture and Food Security

DHS's Science & Technology (S&T) Directorate Centers of Excellence (COE) network is a consortium of hundreds of universities generating ground-breaking ideas for new technologies and critical knowledge to serve the Department's missions. COEs with a food and agriculture focus include: NCFPD, the Center of Excellence for Emerging and Zoonotic Animal Diseases

(CEEZAD), and the National Center for Foreign Animal and Zoonotic Disease Defense (FAZD Center).

The COEs support HSPD-9 efforts through their projects and initiatives. For example, NCFPD and IP developed the Food and Agriculture Sector Criticality Assessment Tool (FAS-CAT) that enabled 30 states/regions to evaluate their most critical food and agriculture infrastructure. As a result, in 2010, the agriculture and food sector identified its first ever Level II critical infrastructure- 121 subsystems and components. Another COE, the FAZD Center at Texas A&M University, through their biological systems program, developed antiviral agents, detection/diagnostic tests, and other countermeasures to enhance detection, diagnosis, prevention and recovery. The Center's biological research focuses on three agents: Rift Valley fever, foot-and-mouth disease, and avian influenza.

Food and Agriculture Research

DHS continues to research plant and animal diseases and is working to develop countermeasures. S&T's Office of National Labs partners with USDA's Agricultural Research Service and the Animal and Plant Health Inspection Services National Veterinary Services Laboratory on the DHS Foreign Animal Disease Countermeasures Program. This program is part of a coordinated interagency strategy to protect U.S. agriculture from the threat posed by these diseases and is executed through the Plum Island Animal Disease Center (PIADC). Since 1954, PIADC has been protecting America's livestock from foreign animal diseases and is the only approved facility in the United States that can conduct R&D on high consequence foreign animal diseases of livestock, specifically foot-and-mouth disease (FMD).

PIADC has been leading the way to develop the first licensed FMD vaccine that can be manufactured in the United States. This vaccine (scheduled for completion based upon approval of the USDA APHIS regulatory process in 2012) will represent the first foreign animal disease countermeasure to emerge from the partnership between DHS-USDA at PIADC. It will be the first new vaccine developed for FMD in over 50 years and, most importantly, will represent the first FMD vaccine that does not require the use of live FMD virus for vaccine production. This will allow for vaccine manufacturing in the U.S., fulfilling USDA end-user need for a countermeasure capable of deployment within 24 hours of an outbreak. This is also the first FMD vaccine based on recombinant DNA technology that was specifically designed and developed to allow differentiation of infected from vaccinated animals, providing USDA with the option of utilizing a vaccinate-to-live outbreak control strategy. Several additional FMD vaccine candidates for other FMD serotypes have successfully completed vaccine efficacy trials at PIADC and are expected to enter the regulatory licensing development pathway in the near future through collaboration with veterinary vaccine manufacturers.

In addition, a molecular diagnostic test for FMD was developed by USDA ARS and APHIS at PIADC and is now operational in over 40 state veterinary diagnostic laboratories. The rapid test

will provide surge capacity in the event of a FMD outbreak in the U.S. An associated diagnostic test for the recombinant FMD vaccine was recently transitioned at PIADC from USDA ARS to APHIS and will be undergoing field validation testing.

Finally, S&T's Chemical/Biological Defense Division and Agriculture Defense Branch have been engaged in the development of new and next generation vaccines and biotherapeutics for high priority zoonotic and animal pathogens.

Other Areas of DHS Collaboration on Food and Agriculture Defense and Security

Outside of DHS's lead HSPD-9 responsibilities, the Department collaborates and supports other departments and agencies on additional tasks of HSPD-9 implementation.

CBP Agricultural Specialists use their experience in the natural and biological sciences, along with their regulatory expertise, to control agricultural imports and combat smuggling. The partnership between CBP and USDA-Animal and Plant Health Inspection Service (APHIS) has strengthened the safety of our Nation's agricultural and natural resources.

In addition, CBP's National Targeting Center (NTC) provides tactical targeting and analytical research in support of anti-terrorism efforts. The FDA's Prior Notice Center is co-located at the NTC and has more than 25 permanent and temporary duty staff working in coordination with CBP to implement the Public Health Security and Bioterrorism Preparedness and Response Act of 2002. The Act, in part, requires registration with FDA of all foreign food facilities that manufacture or process food for human or animal consumption in the United States. It also requires advance notice of any imported shipment of human or animal food.

Furthermore, the Commercial Targeting and Analysis Center (CTAC) in CBP serves as a multi-agency fusion center for targeting commercial shipments that may pose a threat to health and safety, including imported foods. CTAC partners include USDA's APHIS and FSIS along with FDA, the Consumer Product Safety Commission, and U.S. Immigration and Customs Enforcement Homeland Security Investigations. This collaboration is guided by the three core principles announced by President Obama's Food Safety Working Group in July 2009: prevention, surveillance and response.

DHS's Efforts to Support the Federal Veterinarian Workforce

Based upon the recommendations of Senators Akaka and Voinovich, the Office of Personnel Management (OPM) formed the Talent Management Advisory Council (TMAC), a veterinary community working group, to address critical Federal veterinary workforce shortages and develop a proactive, Government-wide approach to deal with these shortages. OHA serves as the lead for the TMAC's Emergency Planning Action Team (EPAT) that works to enhance

efforts to identify the veterinary workforce needed during catastrophic or emergency events. DHS continues to stay engaged in the efforts led by the Office of Personnel Management to support the federal veterinarian workforce.

Conclusion

Chairman Akaka, Ranking Member Johnson, and Members of the Subcommittee, thank you again for this opportunity to speak to you regarding DHS's efforts to defend our Nation's agriculture, food, human, and animal health. I look forward to your questions.

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration
Silver Spring, MD 20993

STATEMENT
OF

TED ELKIN
CENTER FOR FOOD SAFETY AND APPLIED NUTRITION

FOOD AND DRUG ADMINISTRATION
DEPARTMENT OF HEALTH AND HUMAN SERVICES

BEFORE THE
SUBCOMMITTEE ON OVERSIGHT OF GOVERNMENT MANAGEMENT, THE FEDERAL WORKFORCE, AND THE DISTRICT OF COLUMBIA

COMMITTEE ON HOMELAND SECURITY AND GOVERNMENTAL AFFAIRS

UNITED STATES SENATE

"AGRO-DEFENSE: RESPONDING TO THREATS AGAINST AMERICA'S AGRICULTURE AND FOOD SYSTEM"

SEPTEMBER 13, 2011

Release Only Upon Delivery

INTRODUCTION

Good afternoon, Chairman Akaka and Members of the Subcommittee. I am Ted Elkin, Director of the Office of Food Defense, Communication and Emergency Response for the Center for Food Safety and Applied Nutrition (CFSAN) at the Food and Drug Administration (FDA or the Agency), which is part of the Department of Health and Human Services (HHS). Thank you for the opportunity to discuss our food defense activities.

Food safety and food defense continue to be top priorities for FDA. A terrorist attack on the food supply could have both severe public health and economic consequences, while damaging the public's confidence in the food we eat.

A great deal has been done over the past several years to enhance the safety and defense of the food supply in the United States. FDA has worked with other federal, state, local, tribal, and territorial food safety agencies, as well as with law enforcement and intelligence-gathering agencies, and with industry to significantly strengthen the nation's food safety and defense system across the entire distribution chain—from farm to table—to better protect our food supply against deliberate and accidental threats. This cooperation has resulted in greater awareness of potential vulnerabilities, the creation of more effective prevention programs, new surveillance systems, and the ability to respond more quickly to outbreaks of foodborne illness.

Further, the enactment of the FDA Food Safety Modernization Act (FSMA) in January of this year provides additional authorities and opportunities to protect our food supply from intentional and unintentional contamination.

In my testimony today, I will first briefly describe FDA's overall role in counterterrorism activities. Then, I will discuss our collaboration with our food safety and defense partners. I will also describe some of FDA's counterterrorism activities to enhance protection of the food supply. Finally, I will mention some of the food defense enhancements enacted in FSMA.

FDA'S Role in Food Related Counterterrorism Activities

FDA is the federal agency that regulates all of the food we eat except for meat, poultry, and processed egg products, which are regulated by our partners at the U.S. Department of Agriculture (USDA). FDA also is responsible for regulating tobacco products and ensuring that human drugs, human biological products, medical devices, and radiological products, as well as veterinary drugs, are safe and effective and that cosmetics are safe.

FDA's primary mission is to protect the public health. Ensuring that FDA-regulated products are safe and secure is a vital part of that mission. While performing our mission, we play a central and a leadership role in the nation's defense against acts of intentional contamination. It is FDA's goal, working closely with other government and private sector stakeholders, to reduce the likelihood that an FDA-regulated product could be used to poison or otherwise harm Americans. We also help ensure that the nation's public health system is prepared to deter a

potential threat and is ready to respond to an act of intentional contamination, including terrorism.

Collaboration With Food Safety and Food Defense Partners

In its food safety and defense efforts, FDA has many partners—federal, state, local, tribal, and territorial agencies; academia; and industry. FDA is working closely with our federal partners, such as USDA, the Department of Homeland Security (DHS), the Homeland Security Council at the White House, the Department of State, the Central Intelligence Agency (CIA), and the Federal Bureau of Investigation (FBI), to have the best information possible and to be prepared to act as needed.

FDA has been working closely with DHS and other federal agencies to implement the Homeland Security Presidential Directives (HSPDs). The Secretary of DHS is responsible for coordinating the overall national effort to enhance the protection of the critical infrastructure and key resources of the nation, including food and agriculture defense. HSPD-7, 8, and 9 identify critical infrastructures, improve response planning, and establish a national policy to defend the agriculture and food systems against terrorist attacks, major disasters, and other emergencies.

To implement HSPD-9, the HHS and USDA Secretaries or their designees exercise key responsibilities as food sector-specific agencies. DHS serves as the coordinator of the Food and Agriculture Sector within the Government Coordination Council (GCC). Within GCC, HHS and USDA serve as co-leads for the food sector. The GCC is charged with coordinating agriculture and food defense strategies, activities, and communication across government and between the

government and private-sector partners.

The Food and Agriculture Sector is a public-private partnership that combines expertise from several federal agencies (FDA, USDA, EPA, Department of Defense (DoD), Department of Commerce, Department of the Interior, and the Department of Justice), as well as that of state, local, tribal, and territorial officials (representing agriculture, public health, and veterinary services), and the private sector (more than 100 trade associations and individual firms participate). GCC members are currently developing a three-to-five year strategic plan, an education package for new members, and a strategic roadmap to help GCC meet the needs of private sector owners and operators and maintain the security and safety of the nation's food supply.

Now, I would like to describe some examples of FDA's other food defense activities.

Vulnerability and Threat Assessments

FDA's risk-based approach to food defense helps the Agency determine where to focus its resources. As part of its efforts to anticipate threats to the food supply, FDA has conducted extensive scientific vulnerability assessments of different categories of food, determining the most serious risks of intentional contamination with different biological or chemical agents during various stages of food production and distribution.

Over the past several years, FDA has continued to refine its approach and has undertaken more in-depth vulnerability assessments of specific food commodities, using a method called CARVER+Shock. This method uses processes adapted from techniques developed by DoD for use in assessing the vulnerabilities of military targets to asymmetric threats. Results of these updated assessments are being used to develop technology interventions and mitigation strategies, identify research needs, and provide guidance to the private sector.

FDA has used the CARVER+Shock method to perform vulnerability assessments to identify what an individual or group—intent on doing damage to the food and agriculture sector—could potentially do based on the person's or group's capability, intent, and past history. The CARVER+Shock methodology was modified under Homeland Security Council leadership for use in the food and agriculture sector by FDA, USDA, and DoD, with coordination by DHS, CIA, and FBI. FDA's approach has been to seek voluntary, mutually beneficial partnerships with various segments of the food industry. We have completed such cooperative assessments with many segments of the regulated industry. FDA also has collaborated with USDA to provide assistance to the USDA Food and Nutrition Service on the use of this analytical tool on specific commodities in the school lunch program.

FDA has developed vulnerable assessment software based on the CARVER+Shock methodology and has made it available on FDA's website to help processors, manufacturers, warehouse managers, and transporters in the food industry determine the vulnerability of individual food facilities to attack.

From 2005 to 2008, FDA was part of a joint federal initiative, along with USDA, DHS, and the FBI, called the Strategic Partnership Program on Agroterrorism (SPPA). The initiative brought these federal partners together, along with state and industry volunteers. The intent of the initiative was to collect the necessary data to identify food and agriculture sector-specific vulnerabilities to develop mitigation strategies, identify research gaps and needs, and increase awareness and coordination between government and industry partners. The results from these assessments have been used to identify mitigation strategies and to focus food defense research questions. Thirty-six vulnerability assessments were conducted under the SPPA initiative in direct support of HSPD-9. As required by HSPD-9, these assessments are re-evaluated every two years.

Preventive Training Tools for Government, Industry, and Other Stakeholders

In addition to the collaboration at the federal level, FDA also is working closely with our other government and industry partners to enhance food defense. For example, earlier this year, FDA made available on our website the Food Related Emergency Exercise Boxed set (FREE-B). This is a compilation of five scenarios based on intentional and unintentional food contamination events, which was developed in collaboration with CDC and USDA. FREE-B is designed to assist government regulatory and public health agencies in assessing existing food emergency response plans, protocols, and procedures or plans that are being revised or developed. It provides stakeholders with a variety of options to test and improve their capabilities to respond to food-related human or animal health emergencies. It is predicated on strengthening existing collaborations and partnerships between and among neighboring jurisdictions, as well as with other stakeholders (private sector, law enforcement, medical community, and first responders).

On March 23, 2011, FDA launched the Food Defense Mitigation Strategies Database. This new resource is designed for companies that produce, process, store, package, distribute, and/or transport food or food ingredients. The database provides a range of preventive measures that companies may implement to better protect their facility, personnel, operations, and products.

In 2008, FDA made available an educational program called Employees FIRST (Follow, Inspect, Recognize, Secure, Tell). Food industry managers can include this material in their ongoing employee food defense training programs. Employees FIRST educates front-line food industry workers about the risk of intentional food contamination and the actions they can take to identify and reduce these risks. FIRST is available in seven languages.

In 2003, FDA issued guidance on the preventive measures the food industry may take to minimize the risk that food will be subject to tampering or other malicious, criminal, or terrorist actions. FDA issued a general guidance entitled "Food Producers, Processors, and Transporters: Food Security Preventive Measures." The guidance is designed as an aid to firms that produce, process, store, repack, relabel, distribute, or transport food or food ingredients. In addition, we have issued specific security guidance for the milk industry, for importers and filers, for retail food stores and food service establishments, and for cosmetic processors and transporters. The guidance was updated in 2008 to include a self-assessment checklist. During domestic inspections and import examinations, FDA's field personnel, as well as our state counterparts, continue to hand out and discuss these guidance documents.

In 2007, FDA (in cooperation with CDC, USDA, and state and local organizations representing food, public health, and agricultural interests) initiated the ALERT food defense awareness program. ALERT identifies five key points that industry and business can use to lower the risk of intentional food contamination along the entire farm-to-table supply chain:

- How do you **assure** supplies and ingredients are from safe and secure sources?
- How do you **look** after the security of the products and ingredients in your facility?
- What do you know about your **employees**?
- Could you provide **reports** about the security of your products, while under your control?
- What do you do and who do you notify if you have a **threat**?

We have prepared ALERT materials in several languages and offer training on the ALERT system on our website that is suitable for state, local, and industry stakeholders.

Laboratory Enhancements

An additional step in enhancing our response capability is to improve our laboratory capacity. An important component of controlling threats from deliberate foodborne contamination is the ability to rapidly test large numbers of food samples that could potentially be contaminated for a broad array of biological, chemical, and radiological agents. To increase surge capacity, FDA has worked in close collaboration with USDA's Food Safety Inspection Service to establish the Food Emergency Response Network (FERN) to include the majority of the nation's government

laboratories capable of analyzing foods for agents of concern. FERN is continuing to expand its capacity and capabilities through agreements with other federal, state, and local government laboratories. At present, the network includes 172 laboratories representing all 50 states and Puerto Rico. Participation in FERN continues to grow. FERN comprises a nationwide network of federal, state, and local government food laboratories working together to build the capacity to test the safety of thousands of food samples, thereby enhancing the ability to swiftly respond to a terrorist attack on the nation's food supply.

The FERN network has already proved to be a critical asset. It has been invaluable in providing surge capacity to handle the analysis of food samples during large-scale foodborne illness outbreaks. FERN and FDA field laboratories have also been instrumental in the rapid development of new testing methodologies required to meet the ever-changing threats to the nation's food supply. For example, early in the *Escherichia coli* O157:H7 outbreak associated with fresh spinach a few years ago, FERN and FDA analysts, working with CDC's Laboratory Response Network, approved a more rapid FERN method that substantially improved testing of spinach samples, as it allowed for the rapid detection of the pathogen at lower levels than previously possible. In response to the Deepwater Horizon oil spill in the Gulf, FDA and FERN chemistry laboratories were able to develop and implement a much more rapid analytical method for the detection of oil residues in the tissue of Gulf seafood. This new method allowed the Gulf fishing waters to be safely reopened much quicker than anticipated and continues to be used for sample analysis to ensure the safety of the seafood from that area.

To respond to high priority chemical and microbial animal feed and animal drug contamination events, FDA also recently initiated the Veterinary Laboratory Response Network (Vet-LRN) to enhance collaboration between federal and state agencies and veterinary diagnostic laboratories. This network is intended to provide additional laboratory capacity and expertise to help respond to such events. In addition, as contamination of animal feed or animal drugs could signal potential contamination in human food, this network will also contribute to efforts to protect the human food supply.

Now, I would like to mention a few of the provisions in FSMA that will provide further protections for American consumers.

FDA Food Safety Modernization Act

On January 4, 2011, President Obama signed into law FSMA. This landmark legislation gives FDA a modern mandate and toolkit to improve the safety of the country's food supply. It will provide further protections for American consumers from both intentional and unintentional contamination.

FSMA shifts our food-safety focus from reaction and response to prevention, so that prudent preventive measures will be systematically built into all parts of the food system. For the first time, FDA has a legislative mandate to require comprehensive, science-based preventive controls across the food supply. The law clarifies that people and businesses that provide food to the

public are responsible for taking the steps necessary to ensure that they've identified and controlled the hazards that could make food unsafe.

FSMA also provides significant new authorities to help ensure that food from abroad is as safe as food produced domestically. For example, it requires importers to perform verification activities to ensure imported food is safe. Although FDA will continue to carry out other measures to enhance the safety of imported food and to conduct risk-based electronic screening of all imported food shipments, this new requirement for importers to verify safety will provide an extra assurance that imported food is safe.

Specifically to address the threat of intentional contamination, among other provisions, FSMA directs FDA, in consultation with DHS and USDA, to issue regulations to require appropriate science-based mitigation strategies or measures to protect certain high-risk foods against intentional contamination. Prior to enactment of FSMA, FDA could recommend, but not require, implementation of such food defense measures.

CONCLUSION

In conclusion, due to the enhancements being made by FDA and other agencies and due to the close coordination between the federal and state food safety, public health, law enforcement, and intelligence-gathering agencies, the United States food defense system is stronger than ever before. Although we have made progress, we are continuously working to improve our ability to prevent, detect, and respond to terrorist threats and other acts of intentional contamination.

Thank you for this opportunity to discuss our food defense activities. I would be pleased to respond to any questions.

Statement of Sheryl Maddux, Deputy Director

Office of Homeland Security and Emergency Coordination

U.S. Department of Agriculture

Before the Subcommittee on

Oversight of Government Management, the Federal Workforce, and the District of Columbia

Senate Committee on Homeland Security and Governmental Affairs

September 13, 2011

Chairman Akaka, Ranking Member Johnson, and Members of the Subcommittee, good afternoon and thank you for holding this hearing today on the important topic of responding to threats against America's agriculture and food system. On the heels of the 10 year anniversary of the devastating attacks of September 11, 2001, we are reminded of the need for improved vigilance and of the importance of partnership and collaboration at all levels of government and with the private sector in order to protect our Nation's critical infrastructure.

The U.S. Department of Agriculture (USDA) considers defense of the Food and Agriculture Sector a critical component of our mission to provide leadership on food, agriculture, natural resources, and related issues based on sound public policy, the best available science, and efficient management.

No single government department or agency has sole responsibility for homeland security; rather, homeland security is a partnership effort. Significant progress in meeting homeland security goals can only be made by establishing and sustaining partnerships among all governmental levels and with those who own the critical infrastructure. The Food and Agriculture Sector is composed of complex production, processing, and delivery systems and has the capacity to feed people within and beyond the boundaries of the Nation. These food and agriculture systems, which are almost entirely under private ownership, operate in highly competitive global markets, strive to operate in harmony with the environment, and provide economic opportunities and improved quality of life for rural and urban citizens of the United States and others around the world.

The Food and Agriculture Sector is composed of complex production, processing, and delivery systems and encompasses upwards of four million assets, including some two million farms;[1] 900,000+ restaurants; 100,000+ food retail establishments; more than 166,000 registered domestic food manufacturing, processing, and holding facilities (including storage tanks and grain elevators)[2]; and approximately 252,400 registered foreign facilities. This sector is dominated by small businesses that employ the majority of the food industry workforce. The $2.1 trillion food, beverage, and consumer packaged goods industry employs 14 million workers and contributes more than $1 trillion in added value

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[1] *Louisiana Farm Reporter*, Volume 11, Number 6, March 17, 2011. Available at: http://www.nass.usda.gov/Statistics_by_State/Louisiana/Publications/Farm_Reporter/Ff031711.pdf. Accessed April 13, 2011.

[2] Food Facilities Registration Statistics — December 1, 2010. Available at: http://www.fda.gov/Food/GuidanceComplianceRegulatoryInformation/RegistrationofFoodFacilities/ucm236512.htm. Accessed April 14, 2011.

to the Nation's economy, accounting for roughly one-fifth of the Nation's economic activity.[3] The sector supply chain operates at the international level with more than 20 percent of all U.S. imports being food products.

USDA has made significant progress in its ability to defend the agriculture and food system since the events on 9/11. Dedication to advancing U.S. capabilities in the areas of surveillance, detection, response and recovery to disease, pest, or poisonous agents that occur naturally, are unintentionally introduced, or are intentionally delivered by acts of terrorism has allowed the agriculture industry to continuously provide the United States and our trade partner's confidence in the quality of our products. USDA's Food Safety and Inspection Service (FSIS), Animal and Plant Health Inspection Service (APHIS) and National Institute of Food and Agriculture (NIFA) enhance agricultural security through programs aimed at inspecting native and foreign agricultural products, conducting vulnerability assessments, and maintaining laboratory networks capable of rapidly identifying diseases and pests that could have drastic consequences on our economy. Likewise, the Agricultural Research Service (ARS) operates laboratories and funds research in the United States and abroad that seek to advance our ability to identify, remediate and even prevent harmful pathogens that threaten the food and agricultural industry.

In spite of considerable progress made to date, significant implementation challenges remain. Though the primary focus of this hearing is on activities associated with Homeland Security Presidential Directive 9 (HSPD-9), there are other policy directives and legislation that have significant impacts on the food and agriculture sector. USDA is working with the White House National Security Staff, our Federal; State, Local, Tribal, and Territorial (SLTT) counterparts; and private sector partners to identify opportunities to leverage limited resources, streamline reporting requirements, and implement a more comprehensive and strategic approach to ensure preparedness and resilience of these vital components of our Nation and our economy.

Even in the current economic environment, it is critical that the agriculture industry continue to maintain and advance its capability and capacity to protect the U.S. food supply. Threats assume many forms: from natural hazards or acts of terrorism that would inevitably cause losses in productivity that would decrease food availability for U.S. consumption, increase commodity prices, decrease exports, harm national and international confidence in U.S. products, force smaller farms/ranches out of business and/or inflict additional monetary losses on a large scale recovery effort.

Again, USDA appreciates the focus of this Subcommittee on these critical issues related to responding to threats against America's agriculture and food system.

Efforts to Implement Response and Recovery Responsibilities in HSPD-9

Significant progress has been made in implementation of response and recovery responsibilities identified in HSPD-9. Select project highlights are provided below.

Food Emergency Response Template. Under a cooperative agreement, the United States Department of Agriculture (USDA), the Department of Homeland Security (DHS), the Food and Drug Administration (FDA), and the National Association of State Departments of Agriculture (NASDA) formed a working group to develop a template. The template provides guidance for who should be involved in creating a plan, what to consider for and include in it, and also, a list of roles and

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[3] USDA Recognizes Work of Farmers and Ranchers on National Ag Day — March 15, 2011. http://www.fsa.usda.gov/FSA/mobileNewsReleases?area=newsroom&subject=landing&topic=ner&newstype=newsrel&type=detail&item=nr_20110315_rel_0120.html. Accessed April 13, 2011.

responsibilities that the planner needs to consider. The draft template has been completed and has been tested in three States.

National School Lunch Program (NSLP) Protective Initiatives. Higher education and training programs support the defense of U.S. agriculture and food systems by providing proper knowledge to those charged with responding to pest or disease outbreaks, food contamination incidents, or other disasters affecting the sector. The Food Nutrition Service developed and disseminated a technical assistance tool for National School Lunch Program operators, Biosecurity Checklist for School Foodservice Programs: Developing a Biosecurity Management Plan. The publication was disseminated to 22,000 School Food Authorities (SFAs). Supporting materials, including a video/DVD and an interactive version of the checklist on CD-ROM, were later developed to complement the manual and to help recipient agencies develop their food defense plans, a tool that can help protect food from intentional contamination.

Food Defense Plans. The coordinated development of Federal, State, and local response capabilities supports the defense of U.S. agriculture and food systems by minimizing the potential impact of a disease outbreak, terrorist attack, or other disaster affecting the sector. The development of food defense plans by industry and other food production facilities, while voluntary, is considered an important tool in helping to prevent the intentional contamination of food. The Food Safety and Inspection Service has been working cooperatively with industry since 2004 to provide guidance and encourage the adoption of food defense plans. In addition, the Agricultural Marketing Service (AMS) is requiring that vendors from which AMS purchases products for the National School Lunch Program (NSLP) and other Federal nutrition assistance programs have a food defense plan in place and in many instances is requiring vendors to pass an AMS food defense audit of their facilities. During these audits, food defense plans, operating conditions, and practices are evaluated, and deficiencies are identified. The audit program and vendor plans are based on FSIS and FDA Food Defense Guidance. AMS routinely reviews its procurement documents to ensure that they are current with regulatory guidance and address food defense issues associated with the food products purchased by AMS.

Collaboration with FEMA for Agricultural Debris Disposal. As part of Hurricane Katrina Lessons Learned, USDA's Farm Service Agency developed a quick-reference internal document to describe debris authorities for FSA, NRCS, and APHIS. During a national emergency, the disposal of animal carcasses resulting from disease is the responsibility of APHIS under Emergency Support Function (ESF) #11, with technical input on soil properties from NRCS. There continues to be work across federal departments to better understand roles and responsibilities, as well as authorities for debris disposal.

Emergency Support Function (ESF) #11. APHIS the lead agency for ESF #11. On a national and regional level, ESF #11 is engaged with other Federal agencies and States in the development, revision, and review of all-hazards response planning. ESF#11 participates in catastrophic planning for events beyond the normal response capabilities of State and local governments. APHIS fulfills this commitment by having an ESF #11 National Coordinator, two Regional Emergency Response Program Managers, and an ESF#11 Coordinator in each of the ten Federal Emergency Management Agency (FEMA) Regions. The ESF#11 Coordinators work on a daily basis with FEMA, other Federal Agencies, and the States. ESF#11 participates extensively in regional and State all-hazards planning efforts. There have been annual high level coordination meetings between APHIS, the Food and Nutrition Service (FNS), FSIS, and the Department of the Interior (DOI) and other relevant agencies. From 2009 to present, ESF#11 has worked with key stakeholders to conduct training for hundreds of individuals involved in the interagency process with FEMA at the national and State level. These individuals have been essential in the response to natural disasters, and are critical players in any extensive response to all-hazard events.

During 2009, ESF #11 was activated to support responses for the winter storms in the northeast, the severe flooding in Washington State, and flooding in North Dakota. In 2010, ESF #11 was activated to support the earthquake in Haiti, spring flooding in North Dakota, severe flooding in Massachusetts, Hurricane Alex, and Hurricane Earl. In 2011, ESF #11 was activated for the Arizona floods, the severe storms in Connecticut, the earthquake/Pacific Tsunami in Japan, severe flooding in Louisiana, severe flooding in North Dakota and South Dakota, severe flooding and tornadoes in Missouri, and Hurricane Irene. Prior to an incident, ESF#11 coordinators are in contact with primary and support agencies providing situational awareness of possible or actual all-hazards disaster events at the Federal, State, and local levels. During and after an incident, ESF#11 primary and support agencies provide and receive situational reports, spot reports, briefing reports and other information and are also encouraged to participate in hot-wash/after action reports to the event.

APHIS continues to assess and revise as necessary the ESF #11 concept of operations plan based on lessons learned from real world events and exercises. This is done in consultation with other federal partners and state, local, and tribal organizations.

National Veterinary Stockpile (NVS). USDA APHIS established the NVS in 2004 in accordance with HSPD-9. The NVS will contain critical veterinary material for responding to the worst animal diseases within 24 hours. APHIS has two primary goals for the NVS: (1) Deploy within 24 hours countermeasures against the most damaging animal diseases including Highly Pathogenic Avian Influenza, Foot and Mouth Disease, Rift Valley Fever, Exotic Newcastle Disease, and Classical Swine Fever; and (2) Assist States, Tribes, and territories plan, train, and exercise for the rapid acquisition, receipt, processing, and distribution of NVS countermeasures during an event.

The NVS employs a full time outreach staff member and an experienced exercise contract team. The NVS has succeeded in deploying countermeasures within its 24-hour goal for all responses. Further, it reviews lessons learned from all exercises and deployments to continuously improve State /Tribal NVS plans, State Planning Templates, and the NVS Deployment Plan.

Testing the National Veterinary Stockpile's (NVS) Avian Influenza (AI) Vaccine: Agricultural Research Service (ARS) is continuing its AI vaccine discovery research and has just completed testing the current H5 AI vaccine in the NVS and found it to be efficacious against the currently circulating Asian H5N1. ARS is continuing to test new vaccine technologies and AI vaccines in the NVS against recent isolates, especially African-Asian H5N1 isolates. The project is ongoing.

National Plant Disease Recovery System (NPDRS). ARS worked with APHIS and other related USDA agencies (NRCS, NIFA, AMS, GIPSA, and ERS) and external entities (DHS, EPA, universities, and the private sector) to establish the NPDRS. The NPDRS identifies governmental and private infrastructure necessary to implement an effective recovery plan for high consequence disease/crop outbreaks; identifies technologies required for recovery from specific disease/crop outbreaks; generates a prioritized list of research needs; and works with Federal agencies and other stakeholders to obtain necessary resources. The NPDRS Steering Committee (USDA, DHS, and EPA) will be a longstanding committee to oversee the development of these recovery plans and coordinate the activities of Federal agencies with authority, responsibility, and expertise to create recovery systems for specific crop/diseases. In fiscal year 2011, the NPDRS coordinated with Federal and State scientists concerned with citrus, small grains, soybean and corn to identify detection needs for pests and diseases, monitoring needs, protectants status, and resistant germplasm availability. Work continues across federal departments and with outside stakeholders to understand emerging disease threats.

Role and Efforts to Enhance National Surveillance and Detection Capabilities

Since the creation of the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 and HSPD-9 in 2004, the USDA has made considerable progress to implement and/or enhance national surveillance and detection capabilities, including coordination and collaboration with Federal, State, Local, Tribal, and Territorial (SLTT); and private sector partners. A summary of progress to date is provided below, organized by surveillance and detection (laboratory networks). This is not a comprehensive listing of activities, but rather serves to highlight those efforts that involve coordination and collaboration with our Federal, SLTT, and private sector partners and/or provide a foundation for improved coordination and collaboration.

Surveillance

USDA is currently participating in a Sub-Interagency Policy Committee led by the National Security Staff to develop a National Strategy for Biosurveillance to achieve the United States Government's (USG) biosurveillance goals: decision making informed by early detection and warning of a health incident of potential national significance and ongoing actionable and timely situational awareness. In addition, USDA formed a One Health Working Group to augment the respective missions of participating USDA agencies and offices. This Working Group identifies and pursues opportunities to improve the efficiency and outcomes of USDA's programs for public health, animal and plant health, and environmental health.

In addition, USDA agencies continue to develop and implement monitoring and surveillance programs in collaboration with Federal, SLTT, and private sector partners. Select programs include the following:

National Biosurveillance Integration System (NBIS). The system enables early detection and increased situational awareness to reduce the intensity and duration of a biological event by monitoring information sources in near real-time to detect emerging threats. USDA actively participates in the NBIS Interagency Workgroup (NIWG) to support implementation of NBIS. In addition, FSIS has a full time liaison working at DHS-NBIS, while APHIS participates virtually. APHIS routinely provides subject matter expertise and information sharing/ animal health situational awareness on domestic and international issues

Biological Indication and Warning Analysis Community (BIWAC). To facilitate operational validation of the data collected in Project ARGUS, the BIWAC was created. Project ARGUS is an open source data collection initiative designed to implement global foreign biological event detection and tracking capabilities. It plays a significant role in meeting national needs in support of the National Biosurveillance Integration Mission. Membership in the BIWAC includes the Centers for Disease Control and Prevention's (CDC) Global Disease Detection team; USDA's Centers for Epidemiology and Animal Health; DHS' National Biosurveillance Integration Center; the Armed Forces Medical Intelligence Center; the Defense Threat Reduction Agency; the U.S. Strategic Command Center for Combating Weapons of Mass Destruction; and other intelligence community organizations. USDA APHIS has served as the Chair for the BIWAC Steering Committee since January 2010.

Animal Disease Traceability (ADT). In February 2010, Secretary Vilsack announced the Animal Disease Traceability program, a new approach to disease surveillance developed through input from a State-Tribal-Federal working group, Tribal consultations, and discussions with producers and industry. Animal disease traceability, or knowing where diseased and at-risk animals are, where they've been, and when, is very important to make sure there can be a rapid response when animal disease events take place. An efficient and accurate animal disease traceability system helps reduce the number of animals involved in an investigation, reduces the time needed to respond, and decreases the cost to producers and the government. ADT is designed to recoup and capitalize as much as possible on previous investments in the

National Animal Identification System (NAIS), while reducing burden on the industry. Key principles to the new animal disease traceability framework will:

- Only apply to animals moved interstate;
- Be administered by the States and Tribal Nations to provide more flexibility;
- Encourage the use of low-cost technology; and
- Be implemented transparently through Federal regulations and the full rulemaking process.

On August 11, 2011, USDA APHIS published a proposed rule on animal disease traceability for livestock moved interstate that would establish minimum national official identification and documentation requirements. The rule has two primary requirements. First, animals moved interstate would have to be officially identified. Second, animals moved interstate must be accompanied by an interstate certificate of veterinary inspection or other movement document. The comment period on the proposed rule closes on November 9, 2011. The final rule is slated for publication in the *Federal Register* in 2012. Information systems developed through NAIS have been modified to support ADT.

Pathogen Reduction Enforcement Program. The Pathogen Reduction Enforcement Program schedules tests, tracks food samples, and generates a series of reports concerning food testing eligibility and the status of food sample testing results. It collects and stores food manufacturing establishment addresses and product information, as well as the establishment's performance in previous food safety tests. It uses this information to schedule and request the collection of food samples for testing. These tests results are used to alert agency personnel and the industry of contaminations, so an appropriate response can be issued. The Pathogen Reduction Enforcement Program is also used for risk assessment and decision support purposes, improving early detection of problem products, enabling active food safety surveillance, and evaluating potential threats to the U.S. food supply.

Detection

Laboratory capability and capacity are essential components of food and agriculture defense initiatives. Within the Federal Government, laboratory networks are coordinated through the Integrated Consortium of Laboratory Networks (ICLN). The ICLN was established by a Memorandum of Agreement signed in June 2005. Signatory departments and agencies to this agreement include USDA, Department of Commerce, Department of Energy, Department of Health and Human Services (HHS), DHS, DOI, Department of Justice, Department of State, and the Environmental Protection Agency. Three of the laboratory networks that comprise the ICLN support the Food and Agriculture Sector: the Food Emergency Response Network (FERN), the National Animal Health Laboratory Network (NAHLN), and the National Plant Diagnostic Network (NPDN).

Food Emergency Response Network (FERN). Co-sponsored by USDA and the Food and Drug Administration (FDA), FERN is a robust national network of food regulatory laboratories with a proven ability to respond to food emergencies by providing vital laboratory capabilities and capacities to large-scale food events. It has the technical expertise to develop, validate, disseminate, and make use of rapid screening techniques and is often required to meet the challenges of outbreaks of novel contaminants affecting previously uninvolved foods. Significant progress has been made in implementing the network's structure and operations. FERN integrates the Nation's food-testing laboratories at the local, State, and Federal levels into a network that is able to respond to emergencies involving biological, chemical, or radiological contamination of food. The FERN structure is organized to ensure Federal and State interagency participation and cooperation in the formation, development, and operation of the network. Currently, FERN consists of 172 laboratory members from federal, state, and local agencies, representing the public health, agriculture, veterinary diagnostic, and environmental disciplines. FERN plays a critical role in food defense by integrating these food-testing laboratories into a network that is able to detect, identify, respond to, and provide recovery from emergencies involving biological, chemical, or radiological contamination of food. The FERN focuses on preparedness through awareness, surveillance,

prevention, and capacity building and provides response and recovery efforts through organized large-scale surge capacity. FERN laboratories have been activated in response to multiple outbreaks and public health events including:

- *E. coli O*157:H7 in Spinach Outbreak (2006)
- Melamine in Pet Food (2007)
- *Salmonella* Saintpaul in peppers (2008)
- *Salmonella* Typhimurium in peanut butter (2009)
- Polyaromatic hydrocarbons in seafood (2010)

National Animal Health Laboratory Network (NAHLN). USDA established the NAHLN as part of a national strategy to coordinate and network the diagnostic testing capacities of the Federal veterinary diagnostic laboratories with the extensive infrastructure (facilities, professional expertise, and support) of State and university veterinary diagnostic laboratories. This network enhances the Nation's early detection of, response to, and recovery from animal health emergencies, including bioterrorist events, newly emerging diseases, and FAD agents that threaten the Nation's food supply and public health. In 2002, USDA/APHIS and USDA's Cooperative State Research, Education and Extension Service (CSREES), now NIFA, initiated the network by entering into cooperative agreements with 12 State and university veterinary diagnostic laboratories. APHIS has since contracted with additional State and university diagnostic laboratories to assist with testing and surveillance. These contracts are with 54 State/university laboratories; the U.S. Department of the Interior (DOI) laboratory in Madison, Wisconsin; USDA/FSIS laboratory in Athens, Georgia; and the National Veterinary Services Laboratories (NVSL) at the Ames, Iowa, and Plum Island Animal Disease Center (PIADC) (New York) campuses, for a total of 58 laboratories in 43 States. In FY 2010, 28 of these laboratories received cooperative agreement funding through NIFA. Key elements and accomplishments of NAHLN include:

- Increased and more flexible capacity for laboratory support of routine and emergency animal disease diagnosis, including bioterrorism events;
- Standardized, rapid diagnostic techniques used at state, regional, and national levels;
- Secure communication, alert, and reporting systems;
- Modern equipment and experienced personnel;
- National training, proficiency testing, and quality assurance;
- Upgraded facilities that meet biocontainment and physical security requirements; and
- Regional and national animal health emergency training exercises (scenario tests) to test and evaluate the communication and reporting protocols of the network.

National Plant Diagnostic Network (NPDN). NPDN was established in 2002 by legislative mandate in response to the need to enhance agricultural security through protection of the health and productivity of plants in agricultural and natural ecosystems in the United States. With support from the NIFA Food and Agricultural Defense Initiative, the specific purpose of the NPDN is to provide a nationwide network of public agricultural institutions with a cohesive distribution system to quickly detect high-consequence pests and pathogens that have been introduced into agricultural and natural ecosystems, identify them, and immediately report them to appropriate responders and decision-makers. To accomplish this mission, NIFA and NPDN have invested in plant diagnostic laboratory infrastructure and training, developed an extensive network of first detectors through education and outreach, and enhanced communication among the agencies and stakeholders responsible for responding to and mitigating new outbreaks. A summary of NPDN accomplishments include the following:

- National Repository established for records of endemic and emerging pests and diseases;
- Secure communications protocols established among NPDN labs and regulatory agencies;
- Diagnostic infrastructure supporting plant diagnostics in the U.S. greatly enhanced for both capability and capacity. Diagnosticians are well trained in modern diagnostic technologies and molecular protocols;

- NPDN labs routinely support national, state, and local response to disease and pest outbreaks, providing surge capacity for over 1,000,000 high consequence samples;
- NPDN has trained and registered 11,480 First Detectors nationwide;
- NPDN has protected jobs in agriculture by verifying that traded agricultural products are free of quarantine pests and diseases, thus ensuring that export and domestic markets remain open; and
- NPDN serves as a model for efficiency, communication and integration across jurisdictions. In 2010, the NPDN was acknowledged with the NIFA Partnership Award for Innovative Program Models.

National Bio and Agro-Defense Facility (NBAF). The Plum Island Animal Disease Center (PIADC) is our nation's primary facility to conduct livestock disease research. However, PIADC is at the end of its life-cycle, is too small to accommodate necessary research, and does not have biosafety level-4 capabilities. The NBAF, a state-of-the-art biosafety level 3 & 4 facility currently under design to be built near Kansas State University, will enable the U.S. to conduct comprehensive research, develop vaccines and anti-virals, and provide enhanced diagnostic capabilities to protect our country from numerous foreign animal and emerging diseases. Research and development at NBAF will additionally address multiple threats/vulnerabilities related to bio- and agro-attacks and improve our understanding of potential agro-terrorism such as employing foreign animal and zoonotic disease pathogens against U.S. targets.

The NBAF would be one of many high containment laboratories which are safely run in the United States every day (e.g., CDC laboratories in Atlanta, GA; and Department of Defense Labs in Fort Detrick, MD.) The rigorous construction requirements and operational procedures in place today have successfully protected the local environments around Federal high-biocontainment facilities on the U.S. mainland for decades, and modern technologies only improve that protective capability for future facilities like the proposed NBAF.

As a future tenant at NBAF, USDA is providing technical expertise to DHS on the design and construction to ensure that the facility can safely and efficiently accommodate USDA's research, diagnostic and training needs; protect the domestic livestock industry and markets; properly implement all recommendations from the risk assessment; and meet all biosafety and biosecurity requirements.

The United States needs to be on the frontline of livestock animal health research and defend America against foreign animal, emerging, and zoonotic diseases. NBAF will be a modern research facility that will help to protect the United States from threats to our animal agriculture, food supply, and public health.

Efforts to Coordinate and Collaborate with Federal Partners, State, Tribal, and Local Officials, and the Private Sector to Ensure an Effective Response to an Agriculture or Food Incident including Information Sharing, Exercises, Education, and Training

In response to HSPD-7and in close collaboration with FDA and DHS, USDA helped to establish the Food and Agriculture Sector Coordinating Councils in 2004. The coordinating councils are comprised of a Government Coordinating Council (GCC) and a Sector Coordinating Council (SCC) representing private industry. Today there are approximately 59 members of the Food and Agriculture Sector GCC representing 22 agencies/organizations, including Federal and SLTT associations and other entities. The Food and Agriculture SCC has 77 members representing 51 entities/organizations, including trade associations, owners and operators, and others. The councils host quarterly joint meetings that provide a public-private forum for effective coordination of agriculture security and food defense strategies and activities, policy, and communications across the sector to support the Nation's homeland security mission. They provide a venue to mutually plan, implement, and execute sector-wide security programs,

and procedures; as well as to exchange information and assess progress in defending the Nation's food and agriculture critical infrastructure. They provide a central forum for introducing new initiatives for mutual engagement, evaluation and implementation, issue resolution, and education. Joint initiatives include identifying and prioritizing items that need public-private input, coordination, implementation, and communication; coordinating and communicating issues to all members; and identifying needs/gaps in research, and best practices/standards.

Additional examples of coordination and collaboration for information sharing, exercises, education, and training are provided below.

Information Sharing

The Food and Agriculture Sector has designated Homeland Security Information Network (HSIN) FA and FoodSHIELD as its two chief information-sharing platforms to support its public and private sector partners. FoodSHIELD is based on the CoreSHIELD platform, which helps create community, increases collaboration, and facilitates communication among thousands of public and private entities involved in protecting and defending the food supply of the United States. The intent is to clarify, improve, and communicate the overall process to ensure dissemination of the right information to the right people in private sector institutions in a timely manner.

HSIN-FA provides a secure, unclassified, and common Web-based communications platform to serve as the primary information-sharing and collaboration system for sharing Sensitive but Unclassified information within the FA Sector. DHS provides the procedures, content, and tools needed to enable security partners to share the vital information needed to manage security and risk to their critical infrastructure, respond to events, and enhance resilience. Industry members are piloting access to FoodSHIELD and more than 6,000 Federal, State, and local regulators, laboratory staff, military personnel, and academics are active members of FoodSHIELD and its associated portals. As of August 2011, more than 1,500 accounts have been created to expand access to HSIN-FA based on FoodSHIELD membership.

Exercises

USDA, FDA and DHS conducted a series of food service, food defense information sharing exercises with state, local, tribal and territorial and private sector partners. The purpose of these exercises was to focus on sharing of classified information across the federal family and with industry. After action reports for the exercise and workshop were distributed to exercise participants, presented at the March 2011 Joint Quarterly Meeting of the Food and Agriculture Sector, and are posted to the HSIN portal for access by approved Critical Sector subscribers.

In addition to sector-sponsored exercises, USDA agencies conduct a number of exercises and workshops in support of food and agriculture defense efforts that involve SLTT and private sector partners. Representative examples include the following:

- **Southern Agriculture and Animal Disaster Response Alliance (SAADRA) National Veterinary Stockpile 2010 Logistics Exercise.** On April 28 and 30, 2010, SAADRA and USDA/APHIS conducted 1-day logistics exercises in Montgomery, Alabama; Pearl, Mississippi; and Baton Rouge, Louisiana. The purpose was to test State and Federal request procedures for the NVS, deployment and response plans, and logistics response capabilities on the basis of a simulated rift valley fever (RVF) outbreak. During each exercise, the NVS deployed countermeasures (including supplies, equipment, and simulated vaccine) to each location, and the States conducted logistics warehouse and inventory management operations. Approximately 180

participants from SAADRA, private industry, and APHIS regional offices attended the exercise. Additional information is available at: http://nvs.aphis.usda.gov.

- **FSIS Exercise Program**. FSIS regularly conducts food defense exercises at the Department, headquarters and field level to test preparedness and response procedures (i.e., how program offices would manage an emergency and how FSIS functions in an ICS structure, including product recalls and communication issues). Summary Reports and After Action Reports from the exercises are prepared and shared with stakeholders, including Federal, State, and local government agencies, tribal nations, industry, and consumer groups. FSIS also regularly conducts exercises to test it readiness and preparedness including Continuity of Operations E Exercises.

Education and Training

USDA agencies conduct a variety of education, training, and outreach programs targeted to and/or conducted in collaboration with Federal, SLTT, and private sector partners. Select examples include the following:

- **Small/Very Small Plant Outreach. FSIS conducts annual survey of its regulated establishments to determine whether or not they have food defense plans. Food defense plans are an important tool in helping industry to ensure that the food they make is not intentional contaminated.** Results from FSIS' 2009 FSIS food defense plan survey found nearly 100 percent adoption of food defense plans by large establishments, and a rate of above 70 percent adoption by small plants. However, less than half of the approximately 2,600 very small establishments surveyed in 2009 had food defense plans. Therefore, FSIS expanded outreach in 2010, with particular emphasis on small and very small establishments. FSIS highlighted food defense issues at exhibitions, conventions, and educational seminars and worked with State Hazard Analysis and Critical Control Point Contacts and Coordinators and trade associations representing very small establishments to distribute food defense information, guidance, and educational materials. Language was identified as a barrier to reaching some small and very small establishments. FSIS had its *Guide to Developing a Food Defense Plan for Meat and Poultry Slaughter and Processing Plants* translated into Spanish, Mandarin Chinese, Korean, and Vietnamese and posted on the FSIS Web site. FSIS also had its *Guide to Developing a Food Defense Plan for Warehouse and Distribution Centers* translated into Spanish and Mandarin Chinese and posted on the FSIS Web site. The General Food Defense Plan was also translated into Spanish, Mandarin Chinese, Vietnamese, and Korean and is available on the FSIS Web site. FSIS also mailed copies of the General Food Defense Plan to all establishments that lacked a written food defense plan. The 2010 Food Defense Plan Survey determined that, as a result of the various outreach efforts, 82 percent of small establishments and 64 percent of very small establishments have a functional food defense plan—up from 2009 rates of 72 percent and 48 percent, respectively. The adoption and implementation of functional food defense plans enhance protection of the food supply and public health. Preliminary results from the 2011 survey indicate that the trend in increasing adoption by industry of food defense plans continues.
- **Department of Education Readiness and Emergency Management for Schools Grantee Meeting**. The USDA/Food and Nutrition Service (FNS) reached about 150 attendees at the July 2010 meeting for Readiness and Emergency Management for School (REMS) grantees. The U.S. Department of Education Office of Safe and Drug-Free Schools began administering the REMS discretionary grant program in 2003 to help school districts develop comprehensive plans for any emergency or crisis. Developing a food defense management plan is one requirement for those receiving a REMS grant. FNS provided information on the importance of food defense for schools and on the resources and technical assistance, such as the National School Lunch Program (NSLP) Tabletop Exercise Toolkit and a template for developing a school food defense plan, that FNS can or soon will make available to schools.

- **Extension Disaster Education Network**. EDEN is a collaborative, multistate effort by Extension Services across the country to improve the delivery of services to citizens affected by disasters, including agricultural disasters. The network has a wealth of national and State-based disaster education preparedness, response, recovery, and mitigation resources available at: http://www.eden.lsu.edu and http://www.extension.org/disasters. These enable locally trusted extension educators to increase their impact before, during, and after a crisis in all 50 States and many U.S. territories. EDEN has the ability to conduct internal communications behind the Louisiana State University firewall at: https://eden4.lsuagcenter.com and via list-serve. In addition to closed-source telephone, e-mail, and intranet methods, USDA/NIFA can instantly publish open-source communications with the cooperative extension system at https://blogs.extension.org/edenotes and http://www.facebook.com/edenfb.
- **Extension Disaster Education Network Strengthening Community Agrosecurity Planning Workshops.** The objectives of the workshops are to enable community partners to 1): build capacity to handle agricultural issues during an emergency or disaster; 2) improve networking among stakeholders who can plan for and respond to emergencies; and 3) develop community agrosecurity planning teams to establish or enhance agrosecurity components within existing local emergency operations plans. A total of 19 EDEN Strengthening Community Agrosecurity Planning (S-CAP) workshops have already been conducted in 16 States. A Train-the-Trainer program enables States to continue training to maximize dissemination of the program. To date, 12 States have trained their own trainers. Additional information can be found at: http://eden.lsu.edu/s-cap.

USDA also works closely with our colleagues in the Federal Bureau of Investigation (FBI) to conduct outreach and training for law enforcement, public health, emergency first responders, and security personnel responsible for responding to situations involving potential chemical, biological, and radiological threats. This training includes guidance and recommendations for performing joint criminal and epidemiological investigations to ensure that tailored tactics, techniques, and procedures are made available, including access to the tools needed to respond to these threats. It also promotes the use of simulation among Federal, SLTT, and private sector partners to exercise capabilities, refine operational concepts, and strengthen relationships across and ensure that law enforcement, public health, emergency first responder, and agricultural investigations are coordinated. Recent examples include a workshop in Napa Valley, California (June 2010) with 82 attendees and another in Des Moines, Iowa (August 2010) with 77 attendees. The workshops included representatives from local law enforcement; public health and agriculture representatives from SLTT government entities; private sector partners; and Federal partners from the USDA, FDA, FBI, and DHS. The workshops develop the investigative, intelligence, and coordination efforts conducted by the FBI Joint Terrorism Task Forces in local field offices by providing Federal, State, and local law enforcement with the opportunity to interact and cross-train on topics of basic food and agriculture security awareness.

Response to Findings and Recommendations of GAO Report: *Homeland Security: Actions Needed to Improve Response to Potential Terrorist Attacks and Natural Disasters Affecting Food and Agriculture*

The Government Accountability Office (GAO) recently submitted a Draft Report titled *Homeland Security: Actions Needed to Improve Response to Potential Terrorist Attacks and Natural Disasters Affecting Food and Agriculture* (GAO-11-652) to the USDA.

To ensure the most effective use of resources, GAO recommended that the Secretaries of Agriculture and Health and Human Services jointly determine if there are opportunities, where appropriate, for the National Veterinary Stockpile (NVS) to leverage Strategic National Stockpile (SNS) mechanisms or

infrastructure as directed by HSPD-9. If such opportunities exist, the two Agencies should formally agree upon a process for the NVS to use the identified mechanisms and infrastructure.

The CDC's SNS and APHIS' NVS have collaborated since the NVS began operations in 2006. The SNS has provided technical assistance and shared lessons learned, planning documents, and numerous guidance documents that were subsequently utilized by the NVS. APHIS and CDC will continue to explore opportunities for which the NVS may leverage SPS mechanisms or infrastructure as directed in HSPD-9.

To improve USDA's performance as ESF-11 coordinator and to address issues experienced by key parties, such as pet sheltering, GAO recommended that the Secretary of Agriculture develop a process for ensuring that: (1) following all ESF-11 activations, after-action reports (AAR) are consistently completed and shared with key parties involved in each activation; (2) the perspectives of key parties are incorporated in these reports; (3) any identified gaps and/or challenges are addressed through corrective actions; and (4) the completed after-action reports are used to provide a complete, accurate, and consistent count of ESF-11 activations over time, in turn producing sufficiently reliable data on ESF-11 activations.

Since 2008, the APHIS ESF-11 coordinator has developed a consistent approach for developing AAR. The AARs are modeled after FEMA's AARs, which include identifying successes and areas needing improvement. These ESF #11 AARs are posted on the ESF #11 Web site, http://www.aphis.usda.gov/emergency_response/esf_11/esf11_resources.shtml, and are available for key parties to review. In the future, APHIS plans to e-mail the AARs directly to ESF #11 stakeholders. The GAO report also recommended development and implementation of a documented, systematic process to track research gaps identified in the NPDRS recovery plans and monitor progress in filling these gaps, as well as development of a department-wide strategy for implementing HSPD-9 responsibilities that includes an overarching framework for setting priorities, as well as allocating resources.

USDA concurs with both of these recommendations and will work to implement them. With regard to the development of a department-wide strategy, USDA feels it is important to look more broadly than HSPD-9 and focus on strategic implementation of all homeland security related policies and legislation. This will allow for a more strategic and efficient management approach to ensure improved preparedness and resilience of the food and agriculture sector and supporting equities, programs, and resources.

Efforts to Implement GAO's Recommendations from the Report on the Veterinarian Workforce (GAO-09-178)

Veterinarians are essential for controlling zoonotic diseases – which can spread between animals and humans – such as avian influenza. Most Federal veterinarians work in USDA and other Federal agencies such as the Departments of Defense, and HHS. GAO found that given the needs, there is a growing national shortage of veterinarians. GAO assessed the sufficiency of the Federal veterinarian workforce for routine activities, identified veterinarian workforce needs during a catastrophic event, and the challenges faced by the federal government and states during four recent zoonotic outbreaks. USDA's implementations of GAO recommendations are summarized below.

To help ensure the Federal veterinarian workforce is sufficient to meet the critical responsibilities it carries out on a routine basis, GAO recommended that the Secretary of Agriculture direct FSIS to periodically assess whether its level of inspection resources dedicated to food safety and humane slaughter activities is sufficient. As part of the budget formulation process, FSIS annually assesses inspection and veterinary resource needs to meet the statutory mandates for food safety and the humane handling of livestock. FSIS is continually taking steps to enhance veterinary and inspection capacities to

best allocate its resources to protect public health. In addition, as part of routine operations, FSIS managers continually assess inspection resource requirements to determine the number of Public Health Veterinarian (PHV) positions needed in specific establishments, primarily by considering the geographic location or proximity of other Federal establishments, the size of the establishment, the production volume of plant operations (which determines the number of on-line inspection personnel), and the number of approved operational shifts. The results of these assessments are documented using the Resource Information System—a computer database that tracks resource data and builds inspection assignments. Although FSIS regularly assesses inspection resources as part of the budget formulation process and in the course of regular operations, in response to GAO's recommendation, in 2009, FSIS began conducting periodic assessments of inspection resources, including Public Health Veterinarian positions. Results of these assessments are provided in the "Demand for Service" report. Since December 2008, the vacancy rate has decreased nearly eight percent, from 15.6 to 7.7 percent.

GAO also recommended that the Secretary of Agriculture conduct a departmental assessment of USDA's veterinarian workforce—based, for example, on workforce assessments by its component agencies—to identify current and future workforce needs (including training and employee development) and Department-wide solutions to problems shared by its agencies. The recommendation indicated that results should be forwarded to the Director of the Office of Personnel Management (OPM) when complete.

Departmental Administration Office of Human Capital Management, through the USDA Human Resources Leadership Council, completed a USDA-wide Veterinary Medical Officer (VMO) workforce plan, building on agency assessments and providing analysis to benefit all affected agencies in developing long-term strategies for addressing workforce needs. To help the veterinarian workforce continue essential functions during a pandemic, GAO recommended that the Secretaries of Agriculture, Defense, and HHS ensure that their component agencies that employ veterinarians complete pandemic plans that contain the necessary elements put forth in the Department of Homeland Security's (DHS) continuity of operations pandemic guidance, including periodically testing, training, and exercising plans. APHIS finalized a revised Pandemic Plan based upon DHS's Pandemic Plan checklist in 2009.

To improve estimates of the veterinarian workforce needed to respond to a large-FMD outbreak, GAO recommended that the Secretary of Agriculture detail in a contingency response plan how a response using vaccines would be implemented. USDA issued contingency plans for use of the FMD vaccine. In addition, APHIS' Foreign Animal Disease Preparedness and Response Plan (FAD-PreP) includes a decision-making process that would lead to the use of vaccine as an aid in the control and eradication of FMD in North America. USDA and DHS continue to actively support development of new vaccine technologies that do not require expensive, high-containment production facilities and can be produced safely in the United States.

Mr. Chairman, thank you for the opportunity to testify today. I think we can all agree on the importance of having a strong, coordinated system in place to prepare for and respond to threats to our food and agriculture infrastructure. I assure you that USDA stands ready to work with our partners in this effort to continue to strengthen our protection of these critical resources. That concludes my statement. I would be happy to answer any questions.

Post-Hearing Question for the Record
Submitted to Dr. Doug Meckes
From Senator Daniel K. Akaka

"Agro-Defense: Responding to Threats Against America's Food and Agriculture System"
September 13, 2011

1. In its report, entitled *Homeland Security: Actions Needed to Improve Response to Potential Terrorist attacks and Natural Disasters Affecting Food and Agriculture* (GAO-11-652), the Government Accountability Office (GAO) identified instances where the roles and responsibilities, as well as the available types of support, were unclear with respect to agriculturally related consequences of disasters. What actions has the Department taken to ensure its responsibilities are clear in the event of a disaster?

   Response: The Department of Homeland Security's (DHS) role and responsibilities are clear in the event of a disaster. DHS's Office of Health Affairs (OHA) works with our colleagues at the U.S. Department of Agriculture (USDA) to identify the agriculture consequences of disasters and to clarify roles and responsibilities for management of those incidents. As part of that process, the USDA's Animal and Plant Health Inspection Service (APHIS) sponsored the 2011 Federal-to-Federal Request for Assistance (Fed-to-Fed Request for Assistance) Exercise Series, which included three workshops and a tabletop exercise. The Exercise Series sought to develop and validate plans, procedures, and agreements necessary to request Federal assistance during a non-Stafford Act animal or plant disease outbreak response.

   Ultimately, effective response requires a coordinated Federal effort and national engagement. To that end, the Science and Technology Directorate (S&T) Agricultural Defense Branch is launching a new project focused on decontamination, disposal and depopulation (3D) in the face of a large scale animal disease or mortality event. This project will focus on new and enhanced technologies, guidance and concept of operations (CONOPS) for rapid depopulation of infected livestock herds, disposal of the remains, and decontamination of infected premises and mitigate impact on the livestock sector. This program is a multiagency effort (DHS, USDA, the U.S. Environmental Protection Agency) to develop new and enhanced methodologies and equipment for high-capacity mass livestock mortality depopulation and disposal; decision support tools for Foreign Animal Disease mass livestock mortality disposal; strategies for depopulation; best management practices for cleaning and disinfection of animal facilities. The 3D project will develop the tools, technologies and information necessary to support the most efficient, effective and humane policies possible in an emergency response setting.

   In another instance, APHIS and the U.S. Customs and Border Protection (CBP) within DHS convened a Joint Agency Task Force to evaluate the effectiveness of our agriculture programs and develop recommendations for improvements in areas identified by

stakeholders and Government oversight agencies. The Joint Agency Task Force created a series of implementation action plans, thirteen in all, one of which was created in response to concerns surrounding joint response to plant pest and foreign animal disease outbreaks and immediate response. As a result of that effort, CBP and APHIS established a Joint Agency Emergency Response Plan that is in the process of agency head review and will provide descriptions of the incidents, responsibilities, and recommended response by each agency in the event process for agriculture-related emergency events at Ports of Entry (POEs) and for domestic agriculture emergency response needs

These activities are but a few of the areas where actions have been taken to ensure the respective Department responsibilities are clear in the event of a disaster.

2. According to the same GAO report (GAO-11-652), the Department uses an online forum to monitor DHS's Homeland Security Presidential Directive 9 (HSPD-9) progress. Please discuss how the Department ensures that its components assigned HSPD-9 implementation responsibilities are achieving the desired results?

Response: Within DHS, the Office of Health Affairs (OHA) has been charged to "coordinate the Department's responsibilities for the implementation of HSPD-9" and to provide oversight and management of the Department's implementation of HSPD-9, integrating the efforts of other DHS Components as well as coordinating those efforts with appropriate Federal departments and agencies; tribal, state and local governments; and the private sector.

OHA engages with DHS components and employs an internal data call to maintain status on implementation efforts. OHA will continue its efforts with the HSPD-9 Dashboard, which is an online forum hosted on the Office of Management and Budget (OMB) Max, to measure and monitor the implementation of HSPD-9 within the Department. OHA is working with the Components to establish milestones and metrics to track final implementation.

3. Please identify all Department of Homeland Security grant programs where food and agro-defense activities are eligible for funding.

Response: Food and agriculture activities are eligible for funding at the following Department of Homeland Security grant programs:

FY2010 Buffer Zone Protection Program (BZPP) BZPP provides funding to increase the preparedness capabilities of jurisdictions responsible for the safety and security of communities surrounding high-priority pre-designated Tier 1 and Tier 2 critical infrastructure and key resource (CIKR) assets.
FY2011 Metropolitan Medical Response System (MMRS) Program

The MMRS program supports the integration of emergency management, health, and medical systems into a coordinated response to mass casualty incidents caused by any hazard.
FY2011 State Homeland Security Program (SHSP) The FY 2011 SHSP provides funding to support the implementation of State Homeland Security Strategies to address the identified planning, organization, equipment, training, and exercise needs at the state and local levels to prevent, protect against, respond to, and recover from acts of terrorism and other catastrophic events.
FY2011 Tribal Homeland Security Grant Program (THSGP) THSGP provides supplemental funding directly to eligible tribes to help strengthen the nation against risks associated with potential terrorist attacks.
FY2011 Urban Areas Security Initiative (UASI) Program The UASI Program provides funding to address the unique planning, organization, equipment, training, and exercise needs of high-threat, high-density urban areas, and assists them in building an enhanced and sustainable capacity to prevent, protect against, respond to, and recover from acts of terrorism.

Additional information on food and agriculture defense funding can be obtained from FEMA.

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration
Silver Spring MD 20993

NOV 01 2011

The Honorable Daniel K. Akaka
Chairman
Subcommittee on Oversight of Government Management,
the Federal Workforce, and the District of Columbia
Committee on Homeland Security and Governmental Affairs
United States Senate
Washington, D.C. 20510-6250

Dear Mr. Chairman:

Thank you for providing me with the opportunity to testify at the September 13, 2011, hearing entitled "Agro-Defense: Responding to Threats Against America's Agriculture and Food System." During the hearing, you asked me questions about the Food and Drug Administration's (FDA or the Agency) interaction with the White House on food and agriculture defense issues and Agency efforts to coordinate with the Department of Homeland Security (DHS) on the National Biosurveillance Integration System (NBIS).

I would like to elaborate on my responses to these questions for the hearing record. FDA has been engaged with the White House for many years on food and agriculture defense issues. With regard to your inquiry about recent interactions with the White House, FDA has been participating in several committees and working groups established by the White House that address food and agriculture defense issues within their broader purviews. Also, FDA participated in regular briefings with the White House National Security staff that discussed, in part, food safety issues related to the Fukushima Daiichi nuclear power plant damaged during the earthquake and tsunami in Japan earlier this year.

I would also like to emphasize that FDA has been actively involved in NBIS since its inception. FDA is a member of the oversight body, which sets the direction for NBIS activities, and has also been an active participant in the weekly calls with member agencies. In addition, when a foodborne illness outbreak occurs with an FDA-regulated product, Agency personnel provide information to NBIS for situational awareness.

Thank you again for the opportunity to testify.

Sincerely,

Ted Elkin
Director, Office of Food Defense,
Communication and Emergency Response

cc: Senator Ron Johnson
Ranking Member

- The Honorable Daniel K. Akaka

We have restated your questions below in bold, followed by our responses.

1. **As you know, the Departments of Agriculture (USDA) and Health and Human Services' Food and Drug Administration serve as co-chairs of the Food and Agriculture Sector Government Coordinating Council. Please discuss the Council's goals, what progress has been made to meet those goals, and how the Council measures its progress.**

The Food and Agriculture (FA) Sector strives to ensure that the nation's food and agriculture networks and systems are secure, resilient, and rapidly restored after all-hazards incidents. Public and private partners aim to reduce vulnerabilities and minimize consequences through risk-based decision-making and effective communication.

In order to achieve this vision, the Food and Agriculture Sector Government Coordinating Council (FASGCC) has six overarching goals:

- Enhance public/private partnership;
- Manage risk to Level 1 and Level 2 assets, systems, functions, and networks, as well as to those identified as critical by sector and state, local, tribal, and territorial partners;
- Enhance the preparedness of the agriculture and food system;
- Improve food and agriculture system detection capabilities;
- Ensure an efficient response to agriculture and food emergencies; and
- Secure agriculture and food production after an agriculture or food emergency.

In 2010, FASGCC and the Food and Agriculture Sector Coordinating Council (FASCC) identified 11 activity-focused goals to implement during the course of the calendar year. While progress has been made on many of these activities, additional efforts are ongoing. These goals are summarized as follows:

Goal 1: Finalize/Communicate the FASCC Value Proposition. The FASCC developed a strategic roadmap with a value proposition—the benefits the private sector receives for their involvement with the FASCC—during the 2010 reporting period. Finalizing and communicating the value proposition is an ongoing activity for 2011.

Goal 2: Begin developing an FASGCC Value Proposition. FASGCC members held their first meeting to discuss the value proposition on July 28, 2010. Following that meeting, a draft strategic plan and a value proposition document were developed. Discussions continued on October 27, 2010, and a final document was approved by consensus during the March 3, 2011, quarterly meeting.

Goal 3: Work with the U.S. Department of Homeland Security (DHS) to enhance the visibility of the FA Sector. The FA Sector is a public/private partnership that combines expertise from several federal agencies, as well as that of state, local, tribal, and territorial officials, and the private sector, including more than 100 trade associations and individual firms participating. This activity is ongoing, although significant efforts were made during 2010, to increase coordination on a range of issues impacting the sector.

Goal 4: Continue to work toward the development of a three-year exercise and training calendar. Work on this activity continues to be an area of focus.

Goal 5: Integrate and collaborate with the DHS Office of Health Affairs on the Sector Benchmarking project. A portal on FoodSHIELD—a web-based system for communication, coordination, education, and training among the nation's food and agriculture sectors—has been developed for food/agriculture readiness tools. A grants tutorial is currently available for stakeholders to learn about federal preparedness grants funding. As of fall 2011, the Food and Agriculture Readiness Measurement (FARM) toolkit for state and local departments of health and agriculture is available on the FoodSHIELD website. A contract has been signed between DHS and the National Association of State Departments of Agriculture (NASDA) to update the model state response plan. The revised model plan will be completed by October 2012.

Goal 6: Continue to refine and develop information sharing, collaboration, and communications processes, including exercising the Information Sharing Working Group (ISWG) processes, providing an after-action report and improvement plan findings from exercises to sector partners, and further developing the infrastructure communications grid (i.e., web-based platforms). The ISWG processes were exercised during tabletop exercises (TTXs) in March 2010 and July 2010. All six processes have been validated. The Suspicious Activity Reporting process will need to be reviewed and revised as guidance is provided on how sector-Suspicious Activity Reporting processes will be incorporated into fusion centers and the Nationwide Suspicious Activity Reporting Initiative (NSI). After-Action Reports for the March 2010 and July 2010 exercises have been completed and posted to the Homeland Security Information Network–Food and Agriculture (HSIN-FA) portal. The improvement plan for the March 2010 exercise has been initiated. The ISWG developed an Outreach & Communications Guide to provide guidelines for improving the HSIN-FA portal, integrating with FoodSHIELD, and training on the information-sharing processes and on making them more operational.

Goal 7: Produce a consolidated guide of available food and agriculture defense guidance, initiatives, tools, and resources. A review of existing materials and resources is ongoing. The *2010 Food and Agriculture Sector-Specific Plan* (SSP) will serve as a resource until a more comprehensive evaluation is complete.

Goal 8: Develop a model private sector Food Defense Prevention Template utilizing existing and forthcoming FDA and USDA materials. This goal will be initiated through the FASCC strategic roadmap initiative.

Goal 9: Develop a livestock and poultry business continuity plan to be exercised in 2011. The FASCC is exploring the potential use of the Secure Egg Supply (SES) Plan—a science-based preparedness plan developed to address a potential outbreak of highly pathogenic avian influenza (HPAI)—as a model for a TTX. The SES plan was developed by an Egg Sector Working Group, which includes representatives of the egg industry, USDA/Animal and Plant Health Inspection Service /Veterinary Services, the University of Minnesota, and Iowa State University (ISU). The National Pork Board also will be contacted to determine the potential utilization of a business continuity plan that is in the early stages of development.

Goal 10: Explore educational avenues that can assist with increasing the private sector's use and understanding of FoodSHIELD. FoodSHIELD and HSIN-FA were promoted at multiple conferences and venues throughout the year. In addition, efforts were initiated to expand access to include industry contacts linked through the Food and Agriculture Sector Criticality Assessment Tool (FASCAT) assessment process.

Goal 11: Continue sector utilization and expansion of FASCAT for 2010. FA Sector assets were accepted for inclusion on the Level 2 list for the first time during the 2010/2011 National Critical Infrastructure Prioritization Program (NCIPP) data call. Meetings among state representatives, FASGCC leadership, and DHS were held in January 2010 and October 2010 to discuss the data call process. Approximately 17 onsite state workshops and 30 webinars were conducted throughout the year to provide training and assistances with FASCAT utilization.

2. **The Government Accountability Office (GAO) report, entitled *Homeland Security: Actions Needed to Improve Response to Potential Terrorist attacks and Natural Disasters Affecting Food and Agriculture* (GAO-11-652), recommended that USDA and Centers for Disease Control and Prevention (CDC) periodically determine whether there are opportunities for the National Veterinary Stockpile to leverage the Strategic National Stockpile.**

    a) **Please discuss whether USDA and CDC have recently discussed this issue and the outcome of the discussion.**

CDC has indicated to us that senior staff from CDC's Division of Strategic National Stockpile (SNS) and the National Veterinary Stockpile (NVS) have discussed the issue recently and remain in agreement that due to the ongoing dialogue between the programs that have existed since the inception of the NVS, at present there are no additional opportunities to leverage the SNS in support of NVS. Following the GAO recommendation to formalize the ongoing dialogue, SNS and NVS staff intend to review the status of NVS and SNS efforts and explore additional collaborations at the next NVS Advisory Committee meeting.

    b) **What plans, if any, does CDC have to leverage USDA's stockpiles in the future?**

At present, CDC tells us that SNS has no plans to leverage the U.S. Department of Agriculture's (USDA) stockpiles, which consist primarily of personal protective equipment and equipment that can be used to support de-population campaigns. SNS will continue the close and ongoing dialogue with NVS staff and will continue to leverage their input and logistical expertise.

3. **The Office of Personnel Management (OPM), in partnership with the Departments of Agriculture, Health and Human Services, Homeland Security, and others, created the Veterinary Medical Officer Talent Management Advisory Council to address Federal veterinary workforce challenges. What progress has been made, both at the Department and government-wide, since the establishment of the Veterinary Medical Officer Talent Management Advisory Council and how has the Department benefited from participating in this Council.**

· The Honorable Daniel K. Akaka

Our colleagues at the Department of Health and Human Services (HHS) informed us that OPM, together with HHS and several other federal agencies that employ Veterinary Medical Officers (VMO), established the Veterinary Medical Officer Talent Management Advisory Council Committee (TMAC) to: (1) identify the current and future needs of the federal veterinary workforce and ways the federal government can better meet those needs; (2) give agency leaders and OPM innovative ways to deal with the issues facing federal veterinarians; (3) help the member agencies meet their animal and public health responsibilities; and (4) create an outreach plan to involve the entire veterinary community, including state and local governments, educational facilities, and private and professional veterinary organizations.

In 2010, the TMAC developed a Strategic Workforce Plan for the VMO Workforce, which will be implemented over the 2011-2015 period. This plan establishes three goals for the TMAC and participating federal agencies: (1) enhance efforts to identify the veterinary workforce needed during catastrophic or emergency events; (2) obtain a comprehensive understanding of the federal veterinary workforce; and (3) improve recruiting and retention results for the federal veterinary workforce.

HHS is benefiting from TMAC efforts to research and coordinate workforce assessments and to recommend cost effective efforts to recruit, develop/train, and retain a high quality and effective workforce within budgetary constraints.

The TMAC has provided guidance to HHS on challenges related to the identification of VMOs, utilizing their clinical health foundation to meet agency mission priorities across HHS, including the National Institutes of Health (NIH), FDA, CDC, and the Assistant Secretary for Preparedness and Response (ASPR).

The 701 Veterinary Medical Science Series (federal classification) is one of the six OPM Mission Critical Occupations (MCOs) across all relevant federal agencies, and many VMOs are in this job series. HHS has direct-hire authority for this job series. However, other VMOs are serving in non-701 series.

The TMAC has worked with designated HHS representatives to review 701 series activities within HHS and to enumerate the number of VMOs employed within NIH, FDA, and CDC. Through this work, in 2010, CDC and its sister agency, the Agency for Toxic Substances and Disease Registry (ATSDR), identified more than 100 veterinarians employed by CDC and ATSDR in a variety of critical public health protection/health promotion scientific and clinical functions.

The TMAC will continue to facilitate and participate in activities that will assist HHS in completing an assessment of their veterinary workforce requirement as part of a more comprehensive human capital workforce plan. The results of this assessment will be used by OPM and HHS to ensure that future mission priorities that utilize VMOs can sustain a responsive, flexible, proficient, and experienced veterinary workforce.

The Honorable Daniel K. Akaka

The TMAC has supported the development of Agency-specific position papers on strategies to recruit and maintain the VMO workforce, integrating personnel systems and their respective authorities, including the Civil Service (Title 5); the Senior Executive Service and senior level (SL), or scientific and professional (ST) positions under Title 5; Title 42 authorities used for comparable positions; and Title 10 (US Uniformed Services, including the Department of Defense and the U.S. Public Health Service Commissioned Corps). HHS is also endeavoring to evaluate barriers and challenges to maintaining a skilled and adequately sized VMO workforce. USDA has completed a draft position paper, and the TMAC is working with HHS to create a similar strategic document to inform human capital officers throughout the Agency of similar flexibilities and options used by other agencies, including:

- Recruitment incentives;
- Creditable service for annual leave accrual;
- Direct hire authority;
- Referral bonus award;
- Schedule A authority to hire VMO's on intermittent schedules;
- Student loan repayment;
- Superior qualifications appointments; and
- Travel and transportation to first post of duty.

Post-Hearing Questions for the Record
Submitted to Sheryl Maddux
From Senator Daniel K. Akaka

"Agro-Defense: Responding to Threats Against America's Food and Agriculture System"
September 13, 2011

1. **In your testimony, you discussed the Homeland Security Information Network and Food-shield as two key ways the Federal Government shares unclassified information with its public and private sector partners. Please explain how the Department shares classified information with its non-Federal partners, and what challenges, if any, it faces.**

   As noted, FoodSHIELD is used to share unclassified information and the Homeland Security Information Network (HSIN) is used to share unclassified information, including "For Official Use Only" and other Sensitive But Unclassified information.

   In regards to sharing classified information, USDA works in collaboration with the Food and Drug Administration (FDA), the Department of Homeland Security (DHS), and the Federal Bureau of Investigation (FBI) to share such information with non-Federal partners as necessary or appropriate. Several classified briefings, facilitated by DHS, have been held with private sector partners over the past year. Typically these are held at DHS facilities in the Washington, DC, metropolitan area. During calendar year 2012, USDA and FDA as the co-chairs of the Food and Agriculture Sector Government Coordinating Council will work with DHS, FBI, and non-Federal partners to investigate the possibility of conducting classified briefings in conjunction with joint quarterly meetings.

   Challenges with sharing classified information with non-Federal partners include 1) the limited number of private sector individuals with appropriate security clearances, 2) the geographic diversity of non-Federal food and agriculture sector partners, and 3) the availability of secure channels available to USDA for transmitting and storing classified information with non-Federal partners. USDA and FDA continue to work with DHS to expand the number of private sector representatives with appropriate security clearances and investigate utilizing Fusion Centers or regionally located offices for conducting classified briefings.

2. **As you know, the Departments of Agriculture (USDA) and Health and Human Services' (HHS) Food and Drug Administration serve as co-chairs of the Food and Agriculture Sector Government Coordinating Council. Please discuss the Council's goals, what progress has been made to meet those goals, and how the Council measures its progress.**

   The Food and Agriculture Sector Government Coordinating Council (FASGCC) strives to ensure that the Nation's food and agriculture networks and systems are secure, resilient, and rapidly restored after all-hazards incidents. Public and private partners aim to reduce vulnerabilities and minimize consequences through risk-based

decision-making and effective communication. In order to achieve this vision, the FASGCC has six overarching goals:

- Enhance public/private partnerships;
- Manage risk to Level 1 and Level 2 assets, systems, functions, and networks, as well as to those identified as critical by sector and state, local, tribal, and territorial partners;
- Enhance the preparedness of the agriculture and food system;
- Improve food and agriculture system detection capabilities;
- Ensure an efficient response to agriculture and food emergencies; and
- Secure agriculture and food production after an agriculture or food emergency.

In 2010, the FASGCC identified 11 activity-focused goals. Progress toward meeting these goals and other initiatives within the Food and Agriculture Sector is documented annually in a Sector Annual Report (SAR) that is submitted to the Department of Homeland Security Office of Infrastructure Protection in the National Protection and Programs Directorate (NPPD).The goals and sample accomplishments against them are summarized below:

Goal 1: Develop a FASGCC Value Proposition. FASGCC approved the "value proposition" - the benefits the private sector receives for their involvement with the FASCC - on March 3, 2011.

Goal 2: Communicate the FASCC Value Proposition.

Goal 3: Work with the U.S. Department of Homeland Security to enhance the visibility of the Food and Agriculture (FA) Sector. The FA Sector is a public/private partnership that combines expertise from several federal agencies, as well as that of state, local, tribal, and territorial officials, and the private sector, including more than 100 trade associations and individual firms. Accomplishments include development of a logo for the FA Sector and increased coordination on a range of issues impacting the sector.

Goal 4: Develop a three-year exercise and training calendar. Work on this activity continues to be an area of focus in 2011.

Goal 5: Integrate and collaborate with the U.S. Department of Homeland Security Office of Health Affairs on the Sector Benchmarking project. A portal called "FoodSHIELD" – a web-based system for communication, coordination, education, and training among the nation's food and agriculture sectors – has been developed for food/agriculture readiness tools. A grants tutorial is currently available for stakeholders to learn about federal preparedness grants funding. In November, the food portion of the farm tool should be available. A pilot with up to six States was initiated in January 2011. A contract has been signed between DHS and the National Association of State Departments of Agriculture (NASDA) to update the model State response plan. The revised model plan will be completed by October 2012.

Goal 6: Continue to refine and develop information sharing, collaboration, and communications processes. The Information Sharing Working Group (ISWG) processes were exercised during tabletop exercises (TTXs) in March 2010 and July 2010. All 6 processes have been validated. The Suspicious Activity Reporting process will be revised to incorporate fusion centers and the National Suspicious Activity Reporting initiative. After-Action Reports for the March 2010 and July 2010 exercises have been completed and posted to the Homeland Security Information Network–Food and Agriculture (HSIN-FA) portal. The improvement plan for the March 2010 exercise has been initiated. The ISWG developed an Outreach & Communications Guide to provide guidelines for improving the HSIN-FA portal, integration with FoodSHIELD, and training on the information-sharing processes and on making them more operational.

Goal 7: Produce a consolidated guide of available food and agriculture defense guidance, initiatives, tools, and resources. A review of existing materials and resources is ongoing. The *2010 Food and Agriculture Sector-Specific Plan* (SSP) serves as an interim resource until a more comprehensive evaluation is complete.

Goal 8: Develop a model private sector Food Defense Prevention Template utilizing existing and forthcoming FDA and USDA materials.

Goal 9: Develop a livestock and poultry business continuity plan to be exercised in 2011. The FASCC is exploring the potential use of the Secure Egg Supply (SES) Plan—a science-based preparedness plan developed to address a potential outbreak of highly pathogenic avian influenza (HPAI)—as a model for a TTX. The SES plan was developed by an Egg Sector Working Group, which includes representatives of the egg industry, USDA/Animal and Plant Health Inspection Service /Veterinary Services, the University of Minnesota, and Iowa State University (ISU). The National Pork Board also will be contacted to determine the potential utilization of a business continuity plan that is in the early stages of development.

Goal 10: Explore educational avenues that can assist with increasing the private sector's use and understanding of FoodSHIELD. FoodSHIELD and HSIN-FA were promoted at multiple conferences and venues throughout the year.

Goal 11: Continue sector utilization and expansion of Food and Agriculture Sector Criticality Assessment Tool for 2010. FA Sector assets were accepted for inclusion on the Level 2 list for the first time during the 2010/2011 National Critical Infrastructure Prioritization Program (NCIPP) data call. Meetings among State representatives, FASGCC leadership, and DHS were held in January 2010 and October 2010 to discuss the data call process. Approximately 17 onsite State workshops and 30 Webinars were conducted throughout the year to provide training on and to assist with FASCAT utilization.

3. **The Government Accountability Office (GAO) report, entitled *Homeland Security: Actions Needed to Improve Response to Potential Terrorist attacks and Natural***

Disasters Affecting Food and Agriculture **(GAO-11-652), recommended that USDA and Centers for Disease Control and Prevention (CDC) periodically determine whether there are opportunities for the National Veterinary Stockpile to leverage the Strategic National Stockpile. In your testimony, you agreed with GAO's recommendation and indicated that USDA will continue to explore opportunities with CDC.**

a) Please discuss whether USDA and CDC have recently discussed this issue and the outcome of the discussion.

Leadership of the Strategic National Stockpile (SNS) and the National Veterinary Stockpile (NVS) are in constant communication with each other via email and telephonic conferences. Both agencies agreed to explore opportunities for the NVS to leverage SNS mechanisms or infrastructure as directed by HSPD-9, and this would be a topic for discussion at the National Veterinary Stockpile Intra-governmental Advisory Committee for Strategic Steering, scheduled for 14 December 2011. This committee advises the NVS program on its national strategy for acquiring, holding, and deploying countermeasures.

b) What plan, if any, does USDA have to leverage CDC's stockpiles in the future?

As stated above, opportunities for the NVS program to leverage SNS mechanisms or infrastructure will be a topic for discussion at the NVS Intra-governmental Advisory Committee for Strategic Steering, scheduled for 14 December 2011. The specific areas that will be addressed include sharing of warehouse space, inventory management, the sharing of antivirals, and various SNS transport mechanisms. If determined that appropriate opportunities exist to leverage the SNS, the NVS will recommend establishing a formal agreement between the two agencies to use the identified mechanisms and infrastructure. If not, the NVS staff will document the findings, and identify alternatives to collaborate with the SNS.
The SNS and NVS leadership continues to work closely to overcome similar challenges. For instance, the SNS is currently developing an inventory management system to track their resources when deployed at the State and local levels and has already offered the NVS access to this system once it is finished.

4. According to the GAO report (GAO-11-652), states have difficulty receiving information from USDA on what resources are in the National Veterinary Stockpile and what resources they would receive in the event that a natural disaster or intentional attack overwhelms their resources. What plans does the Department have to improve communication with states regarding the National Veterinary Stockpile?

Since then report was published, NVS officials have taken a number of steps to improve communication with States, Tribes, and Territories in regards to the countermeasures maintained by the NVS and what they can expect to receive in the event of a damaging animal disease outbreak. One such step is the publishing of an *NVS Logistics Catalog* that NVS planners can download from the NVS website. This

catalog includes photographs, descriptions, stock numbers, packing details, and other detailed information for many of the physical countermeasures maintained at NVS logistics centers throughout the U.S. The catalog allows for planning and acquisition of like items, as well as identification of countermeasures not provided by the NVS.

Another example is the establishment of an NVS request process that includes the development of a more user-friendly *NVS Countermeasures Request Form,* and the development of a standard Statement of Work (SOW) that NVS planners can use to request NVS Depopulation, Disposal, and Disinfection (3D) Response Support Services.

In addition, the NVS State-Federal liaison maintains regular communications with NVS planners and other Federal Agencies to teach them about the NVS capabilities and how they can partner with USDA. The liaison officer advises and helps resolve problems affecting State and Tribal partner's ability to receive, manage, and distribute NVS countermeasures to field responders. Also, the NVS constantly updates the "questions and answers" section of its website in order to ensure NVS planners understanding of the NVS capabilities and request process.

The NVS takes its commitment to States, Tribes, and Territories seriously and will continue to respond to their feedback in order to insure an efficient exchange of communication.

5. **GAO identified instance where the roles and responsibilities were unclear with respect to agriculturally related consequences of disasters (GAO-11-652). Your written testimony indicates that Animal and Plant Health Inspection Service (APHIS) coordinators work on a daily basis with the Federal Emergency Management Agency in their regional offices. What actions has the Department taken to ensure its responsibilities are clear in the event of a disaster?**

APHIS is engaged with the Federal Emergency Management Agency (FEMA) and other Federal Agencies and States in the development, revision and review of all-hazards response planning to ensure the Department's responsibilities are understood.

APHIS participates in catastrophic planning for events beyond the normal response capabilities of State and local governments. APHIS fulfills this commitment by having an Emergency Support Function (ESF)-11 National Coordinator, two Regional Emergency Response Program Managers, and an ESF-11 Coordinator in each of the ten Federal Emergency Management Agency (FEMA) Regions. The ESF-11 Coordinators work on a daily basis with FEMA, other Federal Agencies, and the States.

The Agency also participates extensively in regional and State all-hazards planning efforts to clarify roles and responsibilities and synchronize State/Federal planning efforts. Currently, APHIS is working with FEMA to revise the National Response

Framework. The Agency also provides FEMA and States with specific planning documents that clarify its role in support of them during natural disasters. It also participates in quarterly Regional Interagency Steering Committee meetings with FEMA, States and other Federal Agencies to include Non-Government Agencies to improve the effectiveness of a coordinated federal response to major disasters, and addresses specific questions, in coordination with USDA programs, as they arise in States or FEMA Regional offices.

6. **The Office of Personnel Management (OPM), in partnership with USDA, HHS, the Department of Homeland Security and others, created the Veterinary Medical Officer Talent Management Advisory Council to address Federal veterinary workforce challenges. What progress has been made, both at the Department and government-wide, since the establishment of the Veterinary Medical Officer Talent Mangement Advisory Council and how has the Department benefited from participating in this Council?**

APHIS has taken numerous steps to address Federal veterinary workforce challenges in light of the Veterinary Medical Officer Talent Management Advisory Council. APHIS has created an Action Plan with short and long term goals that will address issues impacting the Veterinary Medical Officer (VMO) Workforce and emergency response. It also developed the VMO Resource Chart. This document provides information related to Agency strength and retirement trends of the target population. The Agency has also created collaborative working groups to address specific issues related to workforce planning, emergency response and recruitment/retention, as well as collaborating and communicating across the Federal sector resulting in the identification of issues related to the VMO workforce.

The Advisory Council has enabled the Agency to reach out to the entire Federal sector to address issues impacting VMO workforce and Animal Health Emergency Response.

BACKGROUND
AGRO-DEFENSE: RESPONDING TO THREATS AGAINST AMERICA'S AGRICULTURE AND FOOD SYSTEM
SEPTEMBER 13, 2011

Background

Agriculture and food are critical to U.S. national security. The U.S. agriculture and food industry annually produces $300 billion worth of food and other farm products[1] and is estimated to be responsible for one out of every 12 U.S. jobs.[2] Protecting the U.S. agriculture and food systems is critically important to the public health and the U.S. economy.

Following the terrorist attacks of September 11, 2001, Congress and the President modified the roles and responsibilities of federal agencies that defend against agroterrorism. Under the Homeland Security Act of 2002 (P.L. 107-296), the Department of Homeland Security (DHS) was established and charged with coordinating national efforts to protect against terrorism, including agroterrorism.

Homeland Security Presidential Directive 9

In 2003, agriculture and food were added to the critical infrastructure list by Homeland Security Presidential Directive 7 (HSPD-7), "Critical and Infrastructure Identification, Prioritization, and Protection." In 2004, the President signed HSPD-9, "Defense of U.S. Agriculture and Food," which established the national policy to protect against terrorist attacks on agriculture and food systems. HSPD-9 outlines goals and assigns lead and supporting roles to agencies to achieve these goals. There are seven categories outlined in HSPD-9: awareness and warning; vulnerability assessments; mitigation strategies; response planning and recovery; outreach and professional development; research and development; and budget. The Departments of Homeland Security, Agriculture, and Health and Human Services are assigned lead responsibilities to achieve the goals.

Emergency Support Function 11

As directed in Homeland Security Presidential Directive 5 (HSPD-5), DHS developed the National Response Plan (NRP, now known as the National Response Framework) in 2004 to coordinate federal agencies' efforts into a unified all-hazards approach for emergencies. The NRP addresses food and agriculture in the Emergency Support Function (ESF) annexes, which coordinate federal interagency support by describing the roles and responsibilities of departments and agencies. ESF-11, "Agriculture and Natural Resources Annex," supports state, tribal, and local authorities and other federal agency efforts to provide nutrition assistance; respond to

[1] Written Statement of Thomas Vilsack, Secretary of the U.S. Department of Agriculture, Hearing on FY 2011 U.S. Department of Agriculture Budget: Subcommittee on Agriculture, Rural Development, Food and Drug Administration, and Related Agencies, Committee on Appropriations, U.S. Senate, S. Hrg. 111-937, March 2, 2010.
[2] Written Statement of Thomas Vilsack, Secretary of the U.S. Department of Agriculture, Hearing on Food for Thought: The Role, Risks and Challenges for American Agriculture and the Next Farm Bill in Meeting the Demands of a Growing World: Committee on Agriculture, Nutrition, and Forestry, U.S. Senate, May 26, 2011.

animal and plant diseases and pests; ensure the safety and security of the commercial food supply; protect natural, cultural, and historic properties resources; and provide for the safety and well-being of household pets during an emergency response. The U.S. Department of Agriculture (USDA) was given responsibility for coordinating the capabilities and resources of the federal government in the event of a significant incident, such as an act of agroterrorism.

Coordination

Lack of Centralized Coordination

GAO is expected to report that there is no centralized coordination to oversee the federal government's overall progress in implementing responsibilities outlined in HSPD-9. In the past, the Homeland Security Council (HSC) oversaw federal agencies' HSPD-9 implementation by requesting information from agencies about their progress. DHS's Office of Health Affairs supported these activities by coordinating agencies' reporting of HSPD-9 implementation progress. In 2008, at the request of HSC, DHS created an online forum, called the "Defense of Food and Agriculture Dashboard," to allow the HSC and other department officials to view agencies' implementation progress. However, since 2009, the National Security Staff has not requested this information and DHS no longer coordinates agencies' reporting of their HSPD-9 implementation progress. Due to this lack of centralized coordination, it is unclear how effectively or efficiently agencies are using resources and coordinating efforts in implementing HSPD-9.[3]

Private-Public Partnerships

The National Infrastructure Protection Plan (NIPP) provides an overall framework for integrating critical infrastructure and key resources programs, strategies, and activities under HSPD-7. This sector partnership model encourages critical infrastructure owners and operators to create Sector Coordinating Councils (SCC) as the principal entity for coordinating with the government on a wide range of critical infrastructure protection activities and issues. Government Coordinating Councils (GCC) are the government counterpart for each SCC and are comprised of representatives from federal, state, tribal, local, and territorial (SLTT) governments. Each GCC is co-chaired by a representative from the designated Sector-Specific Agency (SAA) with responsibility for ensuring appropriate representation on the GCC and providing cross-sector coordination with SLTT governments.

The USDA and the U.S. Department of Health and Human Services/Food and Drug Administration (HHS/FDA) are designated as SAAs for the Food and Agriculture Sector. The SSAs and DHS share the responsibility for implementing the NIPP with their partners. The NIPP identifies the needs for Sector-Specific Plans (SPP) for each of the sectors to complement

[3] U.S. Government Accountability Office, *Homeland Security: Actions Needed to Improve Response to Potential Terrorist Attacks and Natural Disasters Affecting Food and Agriculture*, Report to the Chairman, Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia, Committee on Homeland Security and Governmental Affairs, U.S. Senate, GAO-11-652 (draft, available upon request to the Subcommittee), pp. 8-10.

the National Response Framework. The Food and Agriculture SSP was created in 2007 and updated in 2010, which includes the Food and Agriculture Sector Vision, "to ensure that the Nation's food and agriculture networks and systems are secure, resilient, and rapidly restored after all-hazards incidents. Public and private partners aim to reduce vulnerabilities and minimize consequences through risk-based decision making and effective communications."[4]

Key accomplishments as a result of collaboration between the Food and Agriculture GCC and SCC include:

- Developing the Food and Agriculture Sector Criticality Assessment Tool (FAS-CAT) for states to identify their critical assets;
- Developed and tested information-sharing protocols that leverage Homeland Security Information Network (HSIN) and FoodSHIELD to improve information sharing and collaboration within the sector;
- Developed training and education materials for food defense awareness among food industry professional and for the training of state and local officials in food-related disaster management;
- Expanded the Food Emergency Response Network for analysis of food samples for food safety and food defense agents of concern; and
- Increased GCC membership.[5]

Information Sharing

In 2005, GAO found weaknesses in the flow of critical information among key food and agriculture stakeholders. For instance, DHS was not seeking input from key stakeholders on critical national guidance documents, and after-action reports on national and state-level test exercises of agroterrorism events were not shared among key stakeholders.[6]

Since GAO's 2005 report, to facilitate information sharing, DHS created the Homeland Security Information Network, an online information sharing tool to enable communications between sector and governmental entities. HSIN provides a secure medium for DHS and sector leaders to communicate actionable alerts and warnings and store sensitive documents.[7] FoodSHIELD, which is sponsored by the DHS Center of Excellence's National Center for Food Protection and Defense, is a web-based platform that facilitates communication, education, and training among the Food and Agriculture Sector. FoodSHIELD is designed to identify and profile the farm-to-table infrastructure for protecting and defending the food supply and serves as a portal to food and agriculture defense materials. Additionally, State and Urban Area Fusion Centers serve as another way to share information with State and local partners.[8] However, it is unclear whether

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[4] U.S. Departments of Homeland Security, Agriculture, and Health and Human Services, *Food and Agriculture Sector-Specific Plan: An Annex to the National Infrastructure Protection Plan*, 2010, p. 20.
[5] *Ibid.*, pp. i-ii.
[6] U.S. Government Accountability Office, *Homeland Security: Much is Being Done to Protect Agriculture from a Terrorist Attack, but Important Challenges Remain*, Report to Congressional Requesters, GAO-05-214, March 2005, pp. 7-8.
[7] U.S. Departments of Homeland Security, Agriculture, and Health and Human Services, *Food and Agriculture Sector-Specific Plan: An Annex to the National Infrastructure Protection Plan*, 2010, p. 75.
[8] *Ibid.*, pp. 75-76.

information disseminated through the Fusion Centers is reaching the appropriate state and local agricultural, veterinary, and food officials.[9]

Detection and Surveillance Capabilities

Early detection is important in limiting the damage caused by pests and pathogens. It is less expensive to prevent the spread of and eradicate agricultural pests and pathogens early than when they are widespread.[10] States carry out foodborne illness surveillance and investigate foodborne disease outbreaks in coordination with Centers for Disease Control and Prevention (CDC), FDA, USDA's Food Safety and Inspection Service (FSIS), and other federal agencies. Detection of foreign animal pests and pathogens are conducted by livestock producers and private veterinary practitioners.

DHS's National Biosurveillance Integration Center's (NBIC) Biological Common Operating Picture (BCOP) tracks current worldwide biological events. The BCOP provides a situational awareness tool for the National Biosurveillance Integration System (NBIS), which is a community of federal and other stakeholders that have information that can be used to enhance the safety and security of the U.S. against biological events. USDA is developing predictive analytics, for use in conjunction with NBIS, to monitor, coordinate, and analyze surveillance information on food and animal incidents from USDA data sources.[11] However, in 2009, GAO found that NBIC was not fully equipped to carry out its mission because it lacked data and personnel from its partner agencies.[12]

Disaster Response and Recovery Challenges

Federal Coordination for a Food and Agriculture Response

It is unclear what types of support can be provided under ESF-11, which has delayed disaster response efforts. In a 2006 report on catastrophic disasters, GAO concluded that "legal authorities and roles and responsibilities must be clearly defined, effectively communicated, and well understood in order to facilitate rapid and effective decision making."[13] However, these roles appear to remain unclear. In its soon-to-be-released report, GAO identifies instances where the roles and responsibilities, as well as funding eligibility, were unclear with respect to agriculturally related consequences of disasters. Extended negotiations between FEMA and

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[9] Meeting with USDA officials in Washington, D.C. August 23, 2011.
[10] National Research Council, *Countering Agricultural Bioterrorism*, 2003, pp. 49-50.
[11] U.S. Departments of Homeland Security, Agriculture, and Health and Human Services, *Food and Agriculture Sector-Specific Plan: An Annex to the National Infrastructure Protection Plan*, 2010, p. 35.
[12] U.S. Government Accountability Office, *Biosurveillance: Developing a Collaboration Strategy is Essential to Fostering Interagency Data and Resource Sharing*, GAO-10-171, December 2009, Highlights.
[13] U.S. Government Accountability Office, *Catastrophic Disasters: Enhanced Leadership, Capabilities, and Accountability Controls Will Improve the Effectiveness of the Nation's Preparedness, Response, and Recovery System*, Report to Congressional Committees, GAO-06-618, September 6, 2006, Highlights.

USDA delayed actions to provide funding to protect animal health and dispose of animal carcasses.[14]

Federal Veterinarian Workforce

The federal veterinarian workforce defends against naturally and intentionally introduced diseases that could harm human and animal health. Outbreaks of diseases including avian influenza, and foot-and-mouth (FMD) disease have demonstrated the need for the U.S. to have a sufficient federal veterinarian workforce capacity. In 2009, GAO found that despite an increasing shortage of veterinarians, the federal government lacked a comprehensive understanding of the sufficiency of its veterinarian workforce to perform routine activities. Although some component agencies have conducted workforce assessments, USDA and HHS had not conducted a department level assessment of their veterinarian workforces. In addition to workforce planning issues, GAO found that there was no government-wide effort to address current and future federal veterinarian workforce shortages, even though 16 of 24 component agencies that employ veterinarians reported that they were concerned about the sufficiency of their veterinarian workforces.[15]

GAO also found that several federal agencies used unrealistic assumptions or lacked sufficient information to engage in successful workforce planning. Furthermore, GAO found that USDA's Animal and Plant Health Inspection Service (APHIS), FSIS, Agricultural Research Service (ARS), and FDA had continuity of operations plans in place related to their essential veterinary functions, but each lacked key elements that the FEMA guidance for pandemic planning finds important during a pandemic outbreak.[16] GAO made several recommendations to improve the federal veterinarian workforce.[17] See the Subcommittee's February 2009 hearing on the federal veterinarian workforce for additional information.[18]

In response to GAO's recommendations, the U.S. Office of Personnel Management, in partnership with USDA, HHS, DHS, and others, created the Veterinary Medical Officer (VMO) Talent Management Advisory Council (TMAC). The TMAC established a Strategic Workforce Plan for the VMO workforce, including three goals for the Council.[19]

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[14] GAO-11-652, pp. 25-31.
[15] U.S. Government Accountability Office, *Veterinarian Workforce: Actions Are Needed to Ensure Sufficient Capacity for Protecting Public and Animal Health*, Report to the Chairman, Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia, Committee on Homeland Security and Governmental Affairs, U.S. Senate, GAO-09-178, February 2009, pp. 5-9.
[16] *Ibid.*, pp. 10-14.
[17] *Ibid.*, pp. 42-43.
[18] S. Hrg. 111-232.
[19] U.S. Office of Personnel Management, *News Release: OPM Issues Strategic Workforce Plan for the VMO Workforce, Report Addresses Emergency Plans and Recruiting Initiatives for Federal Veterinarians*, http://www.opm.gov/news/opm-issues-strategic-workforce-plan-for-the-vmo-workforce,1618.aspx, November 1, 2010.

National Veterinary Stockpile

HSPD-9 directs the Secretary of Agriculture to develop a stockpile containing sufficient resources to respond to the most damaging animal diseases affecting human health and the economy should an event overwhelm state and industry resources. HSPD-9 also requires that these resources be deployable within 24 hours. In 2006, APHIS began operating the National Veterinary Stockpile (NVS) to respond to the 17 most damaging animal diseases. The NVS includes vaccines, diagnostic test kits, personal protective equipment, animal handling equipment, antiviral medication, and contracts for commercial services. APHIS issued guidance to help states develop plans to request, manage, and use these resources if needed. However, GAO identified several challenges in implementing the NVS, including: vaccines and diagnostic test kits have not been developed for certain diseases or may be too costly for purchase; it will take longer than 24 hours to deliver certain vaccines to states because vaccines are not stored in a ready-to-use state; several states may not be prepared to receive and use NVS as they have not created an NVS plan nor identified a location to manage the NVS resources; states may not have received sufficient information on the resources available in the NVS; and there may be confusion between APHIS and CDC on opportunities to leverage each other's stockpile resources.[20]

Eradication and Decontamination

HSPD-9 assigns the Secretary of Agriculture, in coordination with the Secretary of Health and Human Services, responsibility for enhancing recovery efforts that "rapidly remove and effectively dispose of contaminated food and agriculture products or infected plants and animals, and decontaminate premises." USDA has taken steps to fulfill this responsibility. However, GAO identified several challenges related to eradication methods, including a lack of sufficient workforce capacity to depopulate animals quickly during a catastrophic disease outbreak; carcass burial, which is traditionally the preferred method for carcass disposal, is not a safe method on a large scale; research gaps in how to decontaminate areas infected with disease, such as feedlots; and difficulty in tracing the source of contamination for recalled food products.[21]

National Plant Disease Recovery System

HSPD-9 directs the Secretary of Agriculture to develop the National Plant Disease Recovery System (NPDRS) to help the nation recover from high-consequence plant disease outbreaks by using resistant seed varieties and disease control measures. USDA's ARS is responsible for implementing the NPDRS. ARS's Office of Pest Management Policy is developing 30 to 50 recovery plans for select high-consequence plant diseases that may enter the U.S., and as of May 2011 ARS has completed 13 plans. ARS is also conducting research on new emerging plant diseases. GAO identified several challenges related to the NPDRS, including a lack of resources within ARS to fill critical research gaps and track research conducted or underway that may fill the gaps; and ineffective communication between the NPDRS to key stakeholders.[22]

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[20] GAO-11-652, pp. 10-15.
[21] GAO-11-652, pp. 18-23.
[22] GAO-11-652, pp. 15-17.

Relevant Legislation

FDA Food Safety Modernization Act (P.L. 111-353), was signed into law by President Barack Obama on January 4, 2011. The law expands and modifies FDA's existing authorities, including increasing the frequency of inspections at food facilities, strengthening record-keeping requirements, increasing more oversight to farms, and mandating product recalls if a firm fails to do so voluntarily.

Homeland Security Act of 2002 (P.L. 107-296), was signed into law by President George W. Bush on November 25, 2002. The law established DHS, and it transferred personnel and responsibility for agricultural border inspections, as well as possession of the Plum Island Animal Disease Center, from USDA to DHS.

Public Health Security and Bioterrorism Preparedness and Response Act (P.L. 107-188), was signed into law by President George W. Bush on June 12, 2002. The law authorizes HHS to upgrade and renovate CDC facilities, expand the strategic national stockpile, and provide grants to state and local governments and hospitals to improve preparedness and planning; requires HHS and USDA to register and regulate facilities that handle potentially dangerous biological agents; and provides new regulatory authorities for the FDA to block the importation of unsafe foods.

The Animal Health Protection Act (P.L. 107-171, Title X, Sec. 10402), was signed into law by President George W. Bush on May 13, 2002. The law provides regulatory and eradication authorities to the Secretary of Agriculture and APHIS.

The Plant Protection Act (P.L. 106-224, Title IV, Sec. 402), was signed into law by President Bill Clinton on June 20, 2000. The law provides the Secretary of Agriculture the authority to eradicate or prevent a foreign animal disease from entering the country.

Additional Information

U.S. Government Accountability Office, *Homeland Security: Actions Needed to Improve Response to Potential Terrorist Attacks and Natural Disasters Affecting Food and Agriculture*, Report Chairman, Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia, Committee on Homeland Security and Governmental Affairs, United States Senate, GAO-11-652, August 2011.

U.S. Government Accountability Office, *High-Risk Series: An Update*, Report to Congressional Committees, GAO-11-278, February 2011.

U.S. Department of Homeland Security, U.S. Department of Agriculture, and Food and Drug Administration, *Food and Agriculture Sector-Specific Plan: An Annex to the National Infrastructure Protection Plan*, 2010.

Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia, Committee on Homeland Security, United States Senate, *Protecting Animal and Public Health: Homeland Security and the Federal Veterinarian Workforce*, S. Hrg. 111-232, February 26, 2009.

U.S. Government Accountability Office, *Veterinarian Workforce: Actions Are Needed to Ensure Sufficient Capacity for Protecting Public and Animal Health*, Report to Chairman, Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia, Committee on Homeland Security and Governmental Affairs, United States Senate, GAO-09-178, February 4, 2009.

U.S. Department of Homeland Security, *National Response Framework*, January 2008.

Jim Monke, Congressional Research Service, *Agroterrorism: Threats and Preparedness*, RL32521, March 12, 2007.

Committee on Agriculture, Nutrition, and Forestry, United States Senate, *To Review Biosecurity Preparedness and Efforts to Address Agroterrorism Threats*, S. Hrg. 109-457, July 20, 2005.

Subcommittee on Intelligence, Information Sharing, and Terrorism Risk Assessment, Committee on Homeland Security, United States House of Representatives, *Evaluating the Threat of Agro-Terrorism*, Serial No. 109-16, May 25, 2005.

U.S. Government Accountability Office, *Homeland Security: Much Is Being Done to Protect Agriculture from a Terrorist Attack, but Important Challenges Remain*, Report to Congressional Requesters, GAO-05-214, March 2005.

National Research Council, *Countering Agricultural Bioterrorism*, 2003.

Committee on Governmental Affairs, United States Senate, *Agroterrorism: The Threat to America's Breadbasket*, S. Hrg. 108-491, November 19, 2003.

Henry S. Parker, *Agricultural Bioterrorism: A Federal Strategy to Meet the Threat*, McNair Paper 65, National Defense University, March 2002.