

# Hearing of the United States Senate Agriculture Committee

December 13, 2017

## Statement for the Record

**Richard B. Myers<sup>1</sup>**  
**President**  
**Kansas State University**

Chairman Roberts, Ranking Member Stabenow, and distinguished members of the Committee, I am honored to appear before you today on behalf of Kansas State University (K-State) for this hearing entitled, "Safeguarding American Agriculture in a Globalized World."

### **THREATS AND CONSEQUENCES**

Food insecurity is an ever increasing global problem as delineated in a 2015 assessment by the intelligence community.<sup>2</sup> Hungry people are not happy people. America still feeds the world, so there is an urgent need to protect America's food crops, food animals, and food supply from naturally occurring and intentionally delivered biological threats. Either could be devastating.

One of the early discoveries when our troops went into Afghanistan in 2002 was a list of 16 pathogens *al-Qaeda* was planning to use as bioweapons. Only 6 of them targeted people. Another 6 were pathogens of livestock and poultry and 4 were crop pathogens. So, *al-Qaeda* wasn't just planning to attack people with biological weapons; they were going after agriculture and food as well.

*al-Qaeda* has always had a goal of destroying the U.S. economy, so bioweapons targeting crops, livestock and poultry is consistent with that objective. Moreover, natural infectious disease outbreaks could lead to the same outcome.

Consider the United Nations (UN) Food and Agriculture Organization (FAO) assessment that "just 15 crop plants provide 90 percent of the world's food energy intake, with three – wheat, rice, and maize – making up two-thirds of this."<sup>3</sup> Ninety percent makes the protection of food crops rather significant.

If wheat, rice, or corn are targeted successfully by *al Qaeda* or other bioterrorists or if there's a natural disease outbreak that devastates the global supply of any one of the three, the world will be in big trouble. The Wheat State takes such matters seriously.

Although it didn't turn out to be a global disaster, the pathogen Wheat Blast hitting Bangladesh in 2016 certainly wreaked havoc there. Wheat Blast can kill 100% of crops, and it likely got to Bangladesh in a shipment of grain from South America where it's endemic. The outcomes were devastating in areas of the country where it occurred, and even though infected fields were

---

<sup>1</sup> General (Ret.), 15<sup>th</sup> Chairman of the Joint Chiefs of Staff

<sup>2</sup> *Intelligence Community Assessment: Global Food Security*, ICA 2015-04; September 2015

<sup>3</sup> See United Nations Food and Agriculture Organization: <http://www.fao.org/docrep/u8480e/u8480e07.htm>

burned, there was a recurrence in 2017; the new outbreak spread to India too. The U.S. should consider restricting grain shipments here from South America to avoid a similar outcome.

With livestock, the Porcine Epidemic Diarrhea virus (PEDv) foreign animal disease (FAD) outbreak in the U.S. in 2013 highlighted biosecurity problems here that must be addressed. It resulted in over 8 million baby pigs dying, and significant financial losses incurred by producers drove up the cost of pork markedly. It's suspected PEDv came to the U.S. in feed products from China, but the FBI still hasn't confirmed whether the virus got here by accident or intentionally. There are reasons to suspect the latter. Either way, the impacts were substantial, and PEDv is now an enduring endemic problem to deal with in the U.S., not a FAD threat.

There are innumerable FAD threats that the U.S. must worry about today, and the top-line FAD concerns are those currently projected to be worked on in the U.S. Department of Homeland Security's (DHS's) \$1.25 billion National Bio and Agro-defense Facility (NBAF) under construction on the K-State campus. These include the livestock-only threats, African Swine Fever (ASF), Classical Swine Fever (CSF), and Foot and Mouth Disease (FMD), along with the zoonotic threats, Rift Valley Fever (RVF), Japanese Encephalitis (JE), Nipah virus, and Ebola virus. Any of these and innumerable other FADs could ravage America's agricultural infrastructure, food supply, and economy if they hit the U.S. Furthermore, zoonotic FADs could devastate public health as well, and until NBAF is operational in 2022/23, there's no U.S. laboratory where livestock research can be conducted on Nipah and Ebola.

## **FOUNDATIONAL EFFORTS**

### **Defense of U.S. Agriculture and Food – Homeland Security Presidential Directive/HSPD-9<sup>4</sup>**

Delineating the federal role in bio/agrodefense post-09/11, President Bush issued Homeland Security Presidential Directive/HSPD-9, on January 30, 2004 to establish: *“a national policy to defend the agriculture and food system against terrorist attacks, major disasters, and other emergencies.”*<sup>4</sup> Along with a number of other systems vital to U.S. survival and prosperity, the agriculture and food sector was appropriately noted to be “critical infrastructure.”<sup>5</sup>

#### **HSPD-9 Roles and Responsibilities:**

A defined chain of command is critical to accomplish any national security mission. That's true for bio/agrodefense – defending the homeland agriculture and food system – just as it is for every other aspect of national defense. The leadership roles per HSPD-9 are as follows:

- ❑ **Secretary of Homeland Security** — As established in HSPD-7,<sup>6</sup> the Secretary of the Department of Homeland Security (DHS) “is responsible for coordinating the overall national effort to enhance the protection of critical infrastructure and key resources of the United States.”

---

<sup>4</sup> Homeland Security Presidential Directive/HSPD-9 – *Defense of United States Agriculture and Food*; Jan. 30, 2004

<sup>5</sup> As delineated in Section 1016(e) of the USA PATRIOT Act of 2001 [42 U.S.C. 5195c(e)]

<sup>6</sup> Homeland Security Presidential Directive/HSPD-7 – *Critical Infrastructure Identification, Prioritization, and Protection*, December 17, 2003

- ❑ **Secretaries of Agriculture, Health and Human Services and the Administrator of the Environmental Protection Agency** — The two Secretaries and the Administrator “will perform their responsibilities as Sector-Specific Agencies as delineated in HSPD-7.”<sup>7</sup>
  - For the U.S. Department of Agriculture (USDA), sector-specific responsibilities mean agriculture and food (meat, poultry, and egg products);<sup>7</sup>
  - For the Department of Health and Human Services (DHHS), it means public health, healthcare, and food (other than meat, poultry, and egg products);<sup>7</sup> and
  - For the Environmental Protection Agency, sector-specific means drinking water and water treatment systems.<sup>7</sup>

Thus, DHS was named to lead bio/agrodefense, with USDA, DHHS, and EPA supporting. Other departments and agencies also provide support with the HSPD-9 requirements that follow.

#### **HSPD-9 Requirements:**

- ❑ **“Awareness and Warning”<sup>8</sup>** — Knowing what’s happening over-the-horizon – beyond U.S. borders – is vital if America is to be prepared to confront emerging biological threats; if the U.S. is to respond quickly and decisively to defeat the threat.
  - HSPD-9 required the development of “robust, comprehensive, and fully coordinated surveillance and monitoring systems”<sup>8</sup> for diseases of animals, plants, wildlife and people along with threats to food and water quality. This system was to include nationwide diagnostic networks for “food, veterinary, plant health and water quality.”<sup>8</sup> The Department of the Interior (DOI), USDA, DHHS, EPA and other departments and agencies would develop the systems.
  - HSPD-9 required “intelligence operations and analysis capabilities focusing on agriculture, food, and water sectors.”<sup>8</sup> This would be led by the Attorney General/ Department of Justice (DOJ), DHS, and the Central Intelligence Agency (CIA) in coordination with USDA, DHHS, and EPA.
  - HSPD-9 required the creation of “a new biological threat awareness capacity that will enhance detection and characterization of an attack.”<sup>8</sup> DHS was to coordinate with USDA, DHHS, EPA and other departments and agencies to carry this out.
- ❑ **“Vulnerability Assessments”<sup>8</sup>** — HSPD-9 mandated “vulnerability assessments of the agriculture and food sectors”<sup>8</sup> and the identification of “requirements for the National Infrastructure Protection Plan”<sup>8</sup> that was to be updated every 2 years. The assessments would be done by USDA, DHHS, and DHS, with DHS responsible for the plan every 2 years.
- ❑ **“Mitigation Strategies”<sup>8</sup>** — HSPD-9 required:
  - The prioritization, development, and implementation of “mitigation strategies to protect vulnerable critical nodes of production or processing from the introduction of

---

<sup>7</sup> Homeland Security Presidential Directive/HSPD-7 – *Critical Infrastructure Identification, Prioritization, and Protection*, December 17, 2003

<sup>8</sup> Homeland Security Presidential Directive/HSPD-9 – *Defense of United States Agriculture and Food*; Jan. 30, 2004

diseases, pests, or poisonous agents.”<sup>9</sup> This was a responsibility of DHS and DOJ working with USDA, DHHS, EPA, and other departments and agencies.

- The development of “common screening and inspection procedures for agriculture and food items entering the United States”<sup>9</sup> and maximizing “effective domestic inspection activities for food items within the United States.”<sup>9</sup> This was a responsibility of USDA, DHHS, and DHS.

❑ **“Response Planning and Recovery”**<sup>9</sup> — HSPD-9 required:

- Ensuring “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.”<sup>9</sup> This was a responsibility of DHS in coordination with USDA, DHHS, DOJ, and EPA.
- Developing “a coordinated agriculture and food-specific standardized response plan that will be integrated into the National Response Plan.”<sup>9</sup> This was a responsibility of DHS in coordination with USDA, DHHS, DOJ and EPA.
- Enhancing “recovery systems that are able to stabilize agriculture production, the food supply, and the economy, rapidly remove and effectively dispose of contaminated agriculture and food products or infected plants and animals, and decontaminate premises.”<sup>9</sup> This was a responsibility of USDA and DHHS in coordination with DHS and EPA.
- Making “recommendations to the Homeland Security Council, within 120 days of the date of this directive, for the use of existing, and the creation of new, financial risk management tools encouraging self-protection for agriculture and food enterprises vulnerable to losses due to terrorism.”<sup>9</sup> This was a responsibility of USDA.
- Working with State and local governments and the private sector to develop:
  - “A National Veterinary Stockpile (NVS) containing sufficient amounts of animal vaccine, antiviral, or therapeutic products to appropriately respond to the most damaging animal diseases affecting human health and the economy and that will be capable of deployment within 24 hours of an outbreak.”<sup>9</sup>
  - “A National Plant Disease Recovery System (NPDRS) capable of responding to a high-consequence plant disease with pest control measures and the use of resistant seed varieties within a single growing season to sustain a reasonable level of production for economically important crops.”<sup>9</sup>

Both were requirements of USDA in coordination with DHS and in consultation with DHHS and EPA.

❑ **“Outreach and Professional Development”**<sup>9</sup> — HSPD-9 specified that the Secretaries shall:

- Work “with appropriate private sector entities to establish an effective information sharing and analysis mechanism for agriculture and food.”<sup>9</sup> This was a responsibility of DHS in coordination with USDA, DHHS and other appropriate departments and agencies.

---

<sup>9</sup> Homeland Security Presidential Directive/HSPD-9 – *Defense of United States Agriculture and Food*; Jan. 30, 2004

- Support “the development of and promote higher education programs for the protection of animal, plant, and public health.”<sup>10</sup> This was a responsibility of USDA and DHHS in consultation with DHS and the Department of Education (ED).
- Support the development of and promotion of “a higher education program to address protection of the food supply.”<sup>10</sup> This was a responsibility of USDA and DHHS in consultation with DHS and ED.
- Establish “opportunities for professional development and specialized training in agriculture and food protection, such as internships, fellowships, and other post-graduate opportunities that provide for homeland security professional workforce needs.”<sup>10</sup> This was a responsibility of USDA and DHHS.

❑ **“Research and Development”<sup>10</sup>** — HSPD-9 required:

- Accelerating and expanding “development of current and new countermeasures against the intentional introduction or natural occurrence of catastrophic animal, plant, and zoonotic diseases.”<sup>10</sup> This was a responsibility of DHS, USDA, DHHS, EPA and other appropriate departments and agencies in consultation with the Director of the Office of Science and Technology Policy (OSTP), with DHS coordinating the efforts.
- Developing “a plan to provide safe, secure, and state-of-the-art agriculture biocontainment laboratories that research and develop diagnostic capabilities for foreign animal and zoonotic diseases.”<sup>10</sup> This was a responsibility of USDA and DHS; *DHS constructing the National Bio and Agro-defense Facility (NBAF) meets this requirement.*
- Establishing “university-based centers of excellence in agriculture and food security.”<sup>10</sup> This was a responsibility of DHS in consultation with USDA and DHHS, but *funding for these centers has been terminated by DHS.*

The summary above does not include all the details in HSPD-9, but it does note departments and agencies responsible for each requirement. For almost every task, there were multiple departments and agencies involved which would make every task very complex. Nonetheless, all six requirements are vitally important to protecting U.S. agriculture and food.

### **Separating HSPD-9 from HSPD-10 – Bioterrorism for the 21<sup>st</sup> Century<sup>11</sup>**

As already noted, HSPD-9 – protecting agriculture and food from bioterrorism – was signed on January 30, 2004, while HSPD-10 – protecting people from bioterrorism – was finalized on April 28, 2004. There were likely sound reasons in 2004 to separate bioweapon threats to people from bioweapon threats to agriculture and food, but the result of that over the past decade and a half is that agriculture and food have received minimal biodefense attention or funding.

That’s surprising for at least two reasons: (1) Essentially every country that ever developed an offensive bioweapons program, including the U.S., created weapons targeting agriculture as well as people; and (2) almost every pandemic threat today is a zoonotic disease that can spread from

---

<sup>10</sup> Homeland Security Presidential Directive/HSPD-9 – *Defense of United States Agriculture and Food*; Jan. 30, 2004

<sup>11</sup> Homeland Security Presidential Directive/HSPD-10 – *Biodefense for the 21<sup>st</sup> Century*, April 28, 2004

animals to people. As a result, significant federal funding should be focused on confronting and stopping these threats in the animal host; that's not being done.

The only statement regarding agriculture and food in HSPD-10 referenced “new programs to secure and defend our agriculture and food systems against biological contamination.”<sup>12</sup> That's basically delineating a food safety role as a small part of HSPD-10. And, in fact, it was HSPD-7 that outlined homeland security obligations regarding food safety.<sup>13</sup> Responsibilities for meat, poultry, and egg products went to USDA; the agency responsible for inspecting those processing activities. Inspections for everything other than meat, poultry, and egg products is the responsibility of the Food and Drug Administration (FDA); a component within DHHS.

That might actually explain some of the disparities between HSPD-9 and HSPD-10, e.g., why HSPD-10 specifies “increased funding for bioterrorism research within DHHS by thirty-fold”<sup>12</sup> to protect human health, while USDA got nothing for bio/agroterrorism research within HSPD-9 to protect plant and animal health. Food was delineated by food processing responsibilities for USDA and DHHS/FDA, with little focus on safeguarding agriculture pre-harvest activities, i.e., protecting food crops or food animals from infectious diseases or bioweapons. Thus, USDA and DHHS have nearly equal roles in HSPD-9 (with DHS leading), while DHHS has an appropriately dominant role in HSPD-10 (also with DHS leading) with USDA having a minor food safety role.

Infectious diseases and biological weapons target living things — people, plants, and animals. As noted above, bioweapon programs commonly included pathogens of plants and animals, not just people. Why? Because food-deprived or starving people are generally less fit to fight and more likely to surrender.

Evidently, *al Qaeda* knew this, since their bioweapons list included 10 pathogens targeting animals and plants, and only 6 targeting people.

### **U.S. Bio/Agrodefense Status Today**

U.S. biodefense efforts have been lacking for decades as pointed out in multiple reports; first by the Commission on the Prevention of Weapons of Mass Destruction (WMD) Proliferation and Terrorism,<sup>14,15</sup> and then by the bipartisan Blue Ribbon Study Panel on Biodefense.<sup>16,17</sup> The Commission looked at all WMD threats, and in their 2010 report card,<sup>14</sup> biological risks received a failing grade; an “F.” All four citations concentrated on biothreats to people, although the Blue

---

<sup>12</sup> Homeland Security Presidential Directive/HSPD-10 – *Biodefense for the 21<sup>st</sup> Century*, April 28, 2004

<sup>13</sup> Homeland Security Presidential Directive/HSPD-7 – *Critical Infrastructure Identification, Prioritization, and Protection*, December 17, 2003

<sup>14</sup> *The Clock is Ticking: A Progress Report on America's Preparedness to Prevent Weapons of Mass Destruction Proliferation and Terrorism*; Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism, October 21, 2009

<sup>15</sup> *Prevention of WMD Proliferation and Terrorism Report Card*; Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism, January, 2010

<sup>16</sup> *A National Blueprint for Biodefense: Leadership and Major Reform Needed to Optimize Efforts*; A Bipartisan Report of the Blue Ribbon Study Panel on Biodefense, October 2015

<sup>17</sup> *Biodefense Indicators: One Year Later, Events Outpacing Federal Efforts to Defend the Nation*; A Bipartisan Report of the Blue Ribbon Study Panel on Biodefense, December 2016

Ribbon reports referenced threats to animals, primarily from a “One Health” perspective. The 2015 Blue Ribbon<sup>18</sup> report highlighted thirty-three major shortcomings requiring urgent attention by Washington, DC policy makers. The top three most problematic were: (1) no national leader; (2) no strategic plan; and (3) no dedicated budget. Unfortunately, none of these shortcomings have yet been corrected.

Since few elements dealt with agriculture, K-State raised the bio/agrodefense issue with Blue Ribbon Panel members. That led to a Panel hearing on the K-State campus on January 26, 2017. The outcome of that was a special focus report entitled, “Defense of Animal Agriculture.”<sup>19</sup> Since Senator Lieberman will be covering Blue Ribbon reports, the only other issue that should be noted from the hearing at K-State is that defense of plant agriculture was discussed as well. It’s our understanding those threats will be addressed in a separate report.

### **Bio/Agrodefense Focus at K-State**

As the Committee knows, protecting U.S. agriculture is a mission of America’s land-grant universities; that began in 1862 when President Lincoln signed the Morrill Act. As someone relatively new to land-grant administration – but someone with a lifelong commitment to national defense – I’m convinced that the nation’s land-grant universities can and should play a significant role in U.S. bio/agrodefense. These institutions participate in protecting agriculture and food in their states each and every day.

Thus, we would encourage the Committee to integrate the land-grant universities into whatever solutions are developed. K-State stands ready to participate on the national team and lead when asked or when necessary. Protecting America’s agriculture and food infrastructure is too important not to.

K-State is not new to this realm. Back in 1999 with encouragement from the Chairman of this Committee, K-State developed a 100-page “Homeland Defense Food Safety, Security, and Emergency Preparedness Program”<sup>20</sup> that detailed how to protect America’s food crops, food animals, and food supply from biothreats. Later that year, K-State’s President Jon Wefald testified before the U.S. Senate’s Emerging Threats Subcommittee regarding the “Agricultural Biological Weapons Threat”<sup>21</sup> facing America. That Senate subcommittee was also chaired by Kansas Senator Pat Roberts.

The “Big Purple Book,”<sup>20</sup> as the 1999 program became known, documented the need for a biocontainment facility capable of conducting R&D on biothreats to food crops, food animals, and the food supply. Prior to September 11<sup>th</sup> and the anthrax attacks in 2001, little traction was

---

<sup>18</sup> *A National Blueprint for Biodefense: Leadership and Major Reform Needed to Optimize Efforts*; A Bipartisan Report of the Blue Ribbon Study Panel on Biodefense, October 2015

<sup>19</sup> *Special Focus: Defense of Animal Agriculture*; Bipartisan Report of the Blue Ribbon Study Panel on Biodefense, October 2015

<sup>20</sup> *Homeland Defense Food Safety, Security, and Emergency Preparedness Program*, March 22, 1999. See: <http://www.k-state.edu/nbaf/documents/1999-Homeland-Defense-Program.pdf>

<sup>21</sup> *Agricultural Biological Weapons Threat*, October 27, 1999. See: <http://www.k-state.edu/nbaf/documents/1999-US-Senate-Testimony.pdf>

gained for the need to build it. Post-09/11/2001, state and federal funding was obtained, and the Biosecurity Research Institute (BRI) at Pat Roberts Hall (PRH) became a reality.

The BRI/PRH is located immediately adjacent to the NBAF site and it includes five BSL-3Ag rooms that can be configured for research with cattle, pigs, sheep, goats and poultry. Work has been done on numerous species to date, including white-tailed deer in 2017 to determine their susceptibility to RVF. In addition to BSL-3Ag labs, the BRI/PRH has dedicated BSL-3 space for conducting research on crop and food pathogens. Wheat Blast R&D has been ongoing since 2009 and food safety research began soon thereafter. The latter included studies for the Army whereby eight 1-ton grinds of hamburger were done in October 2011 to validate whether food pathogens could be detected at the end of a commercial process. The breadth of food-related biocontainment R&D conducted under one roof makes the BRI/PRH unique-in-the-world.

K-State jump-started NBAF research in the BRI/PRH on RVF in 2013, JE in 2014, CSF in 2015, and ASF in 2016. We were able to do this because the State of Kansas agreed to fund \$35 million for NBAF research in the BRI/PRH as part of our “best and final offer” for NBAF during the site selection competition. Research and development (R&D) continues on all four of these FADs, but the Kansas funding commitment will end in FY2019 when the last \$5 million is appropriated. The majority of the research is conducted by K-State faculty, staff and students, but collaborators from the U.S. Department of Agriculture’s (USDA’s) Center for Grain and Animal Health Research (CGAHR) in Manhattan participate on some of the NBAF-related FAD projects. Moreover, CGAHR conducts other USDA BSL-3/3Ag biocontainment research in K-State’s BRI/PRH as well. Going forward, federal support is needed for R&D on RVF, JE, CSF, and ASF to help mitigate these threats to U.S. animal health and public health.

Until NBAF is fully operational in 2022/23, USDA has no biocontainment facilities where R&D can be conducted on zoonotic FADs. Moreover, DHS stopped funding CSF and ASF research in 2017 at the Plum Island Animal Disease Center (PIADC); an antiquated facility unsafe for work with zoonotic diseases. Consequently, training the NBAF R&D workforce is highly reliant on the BRI/PRH until the new DHS facility becomes operational.

### **PROPOSED PATH FORWARD**

The importance of implementing the requirements outlined in HSPD-9<sup>22</sup> to safeguarding American agriculture in a globalized world cannot be overstated. They are all critically important, but strides made to implement them in the early years have eroded today.

K-State believes that statutory authorization — with clearly delineated and enforceable accountability — along with the appropriation of funds to support the following key provisions in HSPD-9 will advance this crucial humanitarian and economic mission.

- 1) Enhance Intelligence Operations and Analysis Capabilities** — Leverage “awareness and warning”<sup>22</sup> intelligence information to conduct federal, state, and local agriculture and food “vulnerability assessments.”<sup>22</sup> Advanced warning of over-the-horizon biothreats is vital, but

---

<sup>22</sup> Homeland Security Presidential Directive/HSPD-9 – *Defense of United States Agriculture and Food*; Jan. 30, 2004



today, the U.S. is often minimally aware and insufficiently warned. One reason appears to be insufficient numbers of bio/agrodefense subject matter experts (SMEs) – veterinarians, animal scientists, crop scientists, plant pathologists, etc. – with high-level security clearances to assess classified intelligence.

- a) **Security Clearances** — Increase the number of food crop, food animal, and food supply SMEs with high-level security clearances (TS-SCI) to monitor bio/agrodefense threats worldwide.
  - b) **Sensitive Compartmented Information Facilities (SCIFs)** — Increase the number of SCIFs with secure communications that have agriculture/food SME analysts and/or cleared SME advisors with TS-SCI clearances.
  - c) **USDA Clearances** — Increase the number of USDA personnel with TS-SCI clearances. It's unknown how many bio/agrodefense SMEs there are within the intelligence agencies, but there are nowhere near enough within USDA. Conversations in 2016 with the USDA's chief scientist and a USDA intelligence analyst confirmed their frustrations with an inability to convey critical classified information within USDA to make it actionable. This creates huge federal impediments to safeguarding agriculture, particularly when DHS stopped meeting their HSPD-9 responsibilities in 2016/17. Undertaking "vulnerability assessments,"<sup>23</sup> developing "mitigation strategies,"<sup>23</sup> conducting "response planning and recovery,"<sup>23</sup> and defining time-critical "research and development"<sup>23</sup> strategies are virtually impossible when there is limited awareness and no warning. This must be rectified immediately.
  - d) **Intelligence Fusion Centers (IFCs)** — Increase the number of state IFCs with agriculture and food SMEs with TS-SCI clearances. The Kansas IFC (KIFC) appears to be the only such center of over 70 nationwide that has a biothreat team with cleared SMEs capable of assessing the full range of biohazards to food crops, food animals, the food supply, and people. These include a DVM and PhDs from K-State and MDs from the University of Kansas Medical Center as well as SMEs from multiple state agencies. These SMEs allow the KIFC to assess global intelligence for the purpose of preventing bioterrorism attacks and preparing for natural infectious disease events emerging globally. Thus, the KIFC focuses "left of boom" (prior to an attack or outbreak) rather than "right of boom" (after the event) like other fusion centers. This model should be emulated beyond Kansas, because it allows state-specific planning with regard to "vulnerability assessments, mitigation strategies, and response planning and recovery."<sup>23</sup>
- 2) **Emerging FAD Threats** — Exploit "awareness and warning"<sup>23</sup> intelligence information regarding newly emerging biothreats to establish bio/agrodefense "mitigation strategies"<sup>23</sup> at USDA CGAHR prior to NBAF becoming operational and fund "research and development"<sup>23</sup> in the BRI/PRH.

- 3) **Zoonotic Animal Disease Research** — Establish federal threat “mitigation strategies”<sup>24</sup> for zoonotic FADs at USDA CGAHR prior to NBAF becoming operational and fund RVF and JE “research and development”<sup>24</sup> in the BRI/PRH.
- 4) **Non-Zoonotic Foreign Animal Disease Research** — Expedite federal threat “mitigation strategies”<sup>24</sup> for non-zoonotic FADs by moving the research portfolios for ASF and CSF from USDA PIADC to CGAHR and funding ASF and CSF “research and development”<sup>24</sup> in the BRI/PRH until NBAF becomes operational.
- 5) **Private-Sector Outreach** — Enhance private-sector “outreach and professional development”<sup>24</sup> by leveraging the nation’s land-grant universities that interact routinely with private-sector agriculture producers and food processors nationwide.

An implementation problem for HSPD-9 was the expectation that the federal government would be able “to establish an effective information sharing and analysis mechanism”<sup>24</sup> with private-sector agriculture producers and food processors. Having the federal government show up at the door is likely to be viewed with distrust and skepticism. In some instances, state government might be a somewhat better alternative, but this is an area where the nation’s land-grant universities could serve as the facilitators/trusted brokers.

- 6) **Higher Education Programs** — Support the development of higher education programs as called for in HSPD-9 “outreach and professional development.”<sup>24</sup>
  - a) **For Capacity Building** — “In veterinary medicine, public health, and agriculture.”<sup>24</sup>
  - b) **For Protection** — “Of the food supply.”<sup>24</sup>
- 7) **Surveillance Systems** — Increase support for “awareness and warning”<sup>24</sup> surveillance systems to provide early detection of U.S. disease outbreaks.
  - a) **For Food Animals** — the National Animal Health Laboratory Network (NAHLN)
  - b) **For Food Crops** — the National Plant Diagnostic Network (NPDN)
  - c) **For Wildlife** — Unknown
- 8) **Agriculture Response and Recovery** — Support agriculture/food “response planning and recovery”<sup>24</sup> systems for the purpose of reestablishing full operations following infectious disease outbreaks.
  - a) **For Food Animals** — By utilizing and expanding the USDA National Veterinary Stockpile (antigen bank) as called for in HSPD-9 “response planning and recovery”<sup>24</sup> and endorsed by livestock producer groups and animal health companies.
  - b) **For Food Crops** — By designing a National Plant Disease Recovery System as called for in HSPD-9 “response planning and recovery”<sup>24</sup> and endorsed by crop producer groups and related stakeholders.

- 9) FAD Advance Development and Manufacturing (ADM)** — Improve “response planning and recovery”<sup>25</sup> by creating FAD ADM capabilities for producing vaccines and other countermeasures against livestock-only and zoonotic FADs similar to ADM capabilities for human infectious diseases.
- 10) Screening/Inspecting Agriculture and Food Items** — Validate existing screening technology “mitigation strategies”<sup>25</sup> and develop new/improved technologies.
- 11) National Livestock Readiness Program (NLRP)** — Ensure DHS in standing up the NLRP to help meet the requirements of the FY2017 “Securing Agriculture and Food Act” (Public Law 114-328) in support of HSPD-9.<sup>25</sup>
- 12) National Biodefense Strategy (NBS)** — Confirm that the NBS – Section 1086, FY2017 National Defense Authorization Act (Public Law 114-328) – includes agriculture (animal health and plant health) and that bio/agrodefense components are adequate and implemented effectively.
- 13) Biodefense Leadership** — Support the Blue Ribbon Study Panel on Biodefense’s proposal to centralize bio/agrodefense leadership.

### **BIO/AGRODEFENSE BOTTOM LINE**

The bottom line today regarding bio/agrodefense is that “the clock is ticking”<sup>26</sup> as stressed by the WMD Commission back in 2009. Much must be done to safeguard American agriculture in a globalized world — the U.S. agriculture and food critical infrastructure is not well protected from potentially catastrophic biological events.

Bioterrorist attacks on America’s food crops and/or food animals could devastate the U.S. economy, and the global economy wouldn’t be far behind. America still feeds the world. Natural disease outbreaks could lead to similar outcomes.

Food shortages in the U.S. may not occur immediately, or ever, depending on the effectiveness of the attack or the magnitude of the outbreak. Nonetheless, there could still be hugely problematic outcomes for America and the world.

Well-conceived Presidential Directives have not gotten the job done; neither did the Patriot Act nor the Homeland Security Act that preceded the directives. Key components of American critical infrastructure – agriculture and food – are vulnerable to terrorist attacks with bioweapons and undeliberate infectious disease outbreaks, and the U.S. is unprepared to confront these threats.<sup>27</sup>

Congress must act before it’s too late.

---

<sup>25</sup> Homeland Security Presidential Directive/HSPD-9 – *Defense of United States Agriculture and Food*; Jan. 30, 2004

<sup>26</sup> *The Clock is Ticking: A Progress Report on America’s Preparedness to Prevent Weapons of Mass Destruction Proliferation and Terrorism*; Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism, October 21, 2009

<sup>27</sup> Bodin, Madeline; “U.S. Remains Unprepared for Agricultural Disease Outbreaks,” *Emergency Management*, November 13, 2017