

# Closing the Barn Door: Interagency Approaches to Reduce Agroterrorism Threats

*by David F. Grieco*

Despite billions of dollars spent in the U.S. on national defense, one key area has been historically overlooked.<sup>1</sup> In the twenty-first century, perhaps the greatest national security threat requiring careful interagency coordination is not in a distant land, but in actuality, quite local. It is a weaponization pathway so deadly that it has been described as more powerful than nuclear weapons, yet equally within the reach of first-world nations and terrorists alike.<sup>2</sup> The danger posed is terrorism aimed not directly at populations, troop concentrations, or buildings, but rather at the vast U.S. agricultural system that millions rely upon both domestically and internationally every day. The U.S. has started on the path of interagency cooperation to address and mitigate agroterrorism vulnerabilities. However, the question at hand is whether the interagency approach is sufficient to fortify this vulnerable sector, or whether this collective response will instead be too little too late.

## **Risk Areas and Target Factors**

At the highest levels, agricultural terrorism, commonly shortened to “agroterrorism,” reflects the deliberate use of biological or chemical means to depreciate, stunt, halt, or destroy an agricultural asset or set of assets. Agroterrorism is not defined by a specific size or the associated value of the damage inflicted; a single incident can be limited to a single herd or crop, or have, perhaps unintentionally, a national or even an international impact. While a single event would likely not shut down the U.S., the cumulative effects of multiple such events could instill severe buckling on the system, especially since the agricultural industry is the country’s largest employer, including direct and indirect food production employees.<sup>3</sup>

Agroterrorism, in most cases, is fundamentally an attack against livestock and crops. However, an attack need not be targeted at a farm; merely instilling fear and inducing panic in agriculturally-based economic centers, such as nearby processing and transportation facilities, could still constitute an attack and achieve similarly desired results.<sup>4</sup> Regardless of the source or intention behind the

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introduction of a pathogen or contaminant, the large number of potential points of introduction means that no **one** government agency will be able to provide a suite of comprehensive countermeasures and systems for defense.

The three great vulnerabilities present in the American agricultural system are the lack of security measures, livestock susceptibility to foreign animal diseases (FAD), and the frequent, condensed transportation of livestock.<sup>5</sup> An area of particular concern is the protection of livestock, which becomes particularly difficult when considering open pastures, especially those found in the Southwest, where no physical security exists to separate animals from potential perpetrators.<sup>6</sup> Crop susceptibilities add another dimension for consideration in that the pathways for infection increase to seven different categories including fungi, bacteria, viruses, viroids, nematodes, protozoa, and parasitic plants.<sup>7</sup> An interagency effort known as the Strategic Partnership Program Agroterrorism (SPPA) takes cognizant of the fact that human intervention at multiple points across the supply chain, especially at processing and storage facilities, can pose an additional concern if access to these areas is not closely controlled.<sup>8</sup> Moreover, through contamination of seed stock, a would-be agroterrorist could indirectly infiltrate a farm's most precious commodities without ever stepping foot on the farm, bypassing physical security features even if they have been installed.

Regardless of the method of introduction of a pathogen, and whether it is directed against livestock or crops, an even larger and more fundamental issue exists. Determining what exactly comprises America's agroterrorism threats becomes significantly more complex as the result of insufficient interagency coordination. The Department of Agriculture (USDA)/Department of Homeland Security's Animal and Plant Health Inspection Service (APHIS) and the Center for Disease Control

(CDC) have different, only partially overlapping lists of threat agents.<sup>9</sup> The lack of coordination among different agencies greatly complicates the cross-referencing task when assessing agricultural risks and threats at the ground level of local farmers.<sup>10</sup>

Another significant interagency challenge pertains to the question of how a response to an agroterrorism event would be funded. The U.S. government does not currently have lines of funding appropriated to pay for the necessary response mechanisms.<sup>11</sup> Even within the existing umbrella for biological defense, including the aptly named Biological Warfare Defense Program that is managed by the Defense Advanced Research Projects Agency (DARPA) under the Department of Defense (DoD), the maintenance of consistent funding levels for such response activities is uncertain.

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In a contingency operation for rapid response payments, funding would likely be reprogrammed from the Biological Warfare Defense Program portfolio due to its similar scope. Despite being an appropriated program within the Congressional budget process, there is not a level of consistency or reliability; funding has decreased dramatically from an explosion in funding at \$164 million in fiscal year (FY) 09 to \$30.4 million and \$19.2 million in FY12 and FY13 respectively.<sup>12</sup> The single greatest reduction observed was \$41.3 million in FY10, demonstrating that the budget could vary as much as 75 percent within one year.<sup>13</sup> As a result, funding would need to be rapidly scrambled from otherwise non-appropriated

funds to make appropriate disaster payments, which could be difficult to assemble in the chaotic aftermath following an incident.

Depending on the manner in which an agroterrorism event is imagined or constructed for hypothetical scenarios, the actual risk present in the American agricultural system varies significantly. Through analysis of historical vignettes, the CDC has expressed confidence that an agroterrorism risk does, in fact, exist, but that it is almost solely limited to livestock. The CDC also acknowledges that crops also face a risk, but assessed that this

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risk is significantly less probable than an attack against animals; thus, prioritization has left plant pathogens largely unaddressed.<sup>14</sup> Fortunately, this is not a view held universally across the U.S. government, as others have also identified that presently an entire season’s worth of crops could be ruined through either pathogens or toxins.<sup>15</sup> Undetected until too late, a simple biological pathogen could devastate a great portion of crops with deadly rapidity. Unless these vulnerabilities, including contamination of feed and animal susceptibility to FADs, are addressed, the U.S. will remain vulnerable to future agricultural emergencies that cannot be easily controlled.

### **Interagency Coordination and Response**

In light of the risk posed by agroterrorism, the U.S. government has begun to prepare

countermeasures and defenses. Efforts to address agroterrorism increased significantly following the creation of the Department of Homeland Security (DHS) in 2002. At first, agricultural defense funding was heavily aligned toward APHIS, then a part of USDA. Prior to APHIS’s realignment under the DHS, annual funding for APHIS constituted upwards of 74 percent of USDA’s budget, highlighting the heavy emphasis on the service for detection, prevention, and containment.<sup>16</sup> In addition to surveillance and inspection efforts conducted by APHIS, USDA also turned to the U.S. Army in its attempts to address agroterrorism. USDA’s connection to the Army is not as clear as it may appear to the casual observer, as the purpose of the partnership is not to provide medical treatments or products for soldiers following an agroterrorism event, but instead to use existing Army laboratory facilities to achieve a potential synergistic effect between USDA and U.S. Army research goals. Specifically, the USDA has turned to the Biosafety Level-3 (BSL-3) facilities located at Fort Detrick in Frederick, MD, to continue research on select agents of interest, focusing on efforts related to counterterrorism and preparedness operations.<sup>17</sup>

Among the largest—if still not completely adequate—aspects of the government response to agroterrorism are the laws that have been implemented to create a preventive screen to hopefully close avenues through which agroterrorism attacks can occur. In the aftermath of the September 2001 Amerithrax incidents, President George W. Bush signed into law a series of efforts to cap the growing biological threat. Known colloquially as the “Public Health Security and Bioterrorism Preparedness and Response Act of 2002,” the law established important protocols for increasing defenses against wide-encompassing areas of the homeland. While this law consists of five sections, only two of them apply to themes relevant to agroterrorism per se; the others

address pathogen containment and water safety.

To hedge against the possibility of pathogens from abroad entering the U.S. through a shipment, the law includes a provision that authorizes the withholding of suspect foods for 20 to 30 days prior to importation.<sup>18</sup> A supplemental effort, implemented to prevent pathogen introduction and assist in inspections at a source of control, has been the introduction of APHIS personnel into more than 27 countries to conduct screening prior to entry at American ports.<sup>19</sup> Two significant limitations are associated with this withholding. First, there must be credible evidence to support the case for the withholding. Second, this is a limited tool intended for preventing foodborne disasters. In order to successfully intercept questionable foods, there must be strong evidence from the intelligence community, and more importantly, timely transmission of this information to the Food and Drug Administration (FDA), which would carry out the withholding.

Even with this legislation firmly in place, loopholes exist through which pathogens can still be introduced into foods. Despite the scope of the legislation, which accords higher precedence to pharmaceuticals than food, there is a mandatory registration process for both foreign and domestic food processing centers, establishing a baseline for food surveillance efforts.<sup>20</sup> The flaw in this approach is that it still presents vulnerability, as farms are not registered in a similar manner. The target in this respect is to combat foreign pathogen threats, which presumes that overseas farms and processing plants would be the intended targets of agroterrorists. This does lend some credence if one believes that international destinations are the primary targets of terrorist interest, but the argument does not hold up sufficiently. Without insider knowledge, it would be nearly impossible for terrorists abroad planning to commit an act of agricultural terrorism to pinpoint which shipments are destined for the

U.S. unless they are already packaged and marked as such. The paradox thus created is that products that are clearly labeled and packaged would be prone to screening by APHIS and thus the danger likely mitigated, while those unpackaged materials available for adulteration would not necessarily be destined for shipment to the U.S. If one accepts this argument, the legislation holds more validity, but the risk then shifts to the efficiency of the command chain within APHIS and the intelligence community. However, there is no evidence that there is close coordination between these two communities, creating many opportunities through which agroterrorism threats may slip by.

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Beyond pre-importation withholding, the typical timeframe for acceptance upon arrival at an American port is only eight hours; information regarding suspect shipments as determined by the FDA must additionally flow through state and local levels before reaching APHIS personnel, truly limiting the timeframe of opportunity in which to react to an agroterrorist attack.<sup>21</sup> The efficiency needed to achieve significant results within this model becomes nearly impossible to achieve realistically, thus calling into question the likelihood of the government successfully preventing any dangerous shipments. In this example, the well-intentioned effort to respect state jurisdictions falls short, and the muddling through interagency efforts complicates the effort beyond a workable level. Either the U.S. has not received a shipment in which the provisions of the “Bioterrorism and Preparedness Act” have faced a true test, or shipments have not been a target of agroterrorists. Regardless of the case,

the legislation has provided essentially a null impact on the agrodefense front.

Complementary and supportive to the “Bioterrorism and Preparedness Act,” a series of Homeland Security Presidential Directives, or HSPDs, were initiated to provide further directives and guidance to the DHS as it was hurriedly created following the 9/11 attacks. The first of these HSPDs with direct application to agricultural defenses is “HSPD 5: Management of Domestic Incidents,” issued on February 28, 2003, which mandated the creation of the

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National Incident Management System (NIMS) as a unified response system following any type of terrorist attack. It designates DHS as the leading activity to oversee and supersede control as incidents progress from a state/local to the national level.<sup>22</sup> The management structure within NIMS theoretically flows in a manner to facilitate a logical and regulated response to crisis incidents, both agriculturally-related and not. Under NIMS, state/local authorities are responsible for response until one of four situations occurs: federal assistance is requested, state/local authorities are overwhelmed in the response effort, an incident has progressed to an interagency/multiagency level, or DHS has been tasked by the President to provide a response.<sup>23</sup> NIMS and a second system, the Incident Command System (ICS), work in tandem to provide a standardized method in the hierarchy and response patterns following a terrorist attack or other disaster;

these tools have been implemented within DHS, but also in other agency functions including USDA, APHIS, and the Federal Emergency Management Agency (FEMA).<sup>24</sup>

At the surface level, this may appear to be a brilliant demonstration of interagency adoption of policy using common resources; in actuality, the use is mandated across all federal agencies and departments for incident management.<sup>25</sup> In light of this, the actual functionality under the new system is debatable and appears to resemble that of a partially employed system not at full functionality. An incident on the magnitude of September 11, 2001, in a biological terrorism setting would likely challenge the system beyond levels at which it has been previously tested and could overwhelm the system altogether. Although NIMS does caveat its management structure and approach by stressing compatibility to achieve interoperability—which possibly alludes to a responsive system that adapts to different situations—the true gravity of the situation exposes greater issues.<sup>26</sup> Under a universal system in which training should be standardized to provide cohesiveness among the various responding groups, the above approach instead leaves many areas open to interpretation.

For example, although NIMS and ICS are meant to be standardized, response to an agroterrorism incident uses a modified ICS command structure.<sup>27</sup> Those unaware of the variation would be ill-equipped to fully understand the operational approach used in this situation. Similarly, the manpower allocated for agroterrorism response is also greatly expanded beyond normal NIMS operations, calling upon first responders to create and maintain security zones to minimize the access of non-essential personnel to high-risk areas, similar to practices used in chemical decontamination protocols.<sup>28</sup> With large groups and different types of first responders present, those that have not been formally instructed on this structure variation

are highly likely to fall between understanding gaps, with the result being a disjointed response effort.

Following the release of HSPD-5, a second directive, released in 2003, addressed aspects of agriculture protection. “HSPD-7: Critical Infrastructure Identification, Prioritization, and Protection” is meant to identify both perceived risks to the economy and the security of the U.S. as assessed by DHS, interagency partners, and local officials.<sup>29</sup> HSPD-7 attempts to bring the best of different departments together in order to combat different areas of concern, including agriculture; but much like HSPD-9 that would follow, a general lack of understanding of the skill sets available undermines the intent of HSPD-7. The intended result of obtaining experts is instead met with an unequal set of professionals, none of whom have previously worked on the agroterrorism defense mission in this manner. Instead of collaborating with each other, local entities, and private industry to identify best practices as identified in the HSPD, a shallow series of mandatory after-action reports are the only deliverables that have been produced to date.<sup>30</sup> Proper engagement through consultation with experts to understand available capabilities by the President rather than broad grouping based on different department’s presumed specialties would work to greatly enhance the end products provided from such interagency efforts. As it is related to HSPD-7, tasking is divided up between DHS, USDA, and the Department of Health and Human Services (HHS), with USDA taking the lead on agriculture and food efforts, and HHS leading the remaining efforts.<sup>31</sup> DHS’s role in the effort, presumably that of an overarching lead, is not explicitly stated. Therefore, the likely result of the effort is the stove-piping of time and research efforts rather than a unified approach.

One report that appears to have captured the intent of HSPD-7 is a multi-year series

of assessments that occurred between 2005 and 2008 known as the Strategic Partnership Program Agroterrorism (SPPA). As identified in HSPD-7, DHS, USDA, FDA, and a number of local industry volunteers visited agricultural and food service sites across the country to assess agricultural risks and vulnerabilities.<sup>32</sup> The approach used appears to have been

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inconsistent, and there was a lack of continuity in the manner of sites selected for assessment. The underlying assessment tool for all the evaluations contained in the report was a newly-developed analysis instrument known as Criticality, Accessibility, Recuperability, Vulnerability, Effect, Recognizability, and Shock (CARVER+Shock).<sup>33</sup> The primary issue with SPPA, if it is indeed the envisioned deliverable from HSPD-7, is that extreme variability was identified within the different areas evaluated. Assuming that those who conducted the assessments were agricultural specialists, many of the recommendations exceed the knowledge presumable of generalists unfamiliar with the threats posed, and hence, not trained to develop appropriate agroterrorism countermeasures at their respective facilities. Attempting to cover an entire “farm-to-table” continuum for evaluation, the SPPA report covers eight risk areas within the supply chain: producers (plants), producers (animal), processors/manufacturers, restaurant/food service, retail, warehouse and logistics, and agriculture inputs and services.<sup>34</sup>

The overarching report structure emphasizes that substantial flaws existed in all eight of these areas and that tampering or introduction of a pathogen could be implemented at multiple points within each process area.

The third of the agriculturally-related HSPD documents, “HSPD 9: Defense of United States Agriculture and Food,” released in 2004, attempts to bring agriculture defenses to the forefront. By rescinding Presidential Decision Directive-63 (PDD-63) and identifying agriculture as a “critical node,” the 1998 Presidential HSPD-9 emphasized understanding agriculture risks and mandated new state-of-the-art biocontainment facilities.<sup>35</sup> HSPD-9 is an acknowledgement of the need to increase

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efforts to directly confront and address issues of terrorist attacks via interagency collaboration. In this effort, the Environmental Protection Agency (EPA), HHS, USDA, and the Secretary of the Interior are jointly engaged to mitigate existing vulnerabilities in order to protect the American food system.<sup>36</sup> Like earlier efforts under the “Bioterrorism and Preparedness Act,” follow-through and integration of the right elements are required to make such interagency functions a useful value-added; in the absence of this element, they remain a loosely assembled compilation of unlike parts, and the end result is fragmented or, worse, left unaddressed.

Efforts through the National Veterinary Stockpile (NVS) to combat livestock risks through vaccines and the associated National Plant Disease Recovery System (NPRDS) to

use more disease-resistant seed varieties for crops that are also contained within HSPD-9 appear well intentioned.<sup>37</sup> Yet without stewardship and an agency directly responsible for their management, they have largely fallen by the wayside within the USDA architecture as miscellaneous programs that are nearly nonexistent in the current budget. The intent would be that different groups of first responders would be able to function cohesively. This goal, however, requires that first responders have the same fundamental understanding of a response organization and the associated hierarchy. In light of the HSPD-5/7/9 series, farms still trail far behind with regard to biological defense. Analysis of available funding documentation reveals that there has been a much greater emphasis on civilian, non-agricultural aspects of biological defense, including the Strategic National Stockpile (SNS), State and Local Preparedness and Response Capability, and the National Hospital Preparedness Program (HPP).<sup>38</sup>

### **The Future of Combating Agroterrorism**

A survey of the available literature suggests that the recommendations provided by the National Research Council of the National Academies have created the baseline upon which all agroterrorism defense efforts have sprouted. In their assessment, three policy recommendations were provided to the federal government: surveillance on a national level for biological agent incidents, establishment of doctrine for response to agroterrorism events, and emphasis on public and community education to assist in surveillance efforts to deter an attack.<sup>39</sup> Supplementing community education are further advocacy efforts to improve the existing training of first responders to improve their ability to assist in the identification of potential animal disease events or improve their response time in the instance

of an event.<sup>40</sup>

In spite of these hopeful signs, and given the country's great reliance on its farms and associated food infrastructure, it is especially puzzling that the overall progress in creating agricultural defenses has remained largely stagnant despite many efforts that have been initiated across the interagency. Of all of the efforts initiated, the SPPA efforts have spawned perhaps the most comprehensive and tangible progress toward meeting and addressing the agricultural terrorism threat. Even so, databases for best practices are spread across DHS's Homeland Security Information Network, USDA's FoodSHIELD, and the Federal Bureau of Investigation's Infragard database, among others.<sup>41</sup> Each advocates its respective database as a "one-stop-shop" for information, but with three independent databases, this statement is far from accurate.

What has been started within the U.S., both government-initiated and non-government initiated, to combat agroterrorism is unevenly distributed at best or dangerously chaotic at worst. That which becomes overly complex unfortunately becomes avoided and disregarded—the exact opposite of what the interagency should be doing with respect to agroterrorism. An underlying idea of "out of sight, out of mind" possibly contributes to this effort, with many leadership decisions vested in organizations far removed from agricultural communities.<sup>42</sup> The likely result is that agroterrorism defense will not receive the attention it appropriately deserves until after a critical asset has been struck. Until the current approach of interagency coordination for addressing agricultural threats is righted, the U.S. is poised on a very dangerous path, as the existing flaws appear ripe for exploitation. Only through substantial reworking and retooling can the system be remedied to provide adequate defenses before it is too late. **IAJ**

## NOTES

- 1 The views expressed herein are those of the author and do not necessarily reflect the official views of the U.S. government or any of its entities.
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- 16 Katz, p. 23.
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- 25 The White House, Office of the Press Secretary, HSPD-5, p. 4.
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- 27 Moats, p. 31.

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