

2007

Response is Local, Relief is Not: The Pervasive Impact of Agro Terrorism

Asha M. George

Follow this and additional works at: <https://scholarship.law.vanderbilt.edu/vjtl>



Part of the [Agriculture Law Commons](#), and the [National Security Law Commons](#)

Recommended Citation

Asha M. George, Response is Local, Relief is Not: The Pervasive Impact of Agro Terrorism, 40 *Vanderbilt Law Review* 1155 (2021)

Available at: <https://scholarship.law.vanderbilt.edu/vjtl/vol40/iss4/12>

This Article is brought to you for free and open access by Scholarship@Vanderbilt Law. It has been accepted for inclusion in Vanderbilt Journal of Transnational Law by an authorized editor of Scholarship@Vanderbilt Law. For more information, please contact mark.j.williams@vanderbilt.edu.

Response is Local, Relief is Not: The Pervasive Impact of Agro Terrorism

Asha M. George*

ABSTRACT

Agro terrorism is a threat facing the public today. National response systems are not yet able to perform efficiently and effectively to address this threat. Any locality can be targeted, and the immediate response will come from local entities, regardless of how adequately prepared they are to respond. Knowing that acts of agro terrorism are both expected and feasible today, we must alter our prevention, deterrence, preparedness, detection, response, attribution, recovery, and mitigation programs and base them on a better understanding of the threat. There are a number of things we can do in advance of agro terrorism, none of which is impossible or beyond our current means and abilities. Additionally, we must keep in mind that although our response to acts of agro terrorism will be local, these local efforts will take place in and be affected by the global agricultural context. The global community will, in fact, be the source of our relief. We must strive now to plan accordingly, and undertake the necessary diplomatic, political, and interpersonal activities well in advance of an act of agro terrorism.

* DrPH. At the time of the presentation of this article, Dr. Asha M. George was with DFI International. On May 7, 2007, Dr. George joined the professional staff of the Committee on Homeland Security for the U.S. House of Representatives, where she addresses public health issues in the homeland security context. Dr. George holds a Doctorate in Public Health from the University of Hawaii, a Master of Science in Public Health from the University of North Carolina at Chapel Hill, and a Bachelor of Arts from the Johns Hopkins University.

TABLE OF CONTENTS

I.	INTRODUCTION	1156
II.	UNDERSTANDING THE THREAT	1159
III.	PREVENTION	1160
IV.	DETERRENCE	1161
V.	PREPAREDNESS	1161
VI.	DETECTION	1164
VII.	ATTRIBUTION	1165
VIII.	RESPONSE	1166
IX.	RECOVERY	1168
X.	MITIGATION	1168
XI.	RECOMMENDATIONS FOR ACTION	1169

I. INTRODUCTION

Today, a wide variety of threats face the public, including, but not limited to, infectious diseases for which there are no known treatments, weaponized biological agents, suicide terrorism, agro terrorism, natural disasters, human-generated catastrophic accidents, and runaway inflation.¹ Although we can name many of these potential, current, and recurring threats, the national response systems in every country across the globe (including the United

1. See, e.g., Charles Perrow, *Organizationally Induced Catastrophes* (May 29, 2000), available at <http://www.isse.ucar.edu/extremes/papers/perrow.PDF> (discussing catastrophes originating from humans); Sarah Elizabeth Croco, *Dealing With the Biological Weapons Threat: Thinking Beyond Unilateral Action*, SWORDS AND PLOUGHSHARES (Spring 2001), available at http://www.acdis.uiuc.edu/research/S&Ps/2001-Sp/S&P_XIII/Croco.htm (discussing biological weapon threats); Rohan Gunaratna, *Suicide Terrorism: A Global Threat*, JANE'S, Oct. 20, 2000, http://www.janes.com/security/international_security/news/usscole/jir001020_1_n.shtml (discussing suicide terrorism); Daniel Sarewitz & Roger A. Pielke, Jr., *Rising Tide*, NEW REPUBLIC ONLINE, Jan. 17, 2005, http://sciencepolicy.colorado.edu/admin/publication_files/resource-1694-2005.01.pdf (discussing natural disasters); Chemical & Biological Weapons Resource Page, Agro-terrorism, <http://cns.miis.edu/research/cbw/agchron.htm> (last visited Sept. 16, 2007) (discussing potential agro-terrorism threats); James R. Cook, *The Inevitability of Runaway Inflation* (Aug. 2004), <http://news.goldseek.com/JamesCook/1092690620.php> (discussing runaway inflation); Press Release, Office of Sci. and Tech. Policy, The White House, Fact Sheet Addressing the Threat of Emerging Infectious Diseases (June 12, 1996), http://www.fas.org/irp/offdocs/pdd_ntsc7.htm (discussing infectious diseases with no cure).

States) are not yet able to perform efficiently and effectively enough to address them.² In the United States, huge amounts of funding have gone toward creating the Department of Homeland Security (DHS) and supporting homeland security and defense programs in other agencies.³ However, while non-federal governmental agencies, as well as nongovernmental and private-sector organizations collectively receive enormous sums of funding, these entities must split these allocations.⁴ Consequently, they have not yet received nearly enough to fully secure the areas for which they are responsible.⁵ These non-federal entities are acutely aware that events occur locally, in their jurisdictions, and that immediate responses must also come from local entities, regardless of how adequately prepared they are to respond.⁶

Any locality can be targeted. For example, terrorists could target the Jack Daniels distillery in Lynchberg, Tennessee, for any number of reasons, including destruction of the Jack Daniels brand as well as the liquor-oriented sector of the U.S. economy.⁷ One potential agent that could be introduced is *Acetobacter acetic*, which is used to create

2. See, e.g., Kevin Freking, *U.S. Struggles With Bioterror Defenses*, ASSOCIATED PRESS, Mar. 10, 2007, available at <http://abcnews.go.com/Politics/wireStory?id=2940751> (discussing the U.S. government's inability to show an improved preparation for handling bioterrorism threats, even after spending \$5 billion).

3. See Ivan Eland, The Independent Institute, *Security Spending Hikes: Real Improvements of Bureaucratic Largesse?*, (Feb. 5, 2002), <http://www.independent.org/newsroom/article.asp?id=1079> ("The centerpieces of President George W. Bush's 2003 budget are the \$48 billion increase in the defense budget (the largest increase in more than two decades) and the doubling of funding homeland security to \$38 billion.").

4. See, e.g., Anita Dancs, Security Policy Working Group, *Proteus Fund, Terrorism or All-Hazards? Broadening Homeland Security*, <http://www.proteusfund.org/spwg/pdfs/Terrorism%20Or%20All-Hazards.pdf> (last visited Sept. 23, 2007) (noting that the DHS provides funding to state and local governments as well as non-governmental programs such as the Assistance to Firefighters Program).

5. See Dan Eggen & Mary Beth Sheridan, *Anti-Terror Funding Cut in D.C. and New York*, WASH. POST, June 1, 2006, at A1 (noting the decrease in anti-terrorism funding to "prime terrorist target" city governments, stripping their ability to protect their citizens).

6. See generally James Jay Carafano & Richard Weitz, *Learning From Disaster: The Role of Federalism and the Importance of Grassroots Response*, BACKGROUNDERS, Mar. 21, 2006, available at http://www.heritage.org/Research/HomelandSecurity/upload/95417_1.pdf (advocating the promotion of "community-centric planning" and acknowledging the important role of local communities in disaster recovery).

7. See Mark L. Ostfield, Senior Advisor for Bioterrorism, Biodefense, and Health Security, *Food Defense: International Collaboration in a Critical Area of Biodefense*, Remarks to the European Institute: Transatlantic Dimensions of Biodefense Cooperation and Collaboration Event (Nov. 30, 2006), available at <http://www.state.gov/g/oes/rls/rm/2006/77206.htm> (stating that "there is a genuine terrorist threat to the global food supply, both at the production and processing stages" and noting that "the economic consequences could also be staggering").

vinegar and could throw off the taste of the liquor.⁸ Additionally, certain mutations to *Bacillus subtilis* cause the organism to become alcohol-resistant,⁹ and if introduced and ingested, will cause food poisoning.¹⁰ The intentional introduction of these microorganisms into vats or bottles of Jack Daniels whiskey would be considered an act of agro terrorism—an act that would not require the weaponization of these organisms or advanced laboratory techniques. The distillery in the locality of Lynchberg could be targeted, and the cases of illness would occur in localities where the contaminated liquor, both here in the United States and throughout the world, was ingested. Comprehensive immediate federal response would be impossible.

A spectrum of actions can be taken against all terrorist threats (see Figure 1): prevention, deterrence, preparedness, detection, response (including attribution), recovery, and mitigation.¹¹ These activities can occur both simultaneously and consecutively. In the latter case, we seek to prevent a terrorist act; if we cannot prevent it, we seek to deter the use of agents and weapons that could be used to engage in terrorism. If we cannot deter their use, we prepare for the act; once we have prepared for it, we must detect its occurrence. And once detected, we must respond to an incident, recover from it, attribute its occurrence to a particular actor or group, and mitigate

8. A. Gouby et al., *Acetobacter cibinongensis Bacteremia in Human*, 10 EMERGING INFECTIOUS DISEASES 784, 784 (2007), available at <http://www.cdc.gov/eid/content/13/5/pdfs/784.pdf>.

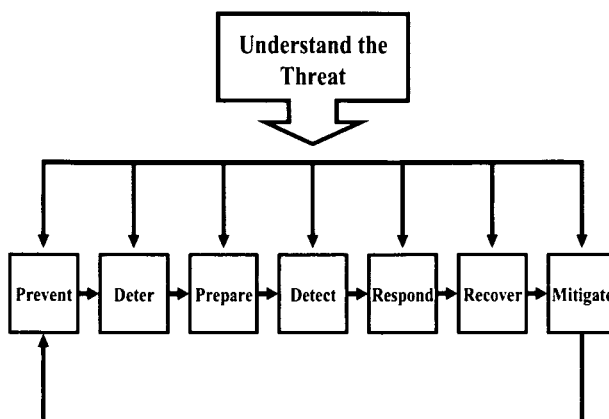
9. See Natalia Gottig et al., *The Bacillus subtilis SinR and RapA Developmental Regulators Are Responsible for Inhibition of Spore Development by Alcohol*, 187 J. OF BACTERIOLOGY 2662, 2666 (2005).

10. “*Bacillus licheniformis*, *Bacillus subtilis*, and *Bacillus pumilus* comprise the *subtilis* group, which has been associated with a range of clinical conditions, food spoilage such as ropy bread, and incidents of food-borne gastroenteritis.” See M. S. Salkinoja-Salonen et al., *Toxigenic Strains of Bacillus licheniformis Related to Food Poisoning*, 65(10) APPLIED & ENVTL. MICROBIOLOGY 4637 (1999), available at <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=91618>. In addition, “[m]ost food poisoning incidents attributed to *Bacillus* species are associated with *Bacillus cereus*, but the relevance of the *subtilis* group as food poisoning organisms is being increasingly recognized.” *Id.*

11. See COMM. ON SCI. AND TECH. FOR COUNTERING TERRORISM, MAKING THE NATION SAFER: THE ROLE OF SCIENCE AND TECHNOLOGY IN COUNTERING TERRORISM 277 (2002) [hereinafter MAKING THE NATION SAFER] (stating that “the suggested actions include support for all phases of countering terrorist threats—intelligence and surveillance, prevention, protection, interdiction, response and recovery, and attribution—as well as ways to improve our ability to perform analysis and invent new technologies.”); see also U.S. DEP’T OF HOMELAND SECURITY, NATIONAL RESPONSE PLAN 2 (2004) [hereinafter NATIONAL RESPONSE PLAN], available at http://www.dhs.gov/xlibrary/assets/NRP_FullText.pdf (referring to the “spectrum of activities including prevention, preparedness, response, and recovery” for management of domestic incidents).

the circumstances in an effort to reduce the impact if another event were to occur—with mitigation feeding back into prevention.¹² Understanding the threat is an enabler critical for the successful execution of every other action in this spectrum.

Figure 1. Spectrum of Actions Taken to Counter Terrorism



II. UNDERSTANDING THE THREAT

Al Qaeda (like many other groups) has knowledge of specific agents that could be used to contaminate the food supply.¹³ It is also recruiting personnel that could use that knowledge to grow microorganisms, develop dissemination mechanisms, and prepare to contaminate the food supply in other ways.¹⁴ Additionally, there are a number of food production methods and characteristics that render food vulnerable: mixing, short shelf-life, unrestricted access to

12. See MAKING THE NATION SAFER, *supra* note 11.

13. See Mark L. Ostfield, Senior Advisor for Bioterrorism, Biodefense, and Health Security, *Diplomacy to Advance Food Defense*, Remarks to 6th Global Food Safety and Quality Conference (Aug. 1, 2007), available at <http://www.state.gov/oes/rls/rm/2007/90069.htm>; see also Peter Chalk, *The U.S. Agricultural System: A Target for Al-Qaeda?*, TERRORISM MONITOR, Mar. 10, 2005, at 4, 6, available at http://www.jamestown.org/terrorism/news/uploads/ter_003_005.pdf (stating that “al-Qaeda theological leaders have specifically exhorted Islamists to use biological weapons in whatever manner possible against Americans” and that “agro-terrorism could certainly emerge as a favored secondary form of al-Qaeda”).

14. David Rising, *Al Qaeda in Iraq Beckons Nuclear Scientists*, BOSTON GLOBE, Sept. 29, 2006, http://www.boston.com/news/world/articles/2006/09/29/al_qaeda_in_iraq_beckons_nuclear_scientists/.

production facilities, and the use of large batches.¹⁵ Lastly, potential agents include naturally occurring, widely available, genetically modified, and resistance-induced organisms—as well as toxic and dangerous chemicals—that could infect, poison, and kill any element of the agricultural system (e.g., animals, food, and ingredients).¹⁶

III. PREVENTION

Preventing acts of agro terrorism from occurring begins with intelligence. However, the intelligence process is imperfect. Pieces of information are collected and added to others, then the information is analyzed periodically, and the products of these analyses are referred to as intelligence.¹⁷ Clearly, the validity of these intelligence products is based entirely on the quality of the bits of information initially collected. Far less information has been collected regarding biological and agro threats, and the intelligence produced has been far less comprehensive for these threats than for other types of agents.¹⁸ Additionally, the health and agricultural communities collect disease and outbreak information, and that information is poorly combined with intelligence generated by the intelligence community regarding the intent of U.S. enemies to engage in acts of biological or agro terrorism.¹⁹ The United States does not possess a comprehensive domestic medical intelligence program, and the medical intelligence activities the Department of Defense conducts are not domestic by law, but rather focused on specific situations overseas.²⁰ Furthermore, most intelligence efforts conducted by US

15. See Ostfield, *supra* note 7.

16. *Id.*

17. See generally UNITED STATES ARMY, FIELD MANUAL 34-3: INTELLIGENCE ANALYSIS 2-1 to 2-18 (1990), available at http://www.fas.org/irp/doddir/army/fm34_3.pdf (explaining the “Intelligence Cycle” as a continuous process which includes four distinct phases: directing, collecting, processing, and dissemination).

18. See JIM MONKE, CONGRESSIONAL RESEARCH SERV., AGROTERRORISM: THREATS AND PREPAREDNESS 8 (2004), available at <http://www.fas.org/irp/crs/RL32521.pdf> (stating that “agriculture and food production generally have received relatively less attention, or sometimes were overlooked, in counter-terrorism and homeland security” but also noting that “agriculture now is garnering more attention in the expanding field of terrorism studies and policies”).

19. See *id.* at 22 (noting that “agencies track and act upon bioterrorism information, but USDA needs to be informed also. USDA has limited experience working in the intelligence community, thus building effective partnerships remains a challenge.”).

20. See UNITED STATES ARMY, FIELD MANUAL 8-10-8: MEDICAL INTELLIGENCE IN A THEATER OF OPERATIONS 2-3 (1989).

agencies are not linked with each other, let alone with those of our foreign colleagues.²¹

IV. DETERRENCE

U.S. deterrence programs were designed to counter the proliferation of weapons that would be used for warfare—initially with countries that had created enormous stockpiles of weapons of catastrophic effect, and then later with smaller countries that were purchasing or otherwise obtaining smaller caches of weapons.²² However, after the dissolution of the former Soviet Union (FSU), deterrence efforts experienced decreases in funding and now occur only intermittently.²³ The United States has not yet adequately modified its deterrence policies to address smaller (especially non-state) actors.²⁴

V. PREPAREDNESS

Preparedness efforts for acts of agro terrorism in the United States vary according to (1) where diseases are endemic (such as brucellosis in locations such as Idaho, Texas, and Wyoming, where the disease occurs naturally),²⁵ (2) where outbreaks have occurred previously (such as the previous outbreak of tularemia in Martha's Vineyard),²⁶ and (3) where emergencies have arisen (like the recent *Escherichia coli* O517:H7 contamination of spinach in the United States).²⁷ It makes sense that the ongoing presence of a disease

21. See Andrew W. Green, *It's Mine: Why the US Community Does Not Share Information 1* (July 2005), available at <http://www.au.af.mil/au/awc/awcgate/saas/green.pdf> (unpublished research report, Air University School of Advanced Air and Space Studies) (on file with Air University).

22. See generally ALEXEI ARABATOV & VLADIMIR DVORKIN, *BEYOND NUCLEAR DETERRENCE: TRANSFORMING THE U.S.-RUSSIAN EQUATION* (2006).

23. See *id.* at 2 ("Since the end of the Cold War, nuclear deterrence between Russia and the United States has been receding into the background in terms of day-to-day foreign policy and official public relations.").

24. *Id.*

25. ANIMAL & PLANT HEALTH INSPECTION SERV., U.S. DEP'T OF AGRIC. [USDA], 2005 UNITED STATES ANIMAL HEALTH REPORT 47 (2005), available at http://www.aphis.usda.gov/publications/animal_health/content/printable_version/AHR_2005B_508.pdf.

26. Katherine A. Feldman et al., *Tularemia on Martha's Vineyard: Seroprevalence and Occupational Risk*, 9(3) EMERGING INFECTIOUS DISEASES 350 (2003), available at <http://www.cdc.gov/ncidod/EID/vol9no3/pdfs/02-0462.pdf>.

27. Ctrs. for Disease Control & Prevention, *Ongoing Multistate Outbreak of Escherichia coli serotype O157:H7 Infections Associated with Consumption of Fresh*

would cause a community to attain and maintain some minimum level of preparedness, and that the occasional outbreak or emergency would cause communities to become better prepared after weaknesses in responses are identified and strengthened. The preparedness described in each of these cases is generally not at the heightened level necessary for communities to respond adequately to acts of agro terrorism.²⁸ However, it is easier to build upon this preparedness than to have to start with nothing in place.

An act of agro terrorism will immediately change how food is distributed to affected localities and throughout the country and world. Because of the way that food production and distribution systems have evolved, most areas in the United States are not self-sufficient, meaning they could not grow their own food or distribute it to their own communities.²⁹ Undoubtedly, some areas could become self-sufficient—such as those areas where farming already occurs and where food has already come to distribution points—at least for a short while.³⁰ However, many individuals, families, organizations, and communities have difficulty with following recommendations to stock months of supplies in the event of a catastrophe, and numerous food-related systems use just-in-time stocking practices.³¹ Although this is a weakness that cannot be rectified quickly, it is important to note that there are certainly areas and points in the United States that could be self-sustaining, especially if they developed and exercised plans to do so.³²

Spinach—United States, MORTALITY & MORBIDITY WKLY. REP., Sept. 29, 2006, at 1–2, available at <http://www.cdc.gov/mmwr/pdf/wk/mm55d926.pdf>.

28. See JEFFREY LEVI ET AL., TRUST FOR AMERICA'S HELP, READY OR NOT: PROTECTING THE PUBLIC'S HEALTH FROM DISEASES, DISASTERS, AND BIOTERRORISM 2 (2006), available at <http://healthyamericans.org/reports/bioterror06/BioTerrorReport2006.pdf>, (noting that “five years after September 11, public health emergency preparedness is still not at an acceptable level”).

29. See, e.g., Jim Minick, *Do You Know Where That Egg Came From?*, in FINDING A CLEAR PATH (W. Va. Univ. Press 2005) (noting that “[a] 1983 study found that the average food item in the United States travels 1,300 miles before it reaches the dinner table” and that the “existing system already gears itself against buying locally”).

30. See Katherine McIntire Peters, *Officials Fear Terrorist Attack on U.S. Food Supply*, GOV'T EXECUTIVE, June 10, 2003, available at <http://www.govexec.com/dailyfed/0603/061003kp1.htm> (explaining that officials estimate that no major U.S. city has more than a seven-day supply of food).

31. Mimi Hall, *Most Not Prepared for Attack*, USA TODAY, Mar. 31, 2004, at 1A (examining how few Americans stockpile food and follow the government's emergency safety plans in preparation for a terrorist attack).

32. See, e.g., OFFICE OF EMERGENCY SERV., SANTA CRUZ COUNTY, NEIGHBORHOOD NETWORKING: SURVIVAL THROUGH SELF-SUFFICIENCY, <http://sccounty01.co.santa-cruz.ca.us/oes/communityplan.htm> (last visited Sept. 25, 2007) (detailing guidelines the Santa Cruz community could develop to facilitate self-sustainability and human survival in the face of a disaster).

The U.S. experience responding to Hurricane Katrina teaches a few lessons. First, it is important to plan at the state, territorial, tribal, and local levels as if the federal government will not be able to provide any resources in the event of a catastrophe, particularly if an act of terrorism occurs (which would demand that some federal resources be dedicated immediately to attribution of the act to a terrorist group), and especially if events occurring at the global level (including acts of terrorism, natural disasters, and warfare) also demand U.S. support.³³ Another plan should address state, territorial, tribal, and local activities that would occur if the federal government can provide what it pledges in federal plans (such as the National Response Plan).³⁴ For example, after Hurricane Katrina, it was unrealistic for Governor Blanco to request that the federal government send all it had with the expectation that the federal government would or could actually send the requested relief.³⁵ Greater familiarity at the local level with federal plans and allocated resources, even in the best-case scenario, would have reduced initial expectations as well as the amount of disappointment that resulted from their lack of fulfillment.³⁶

Finally, in a lesson more specific to the agro threat, when bringing in food from other countries, the State Department needs to work directly with the Department of Agriculture (USDA) to clear food, especially that containing beef. During the response to Hurricane Katrina, the State Department—upon request from DHS—erroneously allowed meals-ready-to-eat (MREs) containing beef to enter the country without clearance from USDA. Both Departments believed that the other had arranged clearance; the State Department assumed that DHS had already arranged for clearance by USDA, but

33. NATIONAL RESPONSE PLAN, *supra* note 11.

34. *See generally id.* at 1–14 (discussing the National Response Plan, its purpose, scope and applicability, and incident management activities, as well as the roles and responsibilities of state, local, and tribal governments, the federal government, nongovernmental and volunteer organizations, the private sector, and citizens).

35. *See* Press Release, La. Office of the Governor, Overview of Governor Kathleen Babineaux Blanco's Actions in Preparation for and Response to Hurricane Katrina (Dec. 2, 2005), available at <http://www.gov.state.la.us/index.cfm?md=newsroom&tmp=detail&articleID=1523> (noting that Governor Blanco informed President Bush that she “would need every resource possible from the federal government”).

36. *See* La. Office of the Governor, Governor Blanco Outraged by Federal Refusal to Accept Foreign Aid Following Hurricanes Katrina and Rita (Apr. 30, 2007), available at <http://www.gov.state.la.us/index.cfm?md=newsroom&tmp=detail&catID=3&articleID=2832&navID=27>.

DHS assumed State had already done so.³⁷ Observations and lessons learned from such disasters and exercises could be identified, collected from a number of repositories (such as the *Lessons Learned Information Sharing* system funded by DHS),³⁸ and incorporated into preparedness efforts now, in advance of an agro terrorist event.

VI. DETECTION

Countries throughout the world struggle with the ability to detect disease quickly. All health-data reporting systems are faulty, due to varying reporting requirements that are poorly consolidated even within small geographic units (such as states) and only somewhat linked to environmental detection systems—where such systems and technology even exist.³⁹ As a result, when agricultural incidents occur (such as the recent spinach contamination in the United States), illness and sometimes death are the main indicators of the problem. Obviously, these indicators emerge at a point in time beyond the stage at which detection of the disease agent could have precluded the illness.⁴⁰ Historically, both intentionally and naturally caused agro events have affected large numbers of people.⁴¹ For example, in 1984, the Rajneeshee religious group intentionally

37. Deputy Spokesperson for the State Department, Adam Ereli, admitted that MREs from the United Kingdom were distributed to Katrina victims without undergoing the required USDA inspection. Ereli indicated that members of the State Department were “not aware of” the regulatory restrictions at the time. See Transcript of Briefing, U.S. State Dep’t, Oct. 14, 2005, <http://www.globalsecurity.org/military/library/news/2005/10/mil-051014-usia04.htm> [hereinafter State Dep’t Briefing].

38. See Lessons Learned Information Sharing [LLIS], www.llis.gov (last visited Sept. 23, 2007) (defining LLIS as a “national network of Lessons Learned and Best Practices for emergency response providers and homeland security officials . . . designed to facilitate efforts to prevent, prepare for and respond to acts of terrorism and other incidents across all disciplines and communities throughout the U.S.”).

39. Fu-Chiang Tsui et al., *Technical Description of RODS: A Real-time Public Health Surveillance System*, 10(5) J. AM. MED. INFORMATICS ASS’N 399, 399–400 (2003), available at <http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=212776&blobtype=pdf>.

40. Press Release, U.S. Food & Drug Admin. [FDA], FDA Warning on Serious Foodborne E.coli O157:H7 Outbreak: One Death and Multiple Hospitalizations in Several States (Sept. 14, 2006), available at <http://www.fda.gov/bbs/topics/NEWS/2006/NEW01450.html>.

41. See, e.g., Ostfield, *supra* note 7 (mentioning an incident in 1996 and 1997 where “thousands of people in 21 states within the U.S. and two Canadian provinces became infected with the parasite *Cyclospora* after eating Guatemalan raspberries unintentionally contaminated with the pathogen” and pointing to the 1984 intentional contamination of salad bars by the Rajneeshee religious group, which “caused 751 cases of salmonellosis and resulted in the hospitalization of 45 of the victims”).

contaminated salad bars with salmonella in order to influence the outcome of an election, resulting in 751 people becoming ill.⁴² Costs of agricultural events have also been high; the *Escherichia coli* contamination of spinach in 2006 alone was estimated to cost up to \$74 million,⁴³ and foodborne illnesses linked to *Campylobacter*, *Salmonella*, *Escherichia coli*, and *Listeria monocytogenes* have had an estimated cost of \$6.9 billion annually in the United States.⁴⁴ It is illogical to allow intentionally and naturally occurring events to sicken or kill people or animals before the event is detected. The costs are clearly too great, both economically and personally.

VII. ATTRIBUTION

When it comes to any act of terrorism, criminal and terrorist prosecution is a federal priority.⁴⁵ Law enforcement agencies agree that activities that save lives and preserve the health of the public are a high priority and that law enforcement efforts (including investigation and other elements necessary for attribution) should not interfere with, but should instead support, public health efforts.⁴⁶ However, it is also important to determine who has perpetrated an act of terrorism, so that perpetrators may be apprehended and their support networks shut down in order to prevent further acts of terrorism. This makes attribution relevant and intrinsic to public health, and means that law enforcement efforts should occur while health care is delivered and other public health activities are ongoing.

42. *Id.*; Joseph E. McDade & David Franz, *Bioterrorism as a Public Health Threat*, EMERGING INFECTIOUS DISEASES, July-Sept. 1998, at 493, 493, available at <ftp://ftp.cdc.gov/pub/EID/vol4no3/adobe/mcdade.pdf>.

43. *Spinach Industry Still Hurt from Recall*, MAIL TRIB. (Medford, Or.), Oct. 21, 2006, <http://archive.mailtribune.com/archive/2006/1021/biz/stories/spinach.htm>.

44. USDA, *ERS Updates Foodborne Illness Costs*, FOODREVIEW, Sept.-Dec. 2000, at 48-49, available at <http://www.ers.usda.gov/publications/foodreview/septdec00/FRsept00h.pdf> (last visited Oct. 8, 2007).

45. *See, e.g.*, President George W. Bush, Address to Joint Session of Congress and the American People (Sept. 20, 2001), available at <http://www.whitehouse.gov/news/releases/2001/09/20010920-8.html> ("Our war on terror begins with al Qaeda, but it does not end there. It will not end until every terrorist group of global reach has been found, stopped and defeated.").

46. *See generally* EDWARD P. RICHARDS ET AL., U.S. DEPT OF JUSTICE, THE ROLE OF LAW ENFORCEMENT IN PUBLIC HEALTH EMERGENCIES: SPECIAL CONSIDERATIONS FOR AN ALL-HAZARDS APPROACH (2006), available at http://www.ojp.usdoj.gov/BJA/pdf/role_law_enforce.pdf (discussing the threats that communicable diseases, virus-caused pandemics, and additional public health emergencies pose to public health and safety and outlining key concerns law enforcement officials must address in order to respond properly).

As above, federal resources will not all be focused on response, in the traditional immediate life-saving sense of the word.

When suspected perpetrators are not U.S. citizens or are U.S. citizens that have fled the country, transnational investigations do occur and sometimes involve multilateral exchanges of information.⁴⁷ However, relevant intelligence specific to particular cases is almost always retained by a small team of agents, analysts, and investigators, and the nature of the information as well as the usual systems to protect that information generally preclude sharing it with other countries, including U.S. allies.⁴⁸ This secrecy may work if events occur in only one country, but one cannot assume that eventuality. Additionally, the lack of intelligence sharing will only slow or prevent efforts at attribution if events are occurring throughout the world, which would be expected if agro systems are targeted.

VIII. RESPONSE

When events are geographically circumscribed, one might expect the effects and response to the event to be localized. However, food and other disaster-relief supplies and resources will come in from the rest of the country and the rest of the world. Furthermore, any event-causing agents not caught before entering the system will also be sent throughout the country and the world. Additionally, emergency response must necessarily be localized.⁴⁹ Therefore, since the agricultural system generally, as well as the food production and distribution systems specifically, are worldwide,⁵⁰ the impact of agro terrorism is simultaneously local and global.

This means that a variety of different responses will be necessary to address agro terrorist events, response efforts will be fractionated, and resources will be split to a greater extent than for other types of terrorism. As a result, coordination of response efforts will be even more critical. The United States has yet to see efficient

47. See, e.g., 28 C.F.R. § 0.34 (2007) (identifying the role of the International Criminal Police Organization (INTERPOL) as an organization facilitating police cooperation).

48. See Green, *supra* note 21, at 35 (noting the overzealous protection of human intelligence sources by the Central Intelligence Agency).

49. ADVISORY PANEL TO ASSESS DOMESTIC RESPONSE CAPABILITIES FOR TERRORISM INVOLVING WEAPONS OF MASS DESTRUCTION, THIRD ANNUAL REPORT TO THE PRESIDENT AND THE CONGRESS 6-7 (2001), available at <http://www.rand.org/nsrd/terrpanel/terror3-print.pdf>.

50. See generally ECON. RESEARCH SERV., USDA, CHANGING STRUCTURE OF GLOBAL FOOD CONSUMPTION AND TRADE, WRS-0101 (2001) (discussing the changes in the composition of world agricultural trade).

and effective coordination occur between and among federal, nonfederal, nongovernmental, and private-sector agencies. It would be unrealistic to expect a greater level of efficiency and effectiveness when international organizations respond.⁵¹ However, relief will come from throughout the world.⁵² The already global agricultural system may well be imperfect, but because it is the only system that exists, it will deliver relief to the extent that it is able.

There are four alternate food supplies if food and food-production potential is eliminated in a particular area: MREs, national stockpiles, other federal holdings, and food from elsewhere throughout the nation. In the latter case, there will be streams of food coming into a particular area, and other streams diverted from other areas. Systems will have to be modified or created to clear food as it is distributed everywhere, including areas affected by agro terrorism. In places where agro terrorism has previously occurred, perhaps more than anywhere else, further acts of terrorism must be prevented and the population assured that its food is safe and secure.

When food is targeted, there are a variety of issues to address. All of the following must be managed: the physical effects of the ingestion of a terrorist agent, not having enough to eat due to the cessation of food distribution, and other effects of contamination.⁵³ Moreover, because of cultural feelings about food, particularly a fear of starvation, an agro terrorist event that targets food will generate great fear within society.⁵⁴ Emotionally, people will react as severely to an agro terrorist attack as they would any other act of terrorism. They will fear that there will not be enough to eat, that available food will be unsafe to eat, and that exposure will be ongoing.⁵⁵ Given the challenges experienced in addressing mental health concerns after

51. See, e.g., State Dep't Briefing, *supra* note 37 (discussing failure to inspect beef in MREs).

52. In the wake of Hurricane Katrina, numerous countries responded to requests for assistance from FEMA, including Germany, Russia, Spain, France, and the United Kingdom. *Id.*

53. See Brad Knickerbocker, *Risk of Terrorism to Nation's Food Supply*, CHRISTIAN SCI. MONITOR, Dec. 24, 2002, at 2 (explaining that a terrorist attack on the nation's food supply could result in deaths of both humans and domesticated animals, a crippled agriculture industry that ripples through the whole economy, negative impacts on plant and animal species, widespread confusion, and a loss of public confidence in the food system and in political leaders).

54. See Ostfield, *supra* note 7 ("The psychological effects on consumer behavior as a result of fear and anxiety over the possibility of a contaminated food product (loss in consumer confidence) can also have a ripple effect on other aspects of the economy.").

55. *Id.*

the anthrax events of 2001⁵⁶ and Hurricane Katrina,⁵⁷ it is doubtful that U.S. society will do a better job quelling fear after an agro terrorist event. These additional concerns must be planned for in advance of such an event.

IX. RECOVERY

Immediate response requirements for any terrorist event will be shared by both the public and private sectors, but recovery will be the primary responsibility of the private sector when it comes to restoring agricultural systems and processes.⁵⁸ Recovery and restoration will also be dependent upon decontamination, which may prove to be more difficult and take longer than expected. Elements of the agricultural system will not be revitalized quickly; soil will not be made arable quickly, dead animals will not spontaneously regenerate, and it may not be feasible financially or otherwise to bring in replacements. Response efforts will be accompanied by a short-term infusion of funds (similar to that seen with Hurricane Katrina), but recovery will not be characterized by the continued infusion of governmental funds at such high levels, particularly if events have occurred in a number of different areas, and if the effects on the agricultural system are pervasive.⁵⁹

X. MITIGATION

Mitigation activities occur after immediate response efforts have been carried out and recovery efforts are well underway.⁶⁰ The goal

56. U.S. GEN. ACCOUNTABILITY OFFICE, BIOTERRORISM: PUBLIC HEALTH RESPONSE TO ANTHRAX INCIDENTS OF 2001 19–20 (2003), available at <http://www.gao.gov/new.items/d04152.pdf>.

57. DISASTER RESPONSE EDU. & TRAINING PROJECT, CTR. FOR THE STUDY OF TRAUMATIC STRESS, HURRICANE KATRINA: EVACUEE MENTAL HEALTH AND CARE 1–4 (2005), available at <http://www.centerforthestudyoftraumaticstress.org/downloads/CSTSEvacuees.pdf>.

58. See NATIONAL RESPONSE PLAN, *supra* note 11, at 13 (“Unless the response role is inherently governmental (e.g., law enforcement, etc.), private-sector organizations are encouraged to develop and maintain capabilities to respond to and manage a complete spectrum of incidents and emergencies.”).

59. See, e.g., United for Peace & Justice, *After Katrina, Fund Full Recovery of Gulf Coast—Not War on Iraq* (Sept. 2, 2005), <http://www.unitedforpeace.org/article.php?id=3094> (“Budgets for flood control, strengthening the levees, evacuation, and relief have been inadequate and have actually been reduced. Last year \$71 million was cut from the budget for flood control in New Orleans alone.”).

60. See NATIONAL RESPONSE PLAN, *supra* note 11, at 55–56 (stating that “[m]itigation measures may be implemented prior to, during, or after an incident”). *But see* JANE A. BULLOCK & GEORGE HADDOW, INTRODUCTION TO HOMELAND SECURITY

of mitigation is to take action to reduce consequences should another such event occur.⁶¹ Unfortunately, although resource mobilization is typically quick in response to an event, interest level and provision of resources typically decline during recovery, and become much lower during the mitigation phase.⁶² Because of this disparity of interest and provision levels between the response and mitigation phases, many efforts and resources are systems-oriented, in hopes of getting the most out of the reduced amounts of money available.⁶³ However, it would be better to split efforts and resources, and focus them on strengthening systems in addition to building community resilience and self-sufficiency. Not only must our systems rebound after an event, but in addition—and more importantly—so must the people in affected areas.

XI. RECOMMENDATIONS FOR ACTION

There are a number of things a society can do in advance of agro terrorism to plan for the possibility (not just the probability) of such events. We can learn to divert food streams throughout the nation as well as the world. We can identify and apply lessons learned from large-scale disaster relief efforts and situations involving international humanitarian assistance. We can modify prevention and deterrence policies to address current threats. We can make an international agency the keeper of the bigger picture, understanding both the private and public sectors' contributions to the worldwide agricultural system. None of these directives is impossible or beyond our current means and abilities. Knowing today that acts of agro terrorism are both feasible and expected, we must alter our prevention, deterrence, preparedness, detection, response, attribution, recovery, and mitigation programs, and base them on a

267 (2006) (stating that “mitigation and preparedness generally occur before a disaster ever occurs, though postdisaster mitigation and preparedness, conducted in recognition that similar events are likely in the future make these two activities general to the entire emergency management cycle”).

61. *Id.*

62. Generally, the mitigation phase “depend[s] on the incorporation of appropriate measures in national and regional development planning and “the availability of information on hazards, emergency risks, and the countermeasures to be taken,” while the recovery phase “continue[s] until all systems return to normal or better.” Corina Warfield, Global Development Research Center, *The Disaster Management Cycle*, http://www.gdrc.org/uem/disasters/1-dm_cycle.html (last visited Sept. 20, 2007).

63. See MAKING THE NATION SAFER, *supra* note 12, at 288 (noting that “an overall systems approach is particularly important in the development of a national strategy for counterterrorism”).

better understanding of the threat. Although our response to acts of agro terrorism will be local, these local efforts will take place in, and be affected by, the global agricultural context. The global community will be the source of our relief. We must strive now to plan accordingly, and undertake the necessary diplomatic, political, and interpersonal activities well in advance of an act of agro terrorism.