



U.S. Agriculture, Food Production Is Threatened by Bioterrorism Attacks

By Dr. Neil E. Harl

Without much question, agriculture is vulnerable to bioterrorist attacks. Now that our attention is focused on terrorism, one can quickly compile a lengthy list of areas of possible mischief by those bent on disrupting activities in this country. The key issue is the probability of such events.

Probabilities of Bioterrorism

Terrorism is about risks — (1) to life, (2) to property and (3) to a way of life. The United States is vulnerable to attack in several areas — (1) governance, (2) telecommunications, (3) transportation, (4) water supplies, (5) food production, (6) food processing and (7) food distribution.

We are confronted by risks every day and have come to accept the fact that life is full of risks. Bridges, for example, are not designed for 100 percent safety. Bridges can, and occasionally do, fail.

Likewise, dams have been known to fail, leading to damage to property and even loss of life. The incidence of serious diseases, both animal and human, tends to be relatively low but significantly greater than zero. Aircraft engines have been the subject of exhaustive tests and, notwithstanding the fact that two-engine jets have been allowed to fly over-water routes, occasionally fail. Tire life has been the focus of manufacturers and consumers worldwide in recent months and, as almost everyone knows, the chances of tire failure have not been reduced to zero. Even household appliances are designed and manufactured with an accepted failure rate.

The risks of nuclear plant failure became the subject of public attention and debate more than two decades ago and, because the risk of failure was significantly greater than zero, were influential in essentially shelving plans for

additional reactors. Existing reactors pose a threat to people and property including agricultural production, although the risks are generally perceived as quite low.

In all likelihood, the risks from terrorism will likewise eventually be reduced to acceptable levels but probably not eliminated entirely. It is generally agreed that it would be very costly to reduce all risks to zero, and indeed some risks can probably never be reduced to zero.

But an acceptable level of risk is based on observed events. The study of risk factors has become a science as data have been compiled revealing the incidence of risk for particular activities. In this country, the probability of terrorist attacks was perceived as quite low until Sept. 11, 2001. Indeed, it appears that even insurance companies assumed the probabilities of such attacks were quite low. However, the attacks this year have permanently altered perceptions of risk from terrorist activity.

By comparison, the risks from terrorist attacks have been viewed much differently in the Middle East and at the gateway airports to the Middle East. Our perceptions of risk from terrorist attack are now aligned with much of the rest of the world.

Vulnerability of the Food System

The food system in the United States (and in much of the world) is clearly vulnerable to terrorist interference.

- U.S. borders are porous, even yet, especially for entry by air.
- Aerial applications of disease-causing organisms or fatal maladies are entirely possible.
- Concentration in livestock production has added to the vulnerability.
- Security levels on farms and ranches, in processing firms and in food distribution are uniformly low.

Food security experts estimate that the average U.S. city has a five-day sup-

ply of fresh meat, fruits and vegetables and three to five weeks of food supplies if edibility is the governing criterion. On the average, food supplies travel more than 1,300 miles from the farm or ranch where produced to the urban resident's dinner table. Food supplies in distribution are highly vulnerable to interference.

Vulnerability is increased because of low-wage workers involved in direct contact with food products, relatively high levels of turnover of employment in many food-related industries and the ease with which contaminants could be injected into foodstuffs. Reduced levels of inspection in recent years have added to the vulnerability.

Government Oversight

The federal government has only limited authority over foodstuffs. Indeed, there is no mandatory recall authority over food products. Surprisingly, the inspection of imported foodstuffs is inadequate. Virtually no seafood, domestic or imported, is inspected.

The General Accounting Office (GAO) in 2001 stated that the government's food safety system is beset by "inconsistent oversight and poor coordination." Twelve separate agencies are attempting to enforce 35 different laws pertaining to food safety. The Food and Drug Administration (FDA), in charge of inspecting 70 percent of the nation's food, has 150 inspectors in charge of 57,000 food establishments and food arriving at 132 ports. USDA has 10 times as many inspectors to handle 6,000 facilities for inspection of meat, poultry and processed egg products. GAO's recommendation was to form a single food safety agency.

On Jan. 7, the FDA issued guidelines to help prevent bioterrorist attacks on the nation's food supply. The guidelines cover the entire food chain, from the food producer to the grocery store. One set of guidelines is for food importers; the other is for domestic food producers, processors and retailers.

Following are some of the points included in the FDA guidelines for increasing food security at food facilities in the United States.

- Inspect vehicles, both incoming and outgoing, for suspicious activity.
- Beware of unsolicited visitors.
- Restrict access to laboratory facilities and to bacteria and toxins.
- Keep track of which employees are on which shifts, and watch for employees coming in early or leaving late.
- Prevent workers from bringing personal items (such as lunches) into food handling areas.
- Watch for unusual or suspicious behavior by new employees.
- Conduct regular inspections of employee bags, lockers and vehicles.
- Restrict access to computer control systems.
- Inspect ingredients, compressed gas, packaging and returned products for signs of tampering.

Vulnerability of Water Supply

Security levels for water supply facilities have been low. Major concerns are now being voiced over the back-flow of toxic materials into water systems (which could be pulled off rather easily from about any home or business which is part of a water distribution system). Moreover, about 75 percent of our water is supplied through reservoirs with little security over water in storage and in transit to storage through aqueducts, virtually no security over watersheds and a growing capacity to circumvent the effectiveness of water treatment facilities.

A Dynamic Problem

The country is not facing a static challenge. The technology of detection is changing and becoming more precise, but the technology of evasion is also changing. We are educating the best and the brightest in the world who become familiar with our technologies. What we know, we must assume they know.

It is a peculiar battle. This war is different from others we have fought.

- It will likely be never-ending.
- It has the capacity to impact this country directly (unlike most wars since the Civil War).

Like most wars, it will consume enormous amounts of resources and some human lives.

Why Has the Problem Arisen?

Part of the problem is our enormous success over the last century — (1) higher levels of per capita personal incomes in real terms; (2) higher levels of wealth, particularly as perceived by others; (3) technological dominance; and (4) the widespread influence of our culture (music, literature, movies, television, clothing and language) in other countries.

Solutions

As we ponder a range of solutions, several stand out in bold relief — (1) increased security at all levels, (2) more funding for detection technology, (3) tighter controls over borders, (4) increased government surveillance and authority and (5) consolidation of food safety oversight in a single agency. Other ranking solutions include reduced dependence on imported oil (the military presence in the Middle East has been a catalyst for increased terrorist activity) and a global food and agriculture policy to boost economic development in struggling Third World economies.

As for the long view, we can never be truly safe, but we are more likely to be secure if the poorer countries of the world (1) have hope for the future and (2) are reasonably well fed and feel the world respects their culture, language and traditions.

As we did from World War II to the Serbian bombing campaign, we should follow the current armed conflict with a helping hand as we did with the Marshall Plan after World War II and the \$1.3 billion of assistance for Serbia in 2001. The helping hand should be extended to all struggling economies of the world, not just Afghanistan.

Moreover, we need to be even-handed in our foreign policy and work toward a pluralistic world that is respectful without regard to religion, ethnicity, race or sex. ◆

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