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Food security is an essential element of comprehensive government crisis response plans. The absence of a terrorist attack on the agricultural sector, however, has been “more by luck than design” and the American public has a false sense of food security due to the invisibility of its complicated food supply chain. Current planning efforts, grounded in the Bioterrorism Act of 2002 and a series of Presidential Directives, rely exclusively on the status quo of conventional agriculture and neglect the potential security benefits of regional and local food networks. Two historical examples, the World War II Victory Garden program and Cuba’s post-Soviet agricultural restructuring, should inform present day policy decisions aimed at achieving food self-sufficiency in times of crisis. Using lessons learned from these two food insecure periods, this article analyzes opportunities for integration of regional and local food systems into current federal and state emergency response plans.

Those who do not remember the past are bound to repeat it.¹

Emergencies have always been necessary to progress. It was darkness that produced the lamp. It was fog that produced the compass. It was hunger that drove us to exploration. . .²

To be thrown upon one’s own resources is to be cast into the very lap of fortune, for our faculties then undergo a development and display an energy of which they were previously unsusceptible.³

I. Introduction

In an age of increased threats, the term “food security” has evolved to include the assurance that federal, state and local governments have developed plans to maintain sufficient food supplies in a time of crisis, in addition to an individual’s basic right to

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² Victor Hugo
³ Benjamin Franklin.
daily, adequate nutrition. The September 11, 2001 and Hurricane Katrina disasters in the U.S. unfortunately demonstrate that poor or nonexistent government emergency preparedness spells dire consequences for unprepared local residents. Future terrorist attacks, energy shortages, severe economic depression, and catastrophic weather or climate-related events in food producing regions could create food emergencies ranging from localized to nationwide shortages of varying duration.

Although Americans enjoy relatively low food costs compared to other developed economies, consolidation and centralization in American production, distribution and processing systems has made the U.S. food system vulnerable to both accidental and intentional disruption. Confinement of large numbers of livestock at long-distances from processing centers increases animals’ susceptibility to disease, and creates greater opportunity for its spread. Likewise, processing large amounts of food in one location

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4 See, e.g., International Convention on Economic, Social and Cultural Rights, Jan. 3, 1976, Art. 11.1 (stating the signatories recognize the right of people to “adequate food”).
5 WORLD AT RISK: THE REPORT OF THE COMMISSION ON THE PREVENTION OF WEAPONS OF MASS DESTRUCTION PROLIFERATION AND TERRORISM 11 (2008) (noting that “the biological threat is greater than the nuclear; the acquisition of deadly pathogens, and their weaponization and dissemination in aerosol form, would entail fewer technical hurdles than the theft or production of weapons-grade uranium or plutonium and its assembly into an improvised nuclear device”). See also, Sarah Hills, Food terrorism tops 2009 safety scare list, Food Navigator-USA (Jan. 5, 2009) available at http://www.foodnavigator-usa.com/content/view/print/231640 (predicting bioterrorism as one of the major challenges for food producers).
7 PETER CHALK, HITTING AMERICA’S SOFT UNDERBELLY: THE POTENTIAL THREAT OF DELIBERATE BIOLOGICAL ATTACKS AGAINST THE U.S. AGRICULTURAL AND FOOD INDUSTRY ix, 7-18 (RAND Nat’l Def. Res. Inst. 2004). See also Barbara A. Rasco & Gleyn E. Bledsoe, BIOTERRORISM AND FOOD SAFETY (CRC Press 2005) (stating that “the food [system] is highly vulnerable because of the diversity of sources of food, the distribution of food in global markets, and the complexity of the supply chain. . . “).
8 David Tilman et al., Agricultural Sustainability and Intensive Production Practices, NATURE Vol. 418 (Aug. 8, 2002) at 674-75.
9 Chalk, supra note 7 at 7; Linda B. Katz, ed., AGROTERRORISM: ANOTHER DOMINO 3 (Novinka 2005). Four firms control between 50-80% of the U.S. market for most of the major agricultural
and blending content into multiple batches provides increased opportunity to harm sizeable numbers of consumers. As a result of these production choices, food travels long distances, requiring large amounts of energy to reach the majority of consumers. Unfortunately, the absence of a terrorist attack on the agricultural sector has been “more by luck than by design” and the American public continues to derive a false sense of security from the “invisibility” of their complicated food supply chain.

“Complicated” and “complex” are two similar terms with different implications in the agricultural context. Natural systems have an evolutionary tendency to increase their complexity. Industrial societies, on the other hand, replace structural diversity (complexity) with monocultures arranged in complicated patterns. Professor Dahlberg uses the example of a clock to demonstrate the problems with a complicated system, in contrast to a complex system. A clock is complicated, but has a simple structure with only a few parts (e.g., gears, springs, hands, etc.). There is no redundancy—if one part


12 Michael T. Roberts, Role of Regulation in Minimizing Terrorist Threats Against the Food Supply: Information, Incentives, and Penalties, 8 MINN. J. OF L. SCI. AND TECH. 199, 208 (Winter 2007) (citing the Secretary of Agriculture’s comment that he is surprised the agriculture has not been the subject of a terrorist attack because it ‘is so easy to do’).

13 Chalk, supra note 7, at 33.

14 Kenneth A. Dahlberg, Regenerative Food Systems: Broadening the Scope and Agenda of Sustainability in FOOD FOR THE FUTURE 78 (1993, Patricia Allen, ed.).

15 Id. at 77.

16 Id.
fails, the clock is immobilized. This complicated functional specialization applies to industrial agricultural systems, as well. The typical mono-cropping, coupled with reliance on fossil fuels and long range transportation networks, create a complicated and inflexible system that lacks resiliency. The failure of one node could cripple the system, causing far reaching economic disruptions, loss of confidence in government institutions and social instability. A complex system, on the other hand, consisting of multiple local/regional food systems is more resilient as redundancies and adaptive institutions may compensate for the failure of one “gear” in the system.

Due to the economic efficiency and pervasiveness of the national-level food supply system, few city planners have conducted “food shed” analyses or created plans that could prepare a city for an acute or prolonged food crisis. Food systems “can exist at a number of levels—from the household to the neighborhood, to the regional, etc.”

Within these respective systems, to a varying degree, exist several subparts, the most important of which in this context include: (1) production inputs and processes; (2) distribution; (3) food preparation and preservation; and (4) consumption.

The federal government has not considered the role of regional and local food networks in its national homeland security planning. Instead, federal homeland security,
as it relates to agriculture and food, assumes the status quo of conventional agriculture—one that heavily relies on petro-chemical inputs that continue to skyrocket in price and contaminate the environment, concentrated production and processing markets, and transportation to service distant customers. The government relies solely on dispersed food sourcing, ignoring the threats from and to long-distance transportation of food. Authority to regulate food and security matters is scattered throughout a multitude of federal agencies, which results in an almost incomprehensive web of sub-agencies whose ability to function in an actual crisis is questionable. Federal actions taken or proposed thus far center on identifying threats, improving mechanisms and processes to detect intentional contamination at production and processing centers, and increased scientific research relating to these methods. Such regulations are costly for all producers and processors, but likely take the greatest toll on smaller entities.

The executive branch has acknowledged, however, that local food systems could play some role in combating the more chronic rise in cost, and increased scarcity of, food. In response to a question at a April 2008 White House briefing, President Bush opined that: "[o]ne thing I think that would be—I know would be—very creative policy is if we would buy food from local farmers as a way to help deal with scarcity, but also as a way to put in place an infrastructure so that nations can be self-sustaining and self-

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25 Erica Marcus, Burning Questions, NEWSDAY (Oct. 4, 206) at B17 (quoting noted food safety scholar Marion Nestle’s position that the _e.coli_ outbreak demonstrates why America’s food safety system needs an overhaul). See also, GAO Report, Federal oversight of food safety: Heightened risk designation can bring needed attention to a fragmented system, No. GAO 07-569CG (2007).

26 Laura B. DeLind & Philip H. Howard, Safe at any scale? _Food scares, food regulation, and scaled alternatives_, 25 AGRIC, & HUMAN VALUES, 301, 303-305, (2008) (arguing that responding to food safety concerns with additional scientized and highly capitalized investments only reinforces the food safety problems inherent in industrialized agriculture at the expense of a small-scale entities with a history of safe food production).
Rising food and fuels costs, coupled with food safety scares, are forcing reconsideration of the current agriculture and food model reliant on imports and domestically-sourced foods that travel long distances. Accompanying these thoughts is the realization that regional and local systems play “a critical—and virtually unrecognized—role in reducing the vulnerability of the system” to crisis. Smaller, diverse facilities may be better able to prevent intentional acts of sabotage because the operators are more familiar with their employees, are better able to observe the shortened chain of distribution, and do not amass large amounts of chemical inputs that could be dispersed over a broad area. Processing in smaller batches reduces the amount of food that could be contaminated and thus the public impact from a food safety incident. Well-developed regional and local networks of food production and distribution reduce reliance on distant food sources and eliminate the risk of production and/or distribution disruption if a crisis occurs. Over the long-term, a diverse, more localized agricultural sector may be more resilient and better able to combat the more chronic threats to national security such as energy shortages and/or price escalation, genetic erosion, decreased soil fertility, obesity and related health care costs, antibiotic resistance, environmental contamination, and climate change.

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30 DeLind and Howard, *supra* note 26, argue, in the context of food safety, that what is needed is not an “endless proliferation of industry-vetted standards, marks and labels” but rather the “creation of local and regional networks for food production, processing and distribution—
Two historical examples provide important insight into how federal government policies can integrate regional and local food systems to achieve food security during a time of acute crisis. During World War II, American home gardeners, through the federal government’s Victory Garden program, supplied 40% of the nation’s fresh produce, while simultaneously maintaining pre-war commodity production policies favoring large agricultural interests.\textsuperscript{31} Today, major cities such as New York, Chicago and San Francisco have revived the concept of local gardening by promoting the development of community gardens.\textsuperscript{32} The focus of these efforts, however, is on enhancing access to more nutritional food in urban centers, not in preparing for acute food emergencies. Little, if any federal leadership exists in support of urban food systems in the national security context. The recent food crisis in Cuba, precipitated by the collapse of Soviet-bloc trade in the early 1990s, is another historical example that could inform U.S. policymakers on how to achieve food self-sufficiency though

\textsuperscript{31} Amy Bentley, \textit{EATING FOR VICTORY} 117 (University of IL Press) 1998.

reemphasis on small farmers using sustainable practices supplemented with urban gardening.  

This article aims to ignite government action to strengthen and integrate regional and local food systems into federal food security planning so that citizens can be best prepared for a food emergency. The article first examines laws, regulations and policies put in place during World War II that employed regional and local food networks to satisfy a significant amount of civilian food supply needs. The article also looks at more recent Cuban efforts to achieve forced, food self-reliance when, after the end of the Cold War, Soviet subsidies and preferential trading of energy and food supplies ceased almost overnight. Drawing from these historical experiences, the article critiques current U.S. government planning for food emergencies, noting the absence of any type of food-specific plan that encourages, strengthens, and integrates regional and local food systems. The article concludes that certain aspects of these models should inform current federal government efforts to develop an effective food emergency plan, keeping in mind that a balance must be struck between keeping regional and local networks autonomous and flexible and the needs for national governmental oversight and coordination of food production and distribution during an emergency.

II. World War II Food Policy and Food Self-Reliance

U.S. food policy during World War II provides an informative lesson in how to—and in some cases perhaps how not to—ensure food security during a national security crisis. Although the demands placed on domestic and international food production and distribution systems by World War II may not be of the same type as what could occur in

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33 Hugh Warwick, Cuba’s Organic Revolution, FORUM FOR APPLIED RESEARCH AND PUBLIC POLICY (Summer 2001).
the future, the degree of crisis could be similar and thus actions taken during World War II provide a useful starting point for modern food crisis planning.

One commonality between World War II policies and current plans is their lack of foresight as to the breadth of the food crisis that could occur. U.S. food policymakers prior to and during the initial stages of the war failed to adequately foresee and plan for the overwhelming demands that a large-scale war would place on the U.S. food system. By focusing almost exclusively on responding to potential contamination events at the production stage current U.S. food security planning could be making a similar mistake. Exclusive reliance on the ability of the complicated national-level agricultural and food processing system neglects the potential of local food networks to respond to chronic food shortages caused by shocks to other aspects of the system.

Food situations change quickly in times of crisis. Accordingly, food planning must be done in advance due to the time period involved in producing and delivering food into market channels. For example, in just a few short years after the food surpluses of the late 1930s, the repercussions of poor or non-existent food planning became evident. In 1939, even as war in continental Europe loomed, the U.S. government was buying surplus food, and the majority of Americans believed that guns, not butter, would be necessary in the remote chance war ever reached America’s shores. When Germany invaded the low countries in the Spring of 1940, one of Great Britain’s largest sources of food was lost. By April 1941, the U.S. slowly began organizing a wartime food

34 William Ahlers Nielander, WARTIME FOOD RATIONING IN THE U.S. 21 (World Trade Relations Press) (1947) (stating that prior to the attack on Pearl Harbor “America had practically no plans and no organization to guide it through the mazes of protracted war.”). See also Benjamin Baker, WARTIME FOOD PROCUREMENT AND PRODUCTION 1 (King’s Crown Press) (1951).

35 Id. at 2-3.

36 Id. at 3.
bureaucracy and mobilizing agricultural production to meet Britain’s burgeoning food crisis under the newly passed Lend-Lease Act. The surprise attack on Pearl Harbor in December 1941 created chaos in the U.S. wartime food bureaucracy as it struggled to reorient itself to meet increased production and procurement needs. In mid-1942, as domestic food supplies tightened, the U.S. Government implemented a series of orders to ensure more “more equitable distribution.” By 1943, the specter of famine and food shortages in the U.S. routinely grabbed headlines. Food requirements for the armed forces, the shift from civilian to military production, the Lend-Lease program, and increased consumer demand stemming from increased employment (and wages) combined to create a “severe imbalance in the supply and demand for food and other consumer products.”

A. Allocation, Food Orders, Rationing, and Price Supports

Although World War II food planners eventually organized and achieved measurable successes—total food costs during the war decreased by 4%, and food production increased by 40%—these long-term accomplishments relied on increasing the productivity of large farms already producing to capacity rather than stimulating and

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37 Id. at 10-32 (explaining the establishment of the War Food Administration and its predecessor agencies).
38 Id. at 5.
39 Id. at 10.
40 Id. at 19. The Second War Powers Act of 1942 provided the President the power to allocate materials necessary for defense if the material was in short supply. Pub. L. 507, 77th Cong. (Mar. 27, 1942).
41 Roy F. Hendrickson, FOOD CRISIS 1 (Doubleday) (1943).
42 Emanuel B. Halper, Supermarket Use and Exclusive Clauses, Part Five—the Supermarket Business model is Completed as the Supers Adapt to World War II Conditions, 42 REAL PROP. & TR. J. 113, 121 (Spring 2007).
assisting the small producer with immediate excess capacity. As one commentator noted:

[A] fair appraisal of our production programs would have to admit that the Department of Agriculture and the War Food Administration favored the large farmer over the family size farmer. The former were already almost producing to capacity when the need was for additional production. Undoubtedly much could have been done to stimulate and assist the small producer. However, it was not done and in the spring of 1943, the Secretary of Agriculture, faced with a difficult administrative choice as to the direction of assistance to American agriculture, cast his lot with the large farmer. Much evidence could be marshaled to question the wisdom of his action.

Even this new emphasis on large agriculture and food industries, however, did not prevent food shortages brought on by the increased demand for food to feed the war machine, the rise of a black market, and inflationary food prices. These factors forced the Roosevelt Administration to institute, over the objection and resistance of some in the food industry, allocation of available food resources, food orders, price supports and food rationing.

Unfortunately, as described in the sections below, the federal government struggled to devise and implement a clear and efficient administrative structure to address food supply and distribution issues caused by world war. The administration’s repeated programmatic starts and stops, while searching for the right policy mix, undoubtedly hampered the war effort and social sense of homeland security. Of course, it may be impossible to foresee all of the food-related issues arising from a modern-day crisis. Carefully constructed model policies and an adaptable bureaucratic structure, however,

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44 Baker, supra note 34, at 148.
45 Halper, supra note 42, at 122.
should be drafted and prepared in advance for deployment in the event of a catastrophic event impacting food production or distribution. Accordingly, today’s planners should consider the policies outlined below as potential elements of a crisis management response. Although, failure to adequately plan may not guarantee disaster, as the federal government’s response in WWII certainly adapted over the long run, proper planning will ensure a more capable response with less disruption in a political and social environment already disrupted by an acute crisis.

1. Allocation

Because demand for food by civilians, the military, and foreign allies rapidly outstripped domestic supply, the federal government instituted a forced allocation program to apportion food among these interdependent groups. Allocation “means the apportionment of United States supplies of food and agricultural commodities among legitimate claimants—the specific consumer, groups of consumers, individual countries, areas, uses, and program which have a ‘valid’ claim against that food supply.” Allocation refers not only the total amount of food, but also when it is available for consumption.

The war time allocation process began by ascertaining the food needs of all those claiming a share of the food supply, both domestic and international, in proportion to their contribution to the war effort. The government adjusted requests, if necessary,

46 Baker, supra note 34, at 33.
48 Id. at 148.
49 Baker, supra note 34, at 47.
based on the estimated supply for that year. Even if supply exceeded demand, allocation remained essential as the military allocation dictated government procurement orders while rationing programs implemented the civilian allocations.

The bureaucratic structure to achieve proper allocations shifted chaotically throughout 1942 and 1943 in response to Congressional allegations of a broken process mired in bureaucratic tangles. Initially, the Food Requirements Committee, under the Requirements Committee of the War Production Board (WPB), made final allocation determinations. In December 1942, the President abolished the Food Requirements Committee and placed authority to allocate food with the Department of Agriculture.

The Secretary of Agriculture formed the Food Advisory Committee to review final allocations and rationing policy. The Secretary also established the Food Distribution Administration to gather the requirements from all claimant groups, recommend an allocation plan, and resolve conflicts between interested groups. The newly created Commodity subcommittees within the Requirements and Allocations Control Branch advised the Interagency Committee on Allocations (under the Food Distribution Administration) regarding supply demands and allocation requests. In addition to the duties noted above, the Food Distribution Administration (later renamed the Office of Distribution) was responsible for food procurement and distribution, in coordination with the Transportation and Warehousing Branch, and through various

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50 The Supply Estimates Committees for each commodity was responsible for calculating supplies. *Id.*
51 See *infra* notes 89-104 (discussing rationing policies during World War II).
53 Executive Order 9280 (Dec. 5, 1942); Baker, supra note 34, at 35.
54 Baker, supra note 34, at 37.
55 *Id.*
specialized committees such as the Meat and Dairy Procurement Boards.\textsuperscript{56} A separate Civilian Foods Requirements Branch formulated minimum civilian requirements and advocated these needs to the Interagency Committee.\textsuperscript{57} The Chief of the Allocations Control Branch and the Director of the Production Programs Branch of the Food Production Administration held joint responsibility for planning wartime food production.\textsuperscript{58} In January 1943, the Secretary of Agriculture established yet another interagency committee, the Interagency Food Procurement Committee, to develop a “more unified and efficient Governmental procurement program for food.”\textsuperscript{59}

Then, in March 1943, under pressure to streamline the allocations process, the President consolidated production and distribution functions (including Commodity Credit and Extension) by creating the Administration of Food Production and Distribution within the Department of Agriculture. The Director of the Administration of Food Production and Distribution reported directly to the President, not the Secretary of Agriculture.\textsuperscript{60} A month later, the President via executive order renamed it the War Food Administration.\textsuperscript{61} The War Food Administration abolished the Food Advisory Committee and the Interagency Committee on Allocations, replacing them with a single Food Requirements and Allocations Committee that had authority to pass on all requests

\textsuperscript{56} Id. at 69-79. See also Diagram, Food Distribution Administration Organizational Structure, http://www.sos.state.or.us/archives/exhibits/ww2/services/pdf/nut2.pdf (last visited Jan. 11, 2008).
\textsuperscript{57} Baker, supra note 34, at 37-38.
\textsuperscript{58} Id. at 38.
\textsuperscript{59} Secretary of Agriculture, Memorandum No. 16, Supp. E (Jan. 20, 1943); Baker, supra note 34, at 36.
\textsuperscript{60} Executive Order 9233 (Mar. 26, 1943); Baker, supra note 34, at 38.
\textsuperscript{61} Executive Order 9334 (April 19, 1943); Baker, supra note 34, at 38.
for allocation. Domestic and international allocation requests were reconciled through the Combined Food Board.

In sum, despite the relatively long run-up of World War II capped by the events of Pearl Harbor, the government created and disbanded multiple organizations before finding a workable administrative structure to balance food allocation needs with available supplies. Given the even greater consumer reliance on a centralized food production and distribution system and less self-sufficiency, the government today probably cannot afford the luxury of so many false-starts in the event it must respond to many of the foreseeable crisis of the twenty-first century.

2. Food Orders

Minimum food requirements, however, could not be met merely though the process of assessing supply and demand, and setting a distribution allocation. Supply shortages and bottlenecks repeatedly and severely stressed the system. The Government, therefore, further intervened in food markets via a series of administrative orders “imposing a wide variety of restrictions on almost every aspect of the food industries,” including “food deliveries, inventories, sales, purchases, distribution, and use.” The Food Distribution Administration (later the Office of Distribution), with the assistance of the commodity branches and the assent of the War Food Administration, issued five types of orders: distribution economy orders, limitation orders, allocation orders, licensing orders, and set-aside orders.

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62 War Food Administrator Memorandum No. 30; Baker, supra note 34, at 29.
63 For a detailed historical account of the Combined Food Board, see Eric Roll, THE COMBINED FOOD BOARD (Stanford University Press) 1956.
64 Baker, supra note 34, at 85.
65 Id. at 86, 89-90.
Distribution economy orders sought to conserve materials used in the war effort, and manpower that was in short supply, by restricting the use of certain ingredients—e.g., by limiting the amount of fat, sugar or milk used in a processed food.\textsuperscript{66} Distribution economy orders also limited the types of food that could be produced and sought to eliminate wasteful industry practices.\textsuperscript{67}

Limitation orders directed production of specific commodities and restricted sale of these items.\textsuperscript{68} For example, producers could not produce or sell citrus juice, except unconcentrated juice, unless pursuant to a government procurement contract.\textsuperscript{69} Other limitation orders sought to quash speculation by dictating how much inventory could be withheld from the market.\textsuperscript{70} Some limitation orders directed the cessation of certain types of food manufacturing such as chocolate and confectionary.\textsuperscript{71} Licensing orders functioned in the same way, except that a producer would have to seek a license to produce a certain product under threat of criminal and civil penalties.\textsuperscript{72} Product standards often were prerequisites to securing a license.\textsuperscript{73} When supplies of a given commodity were low, license-based shipping permits restricted interstate shipment of goods not related to the food program.\textsuperscript{74}

Allocation orders were put in place when the demand for a commodity outstripped its supply, thus requiring allocation. An allocation order, for example, could

\begin{itemize}
\item \textsuperscript{66} Id.
\item \textsuperscript{67} Id.
\item \textsuperscript{68} Id.
\item \textsuperscript{69} Id. at 86-87.
\item \textsuperscript{70} Id. at 87.
\item \textsuperscript{71} Id.
\item \textsuperscript{72} Id.
\item \textsuperscript{73} Id.
\item \textsuperscript{74} Id. at 88.
\end{itemize}
assume complete control of production and distribution. Similarly, set-aside orders ensured that manufacturers would reserve designated percentages of food supplies for the military.

With the exception of set-aside orders, the Department of Agriculture and its War Food Administration consulted with private industry prior to issuing food orders through advisory committees. Post-order appeal procedures were established, as well as administrative procedures for enforcement. In 1944, the Department of Justice revoked 223 licenses and permits while prosecuting 86 cases—a rather small non-compliance rate in light of the number and scope of orders.

The federal government’s market-distorting system of setting allocations for military or civilian use also required extensive, direct intervention via a variety of orders to control almost all aspects of the food processing system. The need for rapid redirection of supplies from civilian to military use required this primary level of government control. In addition to the command and control efforts discussed above, the government also implemented various market-based schemes such as price supports and rationing.

3. Price Supports

In addition to food orders, the Department of Agriculture adopted production goals and price support programs to stimulate the production of basic and non-basic commodities to meet war needs. The Production Goals Program set state and national

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75 Id.
76 Id.
77 Id. at 92.
78 Id. at 93-98.
79 Id. at 99.
production goals for various commodities to inform producers what would be necessary to support the war effort for the coming year. The commodity committees of the Bureau of Agricultural Economics set state-level targets after consultation with state leaders, USDA’s local war boards, and land-grant specialists. Once finalized, the goals were “broken down to the county and local basis,” with each farmer receiving a worksheet of individual production goals. A farmer that met 90% of the goal received benefit payments. Production goals worked in conjunction with price supports, which the government prepared well in advance of the next planting season. Price supports could be in the form of loans, purchases, guaranteed prices, subsidies, or purchase and resale.

4. Rationing

A detailed discussion of the rationing program is beyond the scope of this article. A basic understanding of point rationing, however, is helpful to inform current food security planning.

80 Commodity goals were grouped into the following categories: meat, oils and fats, milk, eggs and poultry, fruits and vegetables, feed grains and hay, and wheat. L.E. Call, Food in the War Effort, TRANSACTIONS OF THE KANSAS ACADEMY OF SCIENCES, Vol. 46 (Apr. 10, 1943) at 268.
81 Baker, supra note 34, at 138.
82 Id. at 118-133. The Extension Service, Bureau of Agricultural Economics, and other community committees were consolidated into War Boards in 1943 to aid in the production planning process at the local level. Id.
83 Id. at 138.
84 Id.
85 Id.
86 Id.
87 Id. at 139-141.
88 Id. at 141.
89 For an in-depth discussion of the U.S. rationing system during World War II, see Nielander, supra note 34; Judith Rusell & Renee Rantin, STUDIES IN FOOD RATIONING (Office of Price Administration) (1947); and, Office of Information, INFORMATION PROGRAM FOR POINT RATIONING AND CANNED AND PROCESSED FOODS (Office of Price Administration) (1943).
The President established the Office of Price Administration (OPA) in 1941, which became an independent agency in 1942. Although OPA participated in allocation decisions through its committee memberships within the War Production Board, it did not have independent authority to set allocations. Rather, its primary task was to establish and administrate a ration program for those commodities found to be in short supply. Beginning in 1942, OPA issued ration books containing coupons that the consumer would surrender in order to purchase specific food items.\textsuperscript{90} OPA indirectly regulated the demand for items by adjusting the points required to purchase a particular food.\textsuperscript{91} OPA allotted suppliers a set inventory of food, which they in turn purchased from wholesalers using banked ration coupons.\textsuperscript{92} Local OPA offices organized the distribution of ration books through local schools. In addition to a well-orchestrated appeal to patriotism and equitable distribution principles, OPA’s Department of Information enticed the American public to participate in food rationing with the post-war promise of increased consumerism.\textsuperscript{93}

OPA also controlled consumer prices through informal guidance and formal policies.\textsuperscript{94} The Emergency Price Control Act of 1942 gave OPA the authority to establish maximum prices for most commodities. The Act, however, exempted

\begin{footnotes}
\item[90] Halper, \textit{supra} note 42, at 134. Among the items subject to a rationed point-system were sugar, coffee, meat, fish, cheese, and canned and other processed food. \textit{Id.}
\item[91] \textit{Id.} at 135.
\item[92] \textit{Id.} at 136.
\item[93] Office Price Administration, \textit{Information Program for Point Rationing of Canned and Processed Foods} (Jan. 1943) (stating that “no one can chisel your share—and you can’t chisel on theirs,” and “the patriotic citizen buys only what he actually needs.”); Jacobs, \textit{supra} note 43, at 920. Although perhaps too soon forgotten amid the consumerism at the end of the century and the raise in obesity-related illnesses, one indirect benefit from the rationing program was that Americans increased their knowledge of what constituted a healthy diet. Clive M. McCay, \textit{America Is Learning What to Eat}, N.Y. TIMES (Mar. 28, 1943) at SM10.
\item[94] Nielander, \textit{supra} note 34, at 27.
\end{footnotes}
agricultural commodities unless the price reached certain levels.\textsuperscript{95} In April 1942, the President issued the General Maximum Price Regulation. The regulation, however, failed to control escalating food prices because of the Price Control Act’s agricultural commodity exemption.\textsuperscript{96} The subsequent Economic Stabilization Act of October 1942 ended the exemption for 90% of food products.\textsuperscript{97}

Despite these efforts, the black market trade of food products continued to flourish while quality declined.\textsuperscript{98} The price for a market basket of typical foods rose 32% between 1941 and 1943.\textsuperscript{99} The tide turned, however, in 1943 when the President ordered the OPA to set “standardized dollars-and-cents community ceiling prices for food.”\textsuperscript{100} This “Hold the Line” order fortified the consumer’s ability to check prices.\textsuperscript{101} To bolster enforcement, OPA also increased its local presence through War Price and Rationing Boards.\textsuperscript{102}

Although food allocation, production mandates, price supports and rationing are anathema to neoclassical economic theory, food security planners should at least contemplate whether these measures would be necessary in a modern-day food emergency scenario. Moreover, planners should consider whether, and to what extent,

\textsuperscript{95} Agricultural commodity prices could be capped under the Act if prices reached: (1) 110% parity; (2) the market price prevailing on October 1, 1941; (3) the market price prevailing on December 15, 1941; or, (4) the average price during the period between July 1, 1919 and June 30, 1929. Nielander, supra note 34, at 28. Parity is “the restoration and maintenance of the ‘balance between production and consumption of agricultural commodities. . . as will reestablish prices to the farmer at a level that will give agricultural prices a purchasing power with respect to articles that farmers buy, equivalent to the purchasing power of agricultural commodities during the base period.’” Baker, supra note 34, at 134.
\textsuperscript{96} Jacobs, supra note 43, at 917.
\textsuperscript{97} Id.
\textsuperscript{98} Id. at 917-918.
\textsuperscript{99} Bentley, supra note 31, at 19.
\textsuperscript{100} Jacobs, supra note 43, at 918.
\textsuperscript{101} Id.
\textsuperscript{102} Id.
partial reliance on local and regional food networks during a food emergency may alter the formulation, functioning, and results of allocation, food orders, price supports, and food rationing. Although these measures either withstood or remained free of successful constitutional challenge at the time, it is unclear whether they would withstand scrutiny under modern Supreme Court jurisprudence regarding the war and commerce powers, and the spending, due process and takings clauses. From an administrative perspective, food security planners also should evaluate what governmental organization would be necessary to implement these controls from the start to preen the succession of ineffective agencies that finally resulted in creation of the War Food Administration.

B. Victory Gardens

In addition to the market intervention and direct coordination of the food and agriculture industry discussed above, the government sought the assistance of private citizens to meet the war time demand for food. This was not the first time the public

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103 For example, would the war powers provision of the Constitution support an agency order dictating the type and amount of production in response to a terrorist act involving the food supply? Has a federal police power evolved in constitutional jurisprudence to allow the federal government to commandeer a food crisis response that arguably is the prerogative of the state(s) involved? See generally Rebecca M. Kahan, Comment, Constitutional Stretch, Snap-Back and Sag: Why Blaisdell Was a Sharper Blow to Liberty Than Korematsu, 99 N.W. U. L. R. 1279 (2005) (describing generally crisis governance under the U.S. Constitution, including economic and violent crisis); Christine M. McMillan, Comment, Federal Flood Insurance Policy: Making Matters Worse, 44 Hous. L.R. 471 (2007) (addressing constitutional management of natural disasters); Sarah M. Riley, Comment, Constitutional Crisis or Déjà Vu? The War Power, the Bush Administration and the War on Terror, 45 DUQ. L. REV. 701, 725-730 (2007) (discussing Youngstown Sheet & Tube v. Sawyer, 343 U.S. 579 (1953) and the power of the executive to justify actions under the war powers provision of the Constitution); Neal Devins and Louis Fisher, The Steel Seizure Case: One of a Kind? 19 CONST. COMMENTARY 63 (2002) (analyzing whether the case reconciled executive actions under the war powers act with the takings clause). 104 No comprehensive planning occurred prior to the attack on Pearl Harbor as to how the federal government bureaucracy would respond to the food demands of a great-expanded military. As a result, the bureaucratic structure to achieve allocations shifted chaotically throughout 1942 and 1943 in response to Congressional allegations that the allocation process was broken down and mired in bureaucratic tangles. Charles E. Egan, C.C. Davis New Food Chief, Replacing Wickard in Post, N.Y. Times (Mar. 26, 1943) at 1.
heeded the call to supplement national food production in aid of an American war effort. The National War Garden Commission, established during World War I, was successful in freeing up domestic labor, transportation systems and food for the war front, and providing a valuable food source at home. 105 This was achieved by a massive public information campaign that appealed to American patriotism to “put all idle land to work.” Along with identifying idle land with the potential for food production, The National War Garden Commission implemented programs that educated Americans how to grow and process food. 106

In December 1941, the Secretary of Agriculture and the Director of the Office of Defense, Health and Welfare Services (DHWS) convened the National Garden Conference in Washington, D.C. 107 Among those attending the conference were the USDA, Office of Civilian Defense, the Work Projects Administration (WPA), the Federal Security Agency, garden associations and clubs, seed and horticultural trade associations, and the farm press. 108 The Conference concluded that the home gardening program should be expanded to increase total food production. 109 On January 11, 1942, the Office of Civilian Defense (OCD) announced that Local Defense Councils would start community Victory Garden Programs. 110 The Secretaries of Agriculture and DHWS appointed a National Garden Advisory Committee to lead the Victory Garden program. 111

106 Id. at 9-10,
108 Id. at 3.
109 Id.
110 Victory Gardens to Bloom in the U.S., N.Y. Times (Jan. 12, 1942) at 19.
111 To Push ‘Victory Garden’; National Committee Is Headed by Tennessee Governor, N.Y. Times (Jan. 23, 1943) at 22.
The Committee included members from industry, extension, home-making, garden clubs, and garden publications.\textsuperscript{112}

Extension agents held state-level conferences to set up state committees under the auspices of state defense councils.\textsuperscript{113} Coordination also occurred at the county level, or if the county was too large, county sectors or precincts.\textsuperscript{114} At the local level, Local Defense Councils appointed experienced gardeners to chair garden advisory committees.\textsuperscript{115} The chairperson selected five subcommittee chairs: (1) land, equipment, and supplies for gardening; (2) equipment and supplies for storage; (3) personnel and training; (4) publicity and information; and, (5) transportation.\textsuperscript{116} The national committee required its local counterparts to first survey potential resources within the community, including available and suitable land, persons with expertise in gardening and processing who could supervise and educate members, media resources, transportation nodes, and potential workers.\textsuperscript{117} After the survey, local committees classified specific land as home, school, or community gardens.\textsuperscript{118}

The purpose of the program was fivefold: (1) better the health and nutrition of Americans by increasing the consumption of fresh fruits and vegetables, (2) encourage

\textsuperscript{112} \textit{Id.}
\textsuperscript{113} E.L.D. Seymour, ed., \textsc{The New Garden Encyclopedia: The Victory Garden Edition} 1358 (Wm. H. Wise & Co. 1943).
\textsuperscript{114} \textit{Id.} at 1360.
\textsuperscript{115} U.S. Office of Civilian Defense, \textsc{Guide for Planning the Local Victory Garden Program} 5 (Mar. 25, 1942).
\textsuperscript{116} \textit{Id.}
\textsuperscript{117} \textit{Id.} at 6.
\textsuperscript{118} \textit{Id.} The committee also was in charge of planning, supervising and working of the gardens and processing projects, offering training courses, procurement and/or organization of shared equipment and supplies, distributing information developed by the Government, publicizing the program, and raising funds for the program. \textit{Id.} Records were kept for each volunteer member, including information such as their level of expertise in gardening and processing, the type of garden owned, and whether or not the volunteer could provide transportation, equipment or supplies to others. \textit{Id.} at 6-7.
the proper storage and preservation of food, (3) provide money savings to be applied to foods that had to be purchased, (4) assist urban gardeners in obtaining communal property in which to grow fruits and vegetables, and (5) “maintain the morale and spiritual well-being of the individual, family, and Nation.” Just as the War Garden Commission during WWI, the U.S. Food Administration recruited gardeners by appealing to Americans’ patriotism. Extension services played a large role in teaching victory gardening.

Unused land was lent to those wishing to victory garden. For example, Chicago protected victory gardens from trespass by a special city ordinance imposing a $50 fine for unlawfully entering or damaging a victory garden. However, some victory gardeners violated city zoning ordinances when they started raising small flocks of chickens within city limits. In addition to land use questions, victory gardeners feared the lack of processing supplies, particularly ones made from materials used in the war effort. If large amounts of garden produce could not be preserved, food that otherwise could help people supplement their ration would be wasted. The War Production Board assured home gardeners that enough pressure cookers would be produced to process

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119 Id. at 3. Americans did learn through victory gardening that fresh food can provide a more balanced and complete diet over processed food. McCay, supra note 86, at SM10.
120 This strategy is depicted clearly in Government posters published during World War II. See e.g., Posters, National Archives and Records Administration, Records of the U.S. Food Administration, http://www.archives.gov/education/lessons/sow-seeds/#documents.
121 For example, the University of Illinois at Champaign Urbana Extension Service provided a weekly seasonal broadcast on victory gardening. See Illinois University Extension Service in Agricultural and Home Economics, VICTORY GARDEN RADIO PROGRAM TRANSCRIPTS, 1943.
122 Will Lend Land for Gardeners, N.Y. TIMES (Feb. 27, 1943) at 16 (noting that the Baltimore & Ohio Railroad was lending unused parts of its right-of-way to gardeners); Builders to Give Idle Home Plots for War Gardens, N.Y. TIMES (Feb. 28, 1943) at RE1.
123 Seymour, supra note 113, at 1356.
124 Women Fight Curb on Chicken Raising, N.Y. TIMES (Jan. 1, 1943) at 18.
harvests.\textsuperscript{125} To further stretch scarce processing supplies and minimize individual costs, the federal government published guidelines on how to create community food processing centers, many of which were sponsored by local boards of education.\textsuperscript{126} State Departments of Agriculture set up canning competitions at county fairs to publicize food production and preservation efforts.

The government, however, placed some limits on the distribution of Victory Garden production. Home canners who sold their food to third parties had to register with the national OPA office and collect ration points from purchasers.\textsuperscript{127} Some gardeners worried that participation in the program and providing information about gardening activities to the government could result in the later government appropriation of their harvests.\textsuperscript{128}

In addition to home production, the Food Distribution Administration of the USDA called on State Defense Councils to coordinate efforts with victory garden programs to establish school gardens to supplement the school lunch program. Without such an effort, USDA officials feared discontinuation of school lunch programs. The USDA suggested the appointment of parent-teacher organization members to lead special subcommittees on school lunch programs within local victory garden programs.\textsuperscript{129}

In 1943, as the Victory Garden Program entered its second year, the Chairman of the Victory Garden Committee warned that over half of the supply of canned goods for the coming year were allotted for military use and urged every urban and suburban family

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\textsuperscript{125} More Cookers Set for Home Canning, N.Y. TIMES (Mar. 24, 1943) at 26.
\textsuperscript{126} Paul W. Chapman, VICTORY BARNYARD 190 (McGraw Hill 1943).
\textsuperscript{127} OPA Information Program, supra note 93, at 24.
\textsuperscript{128} Seymour, supra note 113, at 1356.
\textsuperscript{129} Illinois State Council of Defense, letter to local victory garden committees (June 9, 1943).
\end{flushleft}
with sunny and fertile ground to grow as large a garden as possible. USDA’s goal for
1943 was 18,000,000 victory gardens, with three-fourths of those in urban areas.
Nearly one out of every two families planted a victory garden in 1943, producing
approximately 125 pounds of food for each civilian man, woman, and child in the U.S.
In a radio broadcast the next year, OPA Administrator Chester Bowles called on families
to plant two million “Victory Gardens” in 1944 as a “home front necessity.”

Much like a “resilient” ecosystem, the diversity of agricultural production
achieved via the Victory Garden program ensured the resiliency of the World War II food
supply system to meet the needs of civilians and the military during a time of crisis.
Ecosystem resiliency carries buffering capacity (i.e., the ability to absorb shocks without
structural change). Another measure of resiliency is the speed at which the system
 recovers from a disturbance. Just as biological ecosystems are resilient, “social
resiliency” enables communities to withstand external shocks to their social
infrastructure.”

It cannot be said that any region of the United States is even substantially self-
sufficient in food production, as American consumers depend on imported products
produced only in climates and soils outside their respective regions. In many areas,
existing food supply chains contain little or no locally produced products despite the historical presence of “truck farms” in the peri-urban areas surrounding many large cities.\textsuperscript{139} Rather, these large population centers “are tethered to food pipelines that extent around the globe.”\textsuperscript{140} The continued viability of many of these supply chains, however, depends on a stable set of political, economic and environmental conditions, coupled with low cost fuel that enables the transport of food great distances at little cost.\textsuperscript{141} The more complex the food supply system, the more vulnerable it may be to external shocks, as each additional node presents a potential disruption to the overall system. Accordingly, the ability of the individual links in the chain to respond to change in variable ways, a concept referred to as “response diversity” in ecological literature,\textsuperscript{142} also applies in the food security context. Victory Garden programs tailored at the county level provided a key measure of response diversity and attendant food chain resilience in the later stages of World War II to supplement traditional supply channels.

In sum, World War II food policy and self-reliance was multi-faceted, comprising a variety of administrative structures, several types of government orders (allocation, food rationing, and price control) and supplemented with non-traditional agricultural production via the Victory Garden Program. Forty-five years later, Cuba adopted many of the same strategies to confront the food shortages precipitated by the collapse of the Soviet Union. A discussion of these measures follows.

III. The Cuban System of Achieving Food Security during a Time of Crisis

\textsuperscript{139} Id. at 4-5.
\textsuperscript{140} Id. at 5.
\textsuperscript{141} Id. at 5.
\textsuperscript{142} Elmquist, supra note 135, at 488 (defining “response diversity” as the “diversity of responses to environmental change amoung species that contribute to the same ecosystem function”).
Between 1959 and 1989, Cuba took several steps to eliminate hunger and ensure food security. In the beginning years of the Castro revolution, Cuba put land in the hands of small farmers, placed ceilings on food prices, and instituted a rationing program for basic foods. With the onset of the U.S. embargo and the Cold War, however, Cuba traded its early idealistic efforts of food self-sufficiency for valuable chemical and mechanical inputs from the Soviet Union. By the mid-1970s, Cuba achieved its goal of feeding its people through conventional, large-scale agriculture. With the collapse of the Soviet Union in 1989, however, Cuba’s food and energy imports disappeared instantaneously requiring drastic measures to avoid starvation. Although many doubted the post-Soviet survival of communist Cuba’s agriculture, it has achieved a level of food self-sufficiency. Cuba accomplished this goal, in no small part, through the efforts of individual gardeners and the adoption of farming practices that do not rely on petroleum and petrochemical inputs.

The following sections briefly describe initial Castro agricultural reforms of the 1950s and 1960s, the nation’s evolutionary dependence on the Soviet Union for agricultural inputs, and the country’s subsequent response to the abrupt withdraw of Soviet aid. Special attention is paid to areas in which Cuba’s agricultural strategy paralleled U.S. efforts at food production during a similar period of food crisis—World War II.


When Fidel Castro came to power in 1959, he sought to eliminate inequality in Cuban society, particularly the hunger and malnutrition particularly prevalent in rural areas. Although over sixty percent of Cuba’s land is tillable, prior to the revolution,
Cuba depended on imports from the United States for eighty percent of its food supply.\textsuperscript{143} The new regime’s first agrarian reform set out to nationalize large estates and create state-owned farms.\textsuperscript{144} Although two-thirds of Cuban farmers were given title to land through this program,\textsuperscript{145} the second agrarian reform in 1963 resulted in the further expropriation of land from farms larger than 165 acres.\textsuperscript{146} Remaining independent farmers were private in name only, as the government, to control escalating food prices, dictated what to grow and what price to charge.\textsuperscript{147} By the mid-1970s, private farmers either had been pushed into joining cooperatives or sold their farms to the government.\textsuperscript{148}

In response to skyrocketing food prices, the new government also set prices for various agricultural commodities, which retailers ignored.\textsuperscript{149} The government shut down offending retailers\textsuperscript{150} and eventually nationalized wholesale food distribution.\textsuperscript{151} Further exacerbating food distribution and inflation, the U.S. imposed an embargo in 1960, shutting the nation off from its primary food source.\textsuperscript{152} In 1961, the government outlawed the resale of basic goods to curtail black market food sales.\textsuperscript{153} By 1968, the government owned all retail food stores.\textsuperscript{154}

\textsuperscript{143} MEDEA BENJAMIN, ET AL., EDS., NO FREE LUNCH: FOOD AND REVOLUTION IN CUBA TODAY 8 (Institute for Food and Development Policy 1989)
\textsuperscript{144} Id. at 162-163.
\textsuperscript{145} Id. at 166.
\textsuperscript{146} Id. at 168.
\textsuperscript{147} Id. at 169.
\textsuperscript{148} Id. at 179. By 1980, over 80% of farms were owned by the state. LAURA ENRÍQUEZ, THE QUESTION OF FOOD SECURITY IN CUBAN SOCIALISM 20 (Univ. of Calif. 1994).
\textsuperscript{149} ENRIQUEZ, supra note 148, at 21.
\textsuperscript{150} Id. at 22.
\textsuperscript{151} Id. at 22-23.
\textsuperscript{152} Id. at 18-19.
\textsuperscript{153} Id. at 22.
\textsuperscript{154} Id. at 26.
None of these actions ended speculation or the poor’s desperate food situation.\textsuperscript{155} In March 1962, the government instituted rationing of basic food items. The government set ration levels for all Cubans, regardless of income.\textsuperscript{156} Although expected to be temporary, rationing continues today.\textsuperscript{157} The Castro regime also created a National Board for the Distribution of Foodstuffs to implement a rationing scheme based on food product and location.\textsuperscript{158} Cubans registered with the National Rationing Board at a retail store near their home, from which they would receive their monthly ration “food basket.”\textsuperscript{159} People with special needs, such as the elderly, children, and those who work at strenuous jobs received an extra ration.\textsuperscript{160} The government did provide reduced price meals at the workplace, hospitals, and schools.\textsuperscript{161} Despite these efforts, black and gray markets were prevalent.\textsuperscript{162}

With the start of the Cold War in the 1960s, Cuba forged a trade relationship with the Soviet bloc that eventually constituted 85\% of its foreign trade.\textsuperscript{163} Through this relationship, Cuba became the most mechanized agricultural country in Latin America.\textsuperscript{164} It also grew heavily dependent on petrochemicals, oil, hybrid seeds, and machinery.\textsuperscript{165} Even though it had tried in the early days of the revolution to diversify the agricultural sector, by the mid-1960s, three times more land was devoted to sugar production than

\textsuperscript{155} Id. at 22.
\textsuperscript{156} Id.
\textsuperscript{157} Id. at 22-23.
\textsuperscript{158} Id. at 22.
\textsuperscript{159} Id. at 26.
\textsuperscript{160} Id. at 27.
\textsuperscript{161} Id. at 47.
\textsuperscript{162} Id. at 45.
\textsuperscript{163} Warwick, supra note 33, at 54.
\textsuperscript{164} Peter M. Rosset, Alternative Agriculture and Crisis in Cuba, IEEE TECHNOLOGY AND SOCIETY MAGAZINE (Summer 1997) at 19.
\textsuperscript{165} Id.
food as a way to finance further industrialization of the economy. As a result, imports comprised 57% of the average Cuban’s calorie intake during the time of Cuba-Soviet trade relations.

By the late 1970s, Cubans’ nutritional needs were being met, but many felt that their lives were “austere and drab by comparison” to their Miami counterparts. The government responded with a series of reforms to increase food self-sufficiency. In a step away from the nationalized wholesale food distribution system, the government decreed in 1980 that farmers and producers could sell directly to customers at the nearest farmer’s market, at no set price. Prices at the markets were high, and only those few who could afford it would buy food at the farmer’s market. In true capitalist form, farmers withheld their best produce from the state distribution system, and reserved it for the market and its exorbitant prices. The government subsequently limited who could sell at the markets, and opened government counterparts to compete with the private markets. To increase overall supply, the government began paying farmers for amounts produced in excess of their respective quotas, and encouraged sugar farmers to divert some effort to the production of food crops.

Unable to control prices and obtain food self-sufficiency, in 1986, Castro announced that the farmer’s markets would close as part of a “rectification of errors”
campaign to increase food security and encourage peasants to join cooperatives. Real efforts to reform production stalled until the late 1980s, but by that time it was too late. The “very success of the Cuban Revolution in the agricultural sector (if defined in terms of modernization) [now] constitute[d] its biggest albatross,” as mechanization and cash-crop (i.e., sugar) production resulted in food shortages and import dependence.

B. “The Special Period of Peacetime”: Cuba’s Food Crisis and Recovery

With the fall of the Berlin Wall and the collapse of the Soviet Union in 1989, Cuba lost its primary, preferential trading partners almost overnight. Russia began demanding that Cuba pay for oil imports at the market rate and in hard currency. Between 1989 and 1992, oil imports fell 53%. The importation of fertilizer and chemical inputs for agriculture declined almost 80%. Wheat and other grain imports dropped by 50%, and other imports of food declined even more. The government added more foods to the ration list, and eliminated some rationed foods entirely. Between 1989 and 1993, caloric intake of the Cuban people dropped by almost 30%. On September 26, 1990, the government declared that the country was in a “Special Period of Peacetime” and that austerity measures equal to being at war would be

176 Id. at 22.
177 Id. at 2.
180 Rosset, supra note 164, at 21.
182 Rosset, supra note 164, at 21.
instituted. On the supply side, Cuba announced a multi-faceted new food program aimed at increasing domestic production to achieve food self-sufficiency.

1. State-Run Farms

To increase the productivity of larger state farms, the government converted 60 percent of state farms into new entities called UBPCs (Unidades Basicas de Producción Cooperativa) that would own both the means and fruits of their production. After allocating a certain amount to the state, UBPCs could distribute the remainder privately at market prices. In 2002, the Government switched production on 50% of its state sugar cane estates to food crops and reforestation.

2. Farm Labor Initiatives

Because farm labor was in short supply, the government deployed urban workers to the countryside for two-week periods every year. Workers also could volunteer for 2-year stints on farms in exchange for better housing and higher wages. As an alternative to compulsory military service, youth could spend one year on a state farm producing food. As a further incentive to increase the farm labor supply, the government restricted new housing permits to buildings intended for agricultural workers.

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183 Id.
185 Id.
186 Sinan Koon, Food Security in Cuba, MONTHLY REVIEW (Dec. 9, 2003) at 19.
187 Deere, supra note 175, at 6; Howard W. French, Cuba Hurt by Falling Soviet Imports, Makes Field hands of Office Workers, N.Y. TIMES (Dec. 1, 1990) at 3.
188 Deere, supra note 175 at 6.
189 Catherine Murphy, Cultivating Havana: Urban Agriculture and Food Security in the Years of Crisis, Development Report No. 12 (Inst. for Food and Devel. Policy) at 10.
190 Deere, supra note 175, at 6.
3. Farmers’ Markets

In the post-Soviet era, Cuba also instituted some free market reforms to stimulate food production. In 1994, Cuba decided to reopen the farmers’ markets, allowing any person, from backyard gardener to cooperative, to sell produce at the free market price. To compete with the higher-priced markets, the Government also opened its own “limited price” produce markets.  

4. Land Re-Utilization & Small-Scale Gardens

The government also sought to create “new land” to increase production. Similar to the Victory Garden program in the United States, production began on under- and un-utilized land, such as vacant land, parks and sugar cane estates. The Cuban government particularly emphasized the development of urban agriculture. The City of Havana created an urban department of agriculture with satellite offices throughout the city for extension agents. The government set incremental goals of devoting a certain amount of square meters per person in urban areas to food production. For example, the goal for 2002 was 10 square meters per capita, which, assuming a yield of 20 kilograms per square meter, would amount to 200 kilograms of food per year per person. Cubans began erecting raised bed gardens, or organoponicos, filled with composted soil on otherwise unusable or paved over land. Urban backyard and patio gardens emerged,
using intensive methods of vegetable gardening. The government relaxed laws restricting urban food production to backyards, and entered into contracts with growers to raise animals within the city limits. In addition, the government began re-distributing private land to individuals in exchange for the promise of food production. Local governments can appropriate fallow private land and assign production rights to those who agree to produce food. Finally, local “Committees for the Defense of the Revolution” achieved their promise of communal gardens for every locality with over twelve houses. In return for free use of land, some communities expect surpluses to be shared with local schools and hospitals. Schools and hospitals also have their own gardens. By 1998, 30,000 people in Havana were cultivating 30% of the city’s available land. In sum, these new, local gardens are responsible for providing up to 50% of caloric intake and reduced the need for imported fuel to distribute food and generate electricity for refrigeration.

5. Agricultural Extension

Another weapon in Cuba’s arsenal to achieve food self-sufficiency is its army of agricultural scientists, some of whom were quick to criticize Cuba’s heavy reliance on environmentally destructive, imported, petrochemical inputs once the new food program

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198 Id.
199 Altieri, supra note 196. at 134.
200 Murphy, supra note 189, at 24.
201 Koont, supra note 186, at 13.
202 Id. The private owner has the option of placing the land in production within six months to avoid appropriation. Id.
203 Id. at 13.
204 Id. at 18.
205 Warwick, supra note 33, at 55.
206 Id.
207 Id.
was announced in 1990.\textsuperscript{208} Even prior to the Special Period, agronomists successfully developed alternative pest management and soil improvement techniques.\textsuperscript{209} To increase soil productivity and reduce degradation, agricultural scientists also reassessed soil and conservation practices.\textsuperscript{210} The government opened centers throughout the country where extension agents advise gardeners and other food producers on biological pest control methods.\textsuperscript{211} Seed stores offer seeds, soil improvers, and pest control substances.\textsuperscript{212} The government also opened hundreds of composting and vermicomposting centers.\textsuperscript{213} Finally, the country reduced its energy dependence by reverting to animal power, such as oxen, for field work.\textsuperscript{214}

By 2000, Cuba surpassed pre-crisis levels of food production,\textsuperscript{215} in large part through one of the “largest conversion[s] from conventional agriculture to organic and semi-organic farming that the world has ever known.”\textsuperscript{216} Gardening has increased Cubans’ nutritional awareness and improved the quality and variety of Cubans’ diet beyond pre-1989 levels.\textsuperscript{217} And Cuba is now, for the first time since its revolution, food self-sufficient.

Most modern industrialized counties, either due to political opposition or production rigidity, could not adopt Cuba’s unique command and control government structure, as applied to food production. However, the nation’s success in achieving food

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\begin{itemize}
\item \textsuperscript{208} Rosset, supra note 164, at 21.
\item \textsuperscript{209} Trimiño, supra note 178, at 90-92.
\item \textsuperscript{210} Id. at 92-93.
\item \textsuperscript{211} Koont, supra note 186, at 15-16.
\item \textsuperscript{212} Murphy, supra note 189, at 31-33.
\item \textsuperscript{213} Koont, supra note 186, at 15.
\item \textsuperscript{214} ENRÍQUEZ, supra note 148 at 41.
\item \textsuperscript{215} Koont, supra note 186, at 19.
\item \textsuperscript{216} Murphy, supra note 189, at 10.
\item \textsuperscript{217} Id. at 44-45.
\end{itemize}
self-sufficiency warrants careful consideration as some elements of the government programs described above could fit within a democratic, capitalistic economy, especially in response to a food crisis.

IV. The Post-9/11 Concept of Food Security Planning in the U.S.

In the aftermath of the September 11, 2001 terrorist attacks on the United States, the federal government issued a series of statutes, regulations, orders, directives and other documents aimed at preventing and reacting to future attacks. Some of these relate specifically to food security threats. Other government efforts establish generic procedures for intergovernmental coordination that could be applicable, in theory, to a food-related incident. The following sections examine these provisions only to the extent necessary to expose gaps in food-specific planning related to integrating regional and local food capabilities into a federal response plan.

A. Federal-Level Policies Directed by DHS

The Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (“2002 Bioterrorism Act”) is the cornerstone post-9/11 federal act related to increasing food security. The Act directs the Secretary of the Department of Homeland Security (DHS) to develop a coordinated strategy with the states to address the public health implications of bioterrorism and other public health emergencies. The strategy must achieve effective surveillance and reporting mechanisms, ensure hospital and laboratory readiness, properly train personnel, prevent bureaucratic overlap, and establish effective communication networks.

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219 Id.
Title III of the Act deals specifically with the safety and security of the food supply. It directs the President’s Council on Food Safety,\textsuperscript{220} in cooperation with the Secretaries of Transportation, Treasury, other relevant agencies, and other stakeholders, to develop an education and communication strategy to: (1) assess threats to the food supply, (2) secure food processing and manufacturing facilities and transportation modes, (3) improve contamination detection measures, and (4) establish procedures for notification and response measures.\textsuperscript{221} The 2002 Bioterrorism Act also places emphasis on improving the safety of imported food, including increased inspections, enhanced information management systems and better coordination among agencies and states, and increased research on detection technology.\textsuperscript{222}

In addition to legislation, President Bush issued twenty-one Homeland Security Presidential Directives (HSPDs) designed to implement national security objectives,\textsuperscript{223} some of which implicate food security. The Department of Homeland Security (DHS) has taken the lead in developing broader, generic organizational plans to deal with national emergencies, parts of which are relevant to food security preparedness. The Food and Drug Administration (FDA) and U.S. Department of Agriculture (USDA) are

\textsuperscript{220} President Clinton established the Council through Executive Order in 1998. See 63 Fed. Reg. 45661 (Aug. 25, 1998). The Council initially consisted of the Secretaries of Agriculture, Commerce, and Health and Human Services (HHS), the Director of the Office of Management and Budget (OMB), the Administrator of the Environmental Protection Agency (EPA), the Assistant to the President for Science and Technology/Director of the Office of Science and Technology Policy, the Assistant to the President for Domestic Policy, and the Director of the National Partnership for Reinventing Government. Although, the Council issued a strategic plan for food safety, it did not address food security in the plan issued prior to the September 11 attacks. President Bush added the Secretary of the Department of Homeland Security through Executive Order in 2003. See 68 Fed. Reg. 10619 (Mar. 5, 2003).

\textsuperscript{221} Public Health Security and Bioterrorism Preparedness and Response Act of 2002, Pub. L. No. 107-188 § 301 (2002). Title III of the Act deals with the safety and security of the food supply.

\textsuperscript{222} Id. § 302, codified at 21, U.S.C. § 381(h).

the two agencies with primary responsibility for carrying out security mandates related to food. In addition, all three agencies (DHS, FDA, USDA) participate in several cooperative initiatives. The following sections analyze the four most important DHS actions directed to food security programs.

1. The National Incident Management System (NIMS) and the National Response Framework (NRF)

Homeland Security Presidential Directives, HSPD-5\(^ {224}\) orders the DHS to develop plans to manage a domestic security incident. Specifically, HSPD-5 requires DHS to establish a National Incident Management System (NIMS) that provides for a standardized, coordinated response to a national incident.\(^ {225}\) NIMS is not “an operational incident management or resource allocation plan.”\(^ {226}\) Rather, it emphasizes the interoperability of response between and within levels of government through the establishment of an incident command system (ICS), multiagency coordination systems, and public information systems. Specific components include management and responder preparedness, communications and information management, resource management, command and management, and ongoing management and maintenance.


\(^{225}\) Federal Emergency Management Administration (FEMA), NATIONAL INCIDENT MANAGEMENT SYSTEM 3 (Draft) (Aug. 2007), http://www.fema.gov/library/viewRecord.do?id=2961 (“NIMS Draft”) at (15) (stating that NIMS is a “consistent nationwide template to enable federal, state, tribal, and local governments, the private sector, and non-governmental organizations to work together to prepare for, prevent, respond to, recover from, and mitigate the effects of incidents regardless of cause, size, location, or complexity”).

\(^{226}\) Id. at 3.
HSPD-5 requires all federal agencies to adopt NIMS. In addition, localities must adopt NIMS as a prerequisite to receiving federal preparedness assistance.

HSPD-5 also requires DHS to establish a National Response Framework (NRF). The NRF builds on NIMS by creating multi-tiered structures and mechanisms to coordinate agency participation in incident management with states, localities, non-governmental organizations (NGOs) and the private sector, regardless of the scale or type of hazard involved. The NRF contains a core document and three annexes: support, emergency support function (ESF), and incident.

ESF-11 contains planning mechanisms for food supply security to ensure adequate nutrition in a time of crisis. Nutrition assistance includes “determining nutrition assistance needs, obtaining appropriate food supplies, arranging for delivery of supplies, and authorizing disaster food stamps.” USDA’s Food and Nutrition Service (FNS) is responsible for coordinating and executing assistance, including determining nutritional assistance needs, obtaining and transporting appropriate food supplies, authorizing a disaster food stamp assistance program, and working with state and voluntary agencies to develop an operational plan that assures delivery of wholesome

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227 Id.
228 Id.
230 NIMS Draft, supra note 225, at 12.
231 Id.
233 Id. at 4. See also USDA Food and Nutrition Service, http://www.fns.usda.gov/disasters/disaster.htm. The USDA’s critical infrastructure and key resources protection plan, states that the Farm Services Administration (FSA) and Agricultural Marketing Service (AMS), also contribute to coordination and deliverance of assistance. See USDA, et al., Agriculture and Food, Critical Infrastructure and Key Resources Sector-Specific Plan as input to the national infrastructure protection plan (May 2007) http://www.dhs.gov/xlibrary/assets/nipp-ssp-ag-food.pdf at 60.
food to the correct location. In the event commercial channels are disabled, the FNS contemplates both individual and congregate meal service, except in cases where pandemic flu would make congregate feeding unwise. Accordingly, the FNS must establish logistical links with long-term congregate meal services. Although not entirely clear from available documents, it appears that the FNS plans to distribute food through existing commodity distribution channels. Although certainly the most efficient method in light of our nation’s current food distribution system, terrorist or other disruptions to the commodity distribution system could foil existing FNS emergency plans and would require implementation of alternative food distribution channels. The

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FNS, however, has not disclosed contingencies acknowledging the need to develop or encourage use of these non-traditional channels.

At the local level, there is no evidence that the FNS has devised any educational programs as part of ESF-11, or other parts of the NRF, to teach individuals and families about food self-sufficiency, such as gardening or home processing of food (e.g., canning, dehydrating).\(^{238}\) Furthermore, the ESF does not discuss the role or functioning of local and regional food networks in a time of crisis. It is in these areas where states and localities have the opportunity to make a significant contribution to crisis response. Specifically, states and localities could strengthen local and regional food networks as part of a resilient food supply system. In the event of a national or otherwise large catastrophe, it is likely that the source of the contamination/food channel disruption would have little direct effect on a given local production. In the event of a localized event of animal disease and quarantine from a bioterrorism incident, states could implement a distribution plan to assist the disrupted local food supplies. The authors do not argue that local food should supplant entirely the current system. Rather support to develop and enhance efficiency of local and regional networks can and should supplement traditional food supply channels prior to a crisis event. This will increase system resiliency and, at the time of crisis, allow the government to devote resources to other issues.

Development of supplementary food supply chains that incorporate local/regional production requires prior planning and government support. For example, the Illinois

\(^{238}\) The current household-level food system has tremendous potential. For example, households and community gardens generated roughly $18 billion worth of fruit and vegetables in 1989. Dahlberg, supra note 14, at 82. (Note to editor: a better cite and statistics might be forthcoming from the National Gardening Association—awaiting email reply from NGA research director).
Food, Farms and Jobs Act\textsuperscript{239} established a task force to examine steps the government could take to encourage development of local food systems. This intent of this act, however, was not food security planning, but rather economic development. The issues identified by the task force to encourage local food networks from the economic development perspective could apply in the food security context. In other words, improving food security via development of local food supply chains will not \textit{a priori} have a negative effect on the economy. Rather, a well designed system can benefit the local/regional economy, while simultaneously improving the resiliency of the food supply.

A functioning regional food system in a time of national crisis can also mitigate potential failures of the national distribution system—an event none of the NIMS or NRF planning mechanisms fully contemplates. Current planning focuses on reaction to an isolated event and assumes a relatively rapid resumption of status quo in the food distribution system. Planners, however, should at least consider the possibility of long-term food shortages, perhaps even those as extensive as in World War II, and a general failure of transportation networks. In such extreme instances, the FNS could consider even the possibility of requisitioning items from intact local food systems. Moreover, FNS contingency plans could resurrect frameworks for food coupons/rationing, communal feeding (e.g., modify the school lunch program--de-linking it from commodity agriculture), and implement educational programs for “victory gardening.”

In sum, a functioning local/regional food system creates valuable options for government responses to food emergencies. The structures, however, must be in place well before the crisis-causing event.

2. Critical Infrastructure and Key Resources (CIKR) Protection

Building on HSPD-5, the President issued HSPD-7 (Critical Infrastructure, Identification, Prioritization and Protection) in December 2003. Under the directive, DHS must prepare a national plan for critical infrastructure and key resources protection (CIKR). In 2006, DHS issued the National Infrastructure Protection Program (NIPP) to guide a unified federal effort in protecting CIKR. CIKR protection and restoration also is integrated into the National Resource Framework (NRF).

The NIPP contains non-sector specific, general guidelines for CIKR protection. The NIPP recognizes that in order to ensure an effective program over the long-term, localities also must develop CIKR protection and recovery plans across sectors (e.g., transportation, food and agriculture).

HSPD-7 designates USDA and HHS (FDA) as sector-specific agencies responsible for protection of critical agricultural and food resources. USDA and FDA must identify, prioritize, assess, remediate, and protect the critical infrastructure for which they are responsible, in coordination with the private sector. To accomplish this, sector-specific agencies must create sector-specific plans (SSPs), which become part of the NIPP.

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241 Id. at (27).
244 NIPP, supra note 242, at 80.
245 HSPD-7, supra note 240, at (18)(a)-(b).
246 Id. at (24)-(35).
USDA and FDA issued the joint agriculture and food sector-specific plan (USDA AF-SSP, FDA AF-SSP) in May 2007, covering resources “from field to table.” The AF-SSPs conclude that the “extensive, open, interconnected, diverse and complex” nature of the US food and agricultural system make it difficult to protect. Moreover, the complexities of food processing and technologies add to the challenge. The plan is divided into two parts: the USDA portion (meat, poultry and eggs) first, followed by the FDA portion (all other food). The USDA’s AF-SSP makes the assumption that the sector cannot “feed the nation” without a functioning chemical input and transportation services industry—a questionable proposition in light of some potential terrorist threats.

In order to coordinate the AF-SSP between levels of federal, state and local governments, and within the federal government, the agencies created a Government Coordinating Council (GCC) was created. The GCC consists of officials from DHS, FDA, USDA, Department of Defense (DOD), the Environmental Protection Agency (EPA), national associations of state health, agriculture, and animal health officials, the National Association of County and City Health Officials, and the Intertribal Agriculture

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249 FDA AF-SSP, supra note 247, at 11.
250 This division conforms to the agencies’ traditional jurisdictional division between food, meat, poultry and egg products. See generally, Frederick H. Degnan, The Regulation of Food Safety, in 1 FUNDAMENTALS OF LAW AND REGULATION 161-203 (1997) (describing the role of the FDA in food safety regulation); Philip C. Olsson & Dennis R. Johnson, Meat and Poultry Inspection: Wholesomeness, Integrity, and Productivity, in 1 FUNDAMENTALS OF LAW AND REGULATION 205-236 (1997) (describing the role of the USDA in food safety regulation).
251 USDA AF-SSP at 247.
252 Id. at 15-16.
Council. The sector coordinating council (SCC) coordinates private policies between sectors that relate to agriculture and food, and is divided into 7 sub-councils: producers/plants; producers/animals; processors/manufacturers; restaurant/food service; retail; warehousing/logistics; agricultural inputs and services. One of the goals of the SCC is to ensure that state and localities can react effectively to a crisis.255

The first task of USDA and FDA in their respective SSPs is to identify agriculture and food assets.256 Once identified, the responsible agencies use the CARVER+shock method to calculate risk.257 CARVER is an acronym used to ascertain the appeal of a certain target: criticality, assessibility, recuperability, vulnerability, effect, and recognizability.258 “Shock” is a measure of the combined health, economic and psychological impacts from an attack.259 The responsible agencies, after asset identification and risk assessment, must prioritize protection.260 The Agriculture and Food Criticality Project, comprised of subject matter experts across disciplines and overseen by the SCC and GCC, calculates criticality as part of the prioritization process.261 How states prioritize assets varies, but is guided by the DHS Grants and Training Program.262 While some of these grants deal with food issues (e.g., community

253 Id. at 16.
254 Id.
255 Id. at 23. FDA AF-SPP, supra note 247, at 16.
256 Agricultural and food assets identified under the USDA’s AF-SSPs are compiled in the National Asset Database (NADB). See USDA AF-SPP, supra note 247. FDA uses other databases to collect information on assets within its regulatory jurisdiction. See FDA AF-SPP, supra note 247, at 24-26.
257 USDA AF-SSP, supra note 247, at 3 and Appendix 5; FDA AF-SSP, supra note 247, at 35.
258 USDA AF-SSP, supra note 247, at 3. FDA AF-SSP, supra note 247, at 43.
259 USDA AF-SSP, supra note 247, at 3.
260 Id. at 27; FDA AF-SSP, supra note 247, at 45-46. How much at-risk these identified assets are is often confidential. USDA AF-SSP, supra note 247, at 22.
261 Id. at 28. FDA AF-SSP, supra note 247, at 17.
262 USDA AF-SSP, supra note 247, at 28.
feeding centers for the homeless), none appear to address agriculture and food asset prioritization.263

The USDA’s AF-SSP clearly identified food distribution as a potentially vulnerable asset.264 The plan, however, makes no reference to the role of regional and local food systems in distributing food. Rather, the agency contemplates that:

[i]n the event of a disaster declared by the President and as part of the [ESF] 11, AMS, FSA, and FNS collaborate with the private sector-including the commercial market, commercial distributors, and warehouse owners-as a part of the commodity procurement and distribution process to manage and coordinate the delivery of commodities to organizations such as the American Red Cross or the Salvation Army. These charitable and private voluntary organizations distribute the food to disaster victims.265

In neglecting to identify local and regional food system capabilities in their respective SSPs, the agencies missed an opportunity to bring together DHS, USDA, FDA and the states to plan how regional and local food networks could be activated in an effort to support an area hard-hit by acute crisis. Moreover, if states were to assess their local and regional capabilities, planners could integrate the results into a broader response plan. One interesting concept (in need of further discussion) could be the development of interstate compacts for the provision of food. For example, a Florida/Illinois Compact, whereby Florida agrees to provide produce in return for grain and animal products.

263 DHS Grants (http://www.dhs.gov/xgovt/grants/index.shtm); FEMA grants (http://www.fema.gov/government/grant/index.shtm). Both the USDA and FDA have implemented the ALERT food defense awareness initiative, which can apply at all stages of the food chain. See FDA AF-SSP, supra note 247 at 47. Components of ALERT include: assure, look, employees, reports and threat. ALERT advises food suppliers to assure themselves that they source supplies and ingredients from safe and secure sources, and to look after the security of the ingredients and products within the facility. It further requires that food suppliers know the persons who go in and out of the facility, to be ready to report on the security of the facility, and to know how to report security threats. Id.
264 USDA AF-SSP, supra note 247, at 59.
265 Id. at 60 (emphasis added).
One possible avenue to address this planning deficiency is the annual requirement to submit food security research and development (R&D) plans. HSPD-7 requires the SSAs to submit yearly R&D plans for increasing food security,\(^{266}\) and DHS maintains a National Center for Food Protection and Defense to conduct research that includes food supply chain and economic analysis.\(^{267}\) Future R&D efforts could investigate the local/regional food system capabilities.\(^{268}\)

3. HSPD-8

A third directive, HSPD-8, ordered DHS to set national preparedness goals and to develop preparedness assistance programs for state and local governments.\(^{269}\) DHS finalized its HSPD-8 Guidelines in September 2007,\(^{270}\) describing them as “umbrella documents that collate many plans, strategies, and systems into an overarching framework” referred to as the National Preparedness System.\(^{271}\) The National Preparedness System includes the NIMS, NIPP, and the National Response Framework discussed in previous sections.\(^{272}\)

\(^{266}\) Id. at 63.

\(^{267}\) Id. at 67. For a list of projects on systems analysis, see http://www.ncfpd.umn.edu/research/systems_strategies.cfm. The food and agriculture SSAs have organized their R & D into specific areas, including response and recovery, and advanced design of infrastructure and systems. USDA AF-SSP, supra note 247, at 64. In addition, FDA’s CFSAN conducts scientific research relates to prevention and mitigation strategies, and testing in conjunction with its Food Defense Research Initiative, providing another opportunity for food system research. Id. at 72, 75.

\(^{268}\) Id. at 64.


\(^{271}\) Id. at 2.

\(^{272}\) Id.
The Guidelines encourage localities to engage civic organizations in preparing for, among other things, distribution of goods.\textsuperscript{273} The DHS guidelines set planning priorities, one of which is citizen preparedness.\textsuperscript{274}

Within the Guideline framework, DHS has identified 15 scenarios, some of which could create regional and/or national disruptions in food supply and distribution, including pandemic influenza, natural disaster (e.g., hurricane, earthquake), foreign animal disease, and food contamination.\textsuperscript{275} Unfortunately, DHS does not consider acute drought or flooding, which could drastically curtail food production and subsequent national distribution of staple food, as one of the national planning scenarios.

Within the context of the identified scenarios, a parallel planning priority is citizen preparedness. The Guidelines encourage localities to engage civil organizations in preparing for, among other things, distribution of goods.\textsuperscript{276} The Guidelines provide a skeleton diagram for assessing preparedness based on capabilities, which localities and regions could use to evaluate and plan for food security.\textsuperscript{277} Preparedness is measured by “capabilities,” which consists of National Planning Scenarios, Targeted Capabilities List (TCL), and Universal Task List (UTL).\textsuperscript{278} The TCL contains tasks that governments can use in general planning, whereas the UTL contains tasks that, if achieved, can be used to respond to any of the 15 scenarios.\textsuperscript{279}

4. Citizen Preparedness

\textsuperscript{273} Id. at 4.
\textsuperscript{274} Id. at 20-21.
\textsuperscript{275} Id. at 31-32.
\textsuperscript{276} Id. at 4.
\textsuperscript{277} Id. at 4.
\textsuperscript{278} Id. at 33.
\textsuperscript{279} Id. at 10, 20.
FEMA issued an in-depth guide to citizen preparedness in 2004. Unfortunately, the only guidance related to food recommends that citizens keep a 3-day supply on hand. In fiscal year 2008, DHS issued guidance under the Homeland Security Grant Program that included $14.5 million directed to states for their Citizen Preparedness Programs (CPPs). Citizen Corps and local Citizen Corps Councils (CCCs) implement CPPs.

The Corporation for National and Community Service (CNCS), an independent federal agency, assists local CCCs in developing programs and preparedness training. Neither the CPPs, nor CNCS, have programs dedicated specifically to achieving individual or local food self sufficiency. CCP planning bodies, however, could and should look back to the Victory Garden Program’s coordination of structures and educational efforts to improve household food security preparedness. Under the Victory Garden Program, Local Defense Councils charged Garden Advisory Committee’s to improve citizen preparedness and training. In an era where an increasing number of citizens rely on pre-packaged food and restaurants, training in even basic fresh food preparation takes on an even higher degree of importance and should be a part of current citizen preparedness efforts.

B. FDA and USDA Policies

http://www.citizencorps.gov/programs/.
See Section II.B., supra, discussing the Victory Garden Program.
See supra note 116-117 and accompanying text.
The FDA has regulatory authority over approximately 80% of the food sold in the U.S. while the USDA has regulatory jurisdiction over the production and processing of meat, poultry and egg products. FDA’s food security programs, unlike the proliferation of USDA sub-agencies dealing with food security post-9/11, have been placed solely within the Center for Food Safety and Applied Nutrition, Office of Food Defense, Safety and Outreach. A brief discussion of the respective agency initiatives, as well as opportunities for collaborative efforts follows.

In 2003, the FDA issued a food supply threat assessment, focusing on types of contaminants that terrorists could introduce into agricultural and food systems. With these threats in mind, and in light of the 2002 Bioterrorism Act’s requirements, the FDA took four courses of regulatory action to deal with terrorist threats—facility registration, recordkeeping, prior notice of imports, and administrative detention. Domestic and foreign facilities that manufacture, process, produce, pack or hold food for human or animal consumption in the U.S. must register with the Food and Drug Administration (FDA). Prior notification of imported food must be made electronically to FDA within

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291 Roberts, supra note 13, at 208. See also Endres, supra note 28, at 130-35 (discussing recent FDA food safety response plans).
292 Foreign facilities must only register if no further processing or packaging is done outside the U.S. 21 U.S.C. § 350d(b)(3)(A).
a certain time period depending on the mode of entry.\footnote{\textsuperscript{294}} When inspectors suspect contamination that poses a serious threat of harm or death to humans or animals, FDA now immediately detains suspect food. In the past, FDA would request that a state place a temporary hold on distribution until FDA sought “court authority to deal with it.”\footnote{\textsuperscript{295}}

In addition to actions taken under the 2002 Bioterrorism Act, FDA issued a Food Protection Plan in November 2007 as part of its Import Safety Plan.\footnote{\textsuperscript{296}} Likely issued in response to melamine contamination of pet food traced to Chinese raw materials, and highly-publicized \textit{E. coli} outbreaks originating from raw spinach that ended in several illnesses and deaths, the Plan aims to better prevent, intervene, and respond to food emergencies related to both intentional (“food defense”) and unintentional (“food safety”) contamination.\footnote{\textsuperscript{297}} Noting that food imports have risen dramatically, and that ready-to-eat, processed foods account for a growing percentage of these imports,\footnote{\textsuperscript{298}} FDA proposed “building safety in from the start,” working more closely with industry, state, local, and foreign governments to “further develop the tools and science needed to identify

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\footnote{\textsuperscript{296}} FDA, \textit{Food Protection Plan, supra note 288}.
\footnote{\textsuperscript{297}} \textit{Id.} at 1. \textit{See also} A. Bryan Endres, \textit{United States Food Law Update}, 3 \textit{J. FOOD L. \\& POLICY} 253, 276-280 (2007) (discussing FDA responses to E. coli and melamine).
\footnote{\textsuperscript{298}} FDA, \textit{Food protection plan, supra note 288, at 8.}
vulnerabilities and determine the most effective approaches.” It admits in the Plan, however, that the agency “has limited information regarding conditions under which most food is produced in foreign countries.” Accordingly, FDA has emphasized increased corporate responsibility for the food and food ingredients imported.

Domestically, FDA indicated that it will seek additional regulatory authority to require food handlers to take specific steps to prevent intentional contamination (e.g., locks on tanker trucks) and to implement food safety procedures for high-risk foods (e.g., HACCP), as well as to create new food categories within the registration system to better tailor registration with hazard risk. In addition, FDA proposals contained in the Food Protection Plan indicate that the agency will seek additional authority to certify third parties as food inspectors and to require food manufacturers that fail to meet current good manufacturing practices (GMPs) to reapply, and pay for, reinspections.

Finally, when prevention and intervention fail, FDA seeks to improve its response to food emergencies by seeking authority to issue mandatory food recalls and to gain

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299 Id. at 11. The FDA hopes to shift some of the inspection burden to regulatory authorities in exporting countries by requiring electronic import certificates for high-risk foods. Id. at 19-20. FDA will seek authority from Congress to prohibit food imports when its access to the foreign facility for inspection has been denied, limited, or delayed. Id. at 20. In order to detect contamination earlier, FDA will improve reporting systems and deploy improved screening tools. Id.

300 Id. at 11.


303 FDA, Food Protection Plan, supra note 296 at 15.

304 Id. at 18.
increased access to safety and security records during the emergency.\textsuperscript{305} Unfortunately, FDA’s reliance on third party inspection, increased fees, and increased technology may have negative consequences for smaller, locally-oriented growers and processors.\textsuperscript{306} Although regulatory requirements, such as registration, food defense plan, etc., may have a relatively small cost, the marginal value with respect to food security is questionable. More importantly, new technological requirements may have a disproportionate impact on the small farmer and a corresponding negative effect on the development of regional food networks. It is hard to imagine a successful Victory Garden Program bound by 21\textsuperscript{st} Century best available technology requirements.

The bulk of USDA’s food and agriculture crisis response planning derives from the National Response Framework (NRF) and Emergency Support Function 11 (EFS-11) (Agriculture and Natural Resources), as previously explained.\textsuperscript{307} However, the USDA’s Cooperative State Research, Education and Extension Service (CSREES) and the USDA’s Agricultural Marketing Service (AMS) have untapped potential to improve security planning efforts to incorporate local food system networks. CSREES’ role in developing agricultural and food biosecurity education programs could, if properly focused, significantly improve the ability of regions, localities, and individuals to provide their own food security in a time of crisis.\textsuperscript{308} CSREES funds the Extension Disaster Education Network (EDEN)—the land grant universities’ effort to collaboratively

\textsuperscript{305} Id. at 22. FDA proposes eliminating the need to show adulteration. It must currently demonstrate both threat and adulteration. Id. For a critical discussion of FDA’s current recall authority, see Michael T. Roberts, Mandatory Recall Authority: A Sensible and Minimalist Approach to Improving Food Safety, 59 FOOD AND DRUG LAW JOURNAL 563 (2004).

\textsuperscript{306} See Rasco, supra note 7, at 86 (noting that FDA regulations promulgated pursuant to the 2002 Bioterrorism Act require companies to “establish new and relatively complicated procedures”).

\textsuperscript{307} See supra notes 207-219.

\textsuperscript{308} http://www.csrees.usda.gov/nea/ag_biosecurity/ag_biosecurity.cfm.
develop educational resources for disaster preparedness. Part of this work should include coordination with DHS CCPs.

Three other CSREES divisions—Rural Development, Nutrition, and Urban—have programs that could support food system resiliency for disaster preparedness. Rural Development efforts aim to strengthen the capacity and security of communities, including educating decision makers to play an active role in regional and national issues. As described in section IV.A.1, supra, local food systems not only help localities become food secure, but also improve their economic well-being. CSREES’ Nutrition division provides educational programs to encourage informed choices “about food and lifestyles that support their physiological health, economic, and social well-being.” DHS CCPs could work with the Nutritional division to design programs aimed at food self-sufficiency through gardening and home processing. Lastly, CSREES’ urban programs that foster community development could be used to promote food self-sufficiency, particularly because urban residents may be the most vulnerable in a time of food crisis. It is in this respect that many of the techniques to encourage urban food production in post-soviet Cuba could translate to the domestic urban environment.

Specific Cuban programs with translation potential include production incentives, land reutilization, relaxation of legal rules (e.g., zoning) and creation of a city-level “department of agriculture.” Prior to the collapse of Soviet aid, Cuban diets relied on

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310 See supra note 281-284 and accompanying text (discussing CCPs).
311 Of course, some of the Cuban initiatives, such as redistribution of privately-owned fallow land to those willing to engage in agricultural production, would violate numerous Constitutional principles. Other legal issues, such as relaxation of zoning measures to encourage (or even allow) agricultural production within urban/suburban areas, are a relatively simple matter of amending city/county ordinances. Changing restrictive covenants within many planned suburban communities, may require more legal finesse, but remain a feasible option.
imports for fifty-seventy percent of their daily caloric intake.\textsuperscript{312} As an incentive to divert production of cash crops in favor of food crops, Cuba offered direct payments to farmers.\textsuperscript{313} Similar programs in the United States could encourage farmers on the urban fringe to switch from corn/soybean or other regionally grown cash crops to food staples. Land reutilization and promotion of small-scale gardens provided dramatic improvements to the food self-sufficiency of Havana. Production from vacant land, parks, raised beds on paved-over land, and school and hospital gardens, with the support of the newly created Havana Department of Agriculture (including extension agents), now comprise fifty percent of Havana resident’s caloric intake.\textsuperscript{314} Similar land re-purposing is ongoing in some urban areas in the United States,\textsuperscript{315} but these scattered efforts require institutional support and coordination to reach their full food producing potential. In sum, urban and peri-urban agriculture has an untapped potential to supplement the food security requirements of most urban area.

USDA’s Agricultural Marketing Service (AMS) “is responsible for developing quality grade standards for agricultural commodities, administering marketing regulatory programs, marketing agreements and orders, and making food purchases for USDA food assistance programs.”\textsuperscript{316} Under this authority, AMS administers programs such as the National Organic Program, food marketing agreements, product grading, and promotion of food products.

\textsuperscript{312} See Benjamin, \textit{supra} note 143, at 60.
\textsuperscript{313} See \textit{supra} note 173 and accompanying text.
\textsuperscript{314} See \textit{supra} notes 193-207 and accompanying text.
\textsuperscript{315} See, e.g., Rutgers Urban Gardening Program, http://essex.njaes.rutgers.edu/ug/.
\textsuperscript{316} USDA, Agricultural Marketing Service (AMS) Overview, http://www.usda.gov/wps/portal/utm/p/_s.7_0_A/7_0_1OB?contentidonly=true&contentid=AMS_Agency_Splash.xml&x=13&y=10.
Product labels may have a powerful effect in the market, stimulating demand for desired traits and motivating supply chain transformation to extract additional revenues. To this end, AMS, in possible conjunction with the FDA, could devise a standard, mark or voluntary certification program that allows the producer or processor to represent itself as participating in a local or regionally secure food system. This would provide the private sector with incentives to develop and enhance local and regional food systems and communicate to the public the positive externalities of selecting local food. DHS could participate in developing program criteria by using the information and strategies gathered from NIMS, NRF and SIPP efforts. In the absence of AMS action, states could devise a state-level version of this program. The $38 billion organic food industry developed under similar state level programs, later preempted by the 1990 Organic Food Production Act.

Two food crisis responses not addressed in current planning documents are price controls and rationing. Although anathema to capitalistic societies, this country previously has adopted these strategies to meet pressing situational needs. In fact, price manipulation in the agricultural production market is an accepted government practice. Although the authors do not argue that the government should adopt rationing and price controls, planners should at least anticipate their possibility. Price controls and rationing most likely would be initiated at the federal level. State and local governments, however, should include the possibility of such programs in their respective plans. Local authorities down to the school board level, during both World War II and Cuba’s struggle

318 See A. Bryan Endres, An Awkward Adolescence in the Organics Industry: Coming to Terms with Big Organic and Other Legal Challenges for the Industry’s Next Ten Years, 12 DRAKE J. AGRIC. L. 17 (Spring 2007) (discussing history of the organic industry).
for food self-sufficiency, administered federally mandated price controls and rationing.\(^{319}\) A truly comprehensive national food security strategy should at least plan for these relatively drastic measures.

C. Multi-Agency Cooperative Initiatives and State Actions

1. Strategic Partnership Program Agroterrorism Initiative

The Strategic Partnership Program Agroterrorism Initiative (SPPA) was developed by the Federal Bureau of Investigation (FBI),\(^{320}\) FDA, USDA and DHS, in partnership with states and industry, as the primary vehicle to conduct vulnerability assessments of the food and agriculture sector to terrorist attack and to identify gaps and further research needs.\(^{321}\) After an assessment was conducted within various sectors of the production and processing food chain,\(^{322}\) the SPPA identified large-batch processing and animal production under crowded conditions as nodes of highest concern.\(^{323}\) As part of the mitigation strategies, SPPA encouraged industries to develop food defense plans.\(^{324}\) Regional and locally-oriented food supplies, due to their smaller scale, may be better suited to avoid the higher-risk identified by large-batch processing and animal confinement.

2. State –Level Policies: NRF and Food Emergency Response Plans (FERPs)

\(^{319}\) See supra note 92-93 and accompanying text discussing rationing implementation during World War II and supra note 155-160 and accompanying text discussing rationing implementing in Cuba.

\(^{320}\) The FBI is an agency within the Department of Justice (USDOJ).


\(^{322}\) Id. at 5.

\(^{323}\) Id. at 7-8.

The National Association of State Departments of Agriculture has developed a template for state and localities to use in drafting a food emergency response plans (FERP) for integration into the NRF.325 A food emergency, as addressed by the plan, can involve several people over a small area, or a larger area spanning several localities or states.326

One step the template recommends is for states to form emergency management assistance compacts (EMAC) with other states.327 If a state belongs to an EMAC, that state can request support packages.328 The Cooperative Extension Disaster Support Package, which provides education/instruction on food and crops, is one such package.329 Conceivably, additional support packages could include instruction on food self-sufficiency in both near- and long-term scenarios.

As part of the planning process recommended by the template, states should assess various aspects of their food systems (“situations and assumptions”).330 Aspects that would coincide with local food system organization and planning for food self-sufficiency include: the level of local planning and preparedness; rivers and waterways; the depth to groundwater sources; concentration of croplands, livestock, poultry, and food processing; major population centers; and, areas prone to natural disaster.331

326 Id. at v. A food emergency can result from natural disaster or man-made events, or intentional or unintentional contamination of food. Id.
329 Id. at 71.
330 NASDA Template, supra note 323 at Appendix B-3.
331 Id.
Although the majority of this article discusses the role of the federal government, states and localities must play the lead role in assessing and implementing resilient, regionally-based food systems. Due to geographic and climatic variations, a one-size fits all federal program would be doomed to failure. Federal programs, therefore, must support state and local initiatives via direct monetary support or at least regulatory flexibility to scale requirements for regional food supply systems.

V. Conclusion

The extent of food shortages surprised World War II policymakers. Although a federal food bureaucracy surfaced quickly, it took two critical years to develop a functioning food security system. Victory Gardens provided an essential supplement to the nationalized food distribution system, supplying 125 pounds of food for every person.332 By 1944, the Office of Price Administration declared Victory Gardens “a home front necessity.”333 Victory Gardens, in conjunction with allocations, food orders, rationing and price supports achieved food self-sufficiency during this challenging period. Cuba’s food supply system underwent a similar reorganization in the post-soviet era—privatizing some state-owned farms, deploying urban residents to farms to assist harvesting and, most importantly, creating “new farmland” in urban areas.334 By 2000, Cuba surpassed pre-crisis levels of food production and achieved food self-sufficiency.335

Modern day planners need to anticipate potential food shortages arising from a variety of crises and draw upon the lessons learned from World War II and Post-Soviet Cuba. The Public Health Security and Bioterrorism Act of 2002, coupled with multiple

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332 See supra note 132 and accompanying text.
333 See supra note 134 and accompanying text.
334 See supra note 184-207 and accompanying text.
335 See supra note 215-217 and accompanying text.
Homeland Security Presidential Directives, provide an outline for emergency planning. Current plans, however, rely exclusively on the existing national/international food supply chain and ignore the potential of regional and local food systems. As outlined in this article, several existing government programs could, without the need for additional statutory authority, modify current plans to provide support for localized food networks. Specific national food security enhancing examples include: encouragement and elimination of barriers to urban food production, implementation of a “food secure” labeling program for use by regional or local food systems, development of interstate food compacts along regional food sheds, and support for capacity development. In sum, current comprehensive crisis planning must look beyond the commoditized national-level food system and incorporate a more diverse, resilient food supply chain.