

**Themed Content:**  
**Intermediated Marketing  
Channels in Regional Food  
Systems**

**Cite this article:** Dunning R, Day J, Creamer N (2019). Local sourcing and the military: Lessons learned through a university-based initiative to increase local procurement at a US military base. *Renewable Agriculture and Food Systems* **34**, 250–258. <https://doi.org/10.1017/S174217051700045X>

Accepted: 31 July 2017  
First published online: 18 September 2017

**Key words:**

Food system; local food; military;  
procurement; supply chain

**Author for correspondence:**

Rebecca Dunning, E-mail: [Rebecca\\_dunning@ncsu.edu](mailto:Rebecca_dunning@ncsu.edu)

# Local sourcing and the military: Lessons learned through a university-based initiative to increase local procurement at a US military base

Rebecca Dunning, John Day and Nancy Creamer

Center for Environmental Farming Systems, North Carolina State University, Raleigh, NC, USA

## Abstract

The volume of food purchased by the American military makes it perhaps the single largest intermediated market for food in the USA. Consequently, it is not surprising that those seeking to enhance the economic viability of small and mid-scale farms may view military bases as a promising market for locally produced foods. This is a challenging prospect, however, due to the centralized structure of military command, the nature of the military procurement system and federal mandates to obtain products that maximize value at the lowest available cost. This paper describes the US military food procurement system and the work of a 3-yr initiative to increase the amount of locally produced, source-identified products used at a North Carolina military installation. Our experiences serve as a cautionary tale, with this paper designed as both a primer on ‘how it works’ for food procurement at the federal and base level, and a description of our largely unsuccessful attempts to increase the volume of local food products from small-/mid-scale producers moving through the supply chain into base dining halls and restaurants. Based on our experiences, we also make recommendations on possible entry points for local food and farm advocates to work within the existing system to localize food procurement.

## Introduction

The Department of Defense (DoD) spends \$8 billion annually worldwide on food for military personnel. As in the civilian world, food consumed by military personnel consists of a combination of food purchased for preparation at home, and food purchased away from home in restaurants and dining facilities (DFACS). In 2015, the military spent \$5.5 billion on food for the on-base commissary system, which is analogous to civilian grocery stores (L Bands, Personal Communication, 2016, Chief Financial Officer, Defense Commissary Agency, 1 December); \$2.3 billion for institutional food service, primarily for on-base cafeteria dining (M Malason, Personal Communication, 2016, Program Manager, Defense Logistics Agency, 13 September); and \$171 million for food in on-base restaurants, recreation facilities, and child care and school facilities (MWR Bizboard, 2016). The scale of procurement makes the US military food system one of the largest intermediated food markets in the world.

Given the scale of purchasing, and location of military installations in rural areas, it is not surprising that those working in the farm-to-institution movement view military bases as a potentially promising market for locally produced foods. Military bases may be seen as possible ‘anchor institutions’, akin to area hospitals or universities, with large and stable purchasing power that can be harnessed for economic benefit. This can be a challenging prospect, however, due to the centralized structure of military command, the nature of the military procurement system and federal mandates to obtain products that maximize value at the lowest available cost.

This paper describes the structure of the military food procurement system and the work of a 3-yr university-based initiative to increase the amount of local source-identified products at a North Carolina Army installation. The work was conducted as part of a Center for Environmental Farming Systems’ (CEFS) initiative to connect small- and mid-scale producers into the supply chains of large-scale markets, one of these being the military marketplace. Through CEFS work, we learned the constraints faced by military installations as well as possible leverage points for change, and sought to work collaboratively with military and civilian partners to accomplish changes in sourcing. The purpose of this paper is to provide an uncomplicated explanation of a complicated system and potential points of entry for local foods, and to share the outcomes of our own work to develop this supply chain in North Carolina. This document is designed for food system practitioners including Extension personnel and other educators; advocacy organizations, and individuals working to build local food systems; and

© Cambridge University Press 2017. This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted re-use, distribution, and reproduction in any medium, provided the original work is properly cited.

food system researchers seeking an entry point for the study of procurement in the military food system.

We describe three components of the military food system: commissaries (on-base grocery stores), MWR (Morale, Welfare, and Recreation, the component responsible for restaurants, recreation and school food) and dining services. Given space limitations and the initiative's primary focus on the dining hall supply chain, we focus on our experiences with dining, while also providing insight into the structures of procurement for the MWR and commissary systems. The methods used to gather data for this paper were document review and contact with administrative personnel in the military food supply chain, supplemented by participant observation in the course of meetings conducted with military food service personnel and with the contracted vendors for dining and MWR. We begin with background on the project itself and an explanation of food service management in Army and Marine Corps installations, with specific reference to what decisions can be made that affect procurement at the federal and local installation (base) level. We then detail the approaches and outcomes of the university-based initiative's work with a large Army base in North Carolina, and with the food vendors upstream in that supply chain.

To our knowledge, this is the first paper to provide detail on the structure of military food service in terms of an intentional effort to create local food supply chains from small- and mid-scale food producers into the food service operations at a US military base. This paper does not include the DoD Fresh Fruit and Vegetable Program (DoD Fresh), which began in 1993 and permits public schools to order fruits and vegetables contracted by the DoD through the same processes as it uses to supply produce to military bases. Prior research on military food systems has focused largely on nutrient intake of military personnel and its impact on performance (Bingham et al., 2012; Ramsey et al., 2013), and troop acceptability of food items (Champagne, 2001). Absent in the research literature is consideration of how food is procured. Grasso (2013) provides a brief but informative 10-page memo on military food procurement. Two interesting historical treatments reveal the influence of the military on civilian food systems and food supply chains. De Salcedo (2015) traces the historical origin of shelf-stable processed foods to the work of the US Army Natick Soldier Research, Development and Engineering Center (an entity discussed later in this paper). Livingston (1979) explains the industrialization of food preparation and distribution, the 'divorce of food production from food service', as inexorably linked to military field operations and mass military feeding. In 2015, USDA's Agriculture Marketing Service and the US DoD commissioned a helpful guide on how to establish an on-base farmers market (Edmonson et al., 2015) based on experiences in North Carolina and elsewhere.

### Project Background

The CEFS initiative to localize military food procurement centered on work with Fort Bragg, one of the largest military installations in the world, located in Fayetteville, North Carolina (115 km south of Raleigh). Work with the base began in the mid-2000s as CEFS conducted a series of meetings across the state aimed at developing a statewide strategic action plan for 'building a sustainable local food economy in North Carolina' (Center for Environmental Farming Systems, n.d.). This work

included identifying strategic partners and leverage points for subsequent action based on the plan. During that multi-year project, a series of working groups formed, one of which focused on institutional food service. Participating in the working group was a representative from the Environmental Section of the Fort Bragg Public Works Directorate. This office had been engaged in a 'Sustainable Fort Bragg' initiative to institute sustainability practices on base. On the working group was also the contracted produce supplier for Fort Bragg DFACS.

The working group identified Fort Bragg as a potential institutional anchor for the purchase of locally produced foods and saw an opportunity to develop a model for military procurement. Local sourcing was understood as a way for Fort Bragg to simultaneously engage in a sustainable practice (with local sourcing equated to a sustainability practice), achieve greater food security, contribute to the local economy and maintain undeveloped working agricultural lands around the base, which are desirable as a buffer against development and for training purposes. Promotion of local sourcing from farms also aligned with other local, regional and national initiatives, including Eastern North Carolina's Food and Fuel for the Forces Program (PlanIT East, n.d.), the Southeast Regional Partnership for Planning and Sustainability (SERPPAS, n.d.) and the Army's Compatible Use Buffer Program (National Guard News, 2013). Each of these has as part of its mission the maintenance of undeveloped lands contiguous to bases and in flight paths. As a result of the seeming confluence of interests, Fort Bragg was included as a collaborating organization in a USDA proposal submitted for the CEFS initiative, with a member of the Environmental Section of the Public Works Directorate providing a letter of support.

The CEFS project and work with Fort Bragg began in mid-2013, with a kickoff meeting arranged by personnel in the Environmental Section, and attended by representatives from MWR, the commissaries and the DFACS. The initiative focused on increasing local sourcing by the DFACS and MWR, largely because the primary vendor for MWR and the fresh produce vendor for dining had also agreed to be project collaborators. Project staff held kickoff meetings and had extensive communications with these vendors over a 2-yr period. Three staff turn-overs for the base's sustainability officer hampered progress. In spite of Fort Bragg hosting the first annual project meeting and serving a locally sourced lunch to the 50 participants in their MWR facility, little progress was made in the regularization of local sourcing by dining or MWR. With the singular accomplishment of establishing an on-base farmers market (NCGT News, 2014), contact between project staff and personnel at Fort Bragg ended in the third year. Shortly thereafter staff redirected resources to work with a North Carolina Marine Corp installation using a more holistic approach to raise base awareness and interest in local agriculture. These later efforts focused on building relationships between base dining and a near-base incubator farm used by current service members and veterans; expanding the number and variety of local vendors in the on-base farmers market; and driving farmers' market attendees to other near-base sources of local food, such as local seafood.

In the following sections, we describe the structure of military dining, the policies and procedures that affect dining across all military branches at the federal level, and the installation-level procurement processes for dining at Army and Marine bases. We then detail the university-based initiative's efforts to localize food procurement at the Army installation.

## Cafeteria Dining

Individual base DFACS are governed by rules and operating procedures determined at the federal level. While numerous agencies, organizations and echelons of authority comprise military dining services, three key components at the federal-level shape installation-level decisions, including procurement decisions: the Armed Forces Recipe Service (AFRS), the Joint Culinary Center of Excellence (JCCoE) and the Defense Logistics Agency (DLA). These offices determine *how* foods are used, using prescribed recipes, menu standards and training; and *what* foods can be procured.

Development, improvement and standardization of recipes for foods prepared and served in military DFACS is the responsibility of the AFRS at the US Army Natick Soldier Research, Development and Engineering Center, a part of the DoD Combat Feeding Program. The Joint Services Recipe Committee (JSRC) provides guidance and oversight of the AFRS recipe files and supporting instructions. Membership in the Joint Services Recipe Development Committee consists of representatives from each of the military services, with advisory member representation from the Office of the Surgeon General, the Joint Subsistence Policy Board, Public Health Command, the DLA and the US Department of Agriculture, among others. Each military installation chooses from among the hundreds of recipes in the AFRS recipe files to prepare daily meal offerings.

While individual installations across the branches of the military draw on the same set of recipes, each military branch (Marines, Air Force, etc.) creates its own set of menu standards. These standards include the minimum number of meat and vegetable choices for each meal; the number and type of beverage choices; the number of desert choices, etc., that will be offered daily. Each of the branches at the federal level also defines its own set of food item specifications (e.g., hamburger 90% lean and available in 12, 6-ounce pack sizes). These specifications determine the items listed in the order catalogs used by base personnel. The items in these catalogs are ordered from 'prime vendors', wholesale/distributors that have been selected through a bid process. Installations select recipes from the AFRS to fulfill the menu standards approved by the respective military service.

Training for food service personnel across the military services is designed and conducted by the JCCoE, housed in the US Army Quartermaster Corps at Fort Lee, Virginia. The JCCoE is organized into three directorates. The Operational Directorate is responsible for the central direction, management and oversight of all food-related operations. The Special Programs Directorate administers culinary competitions and awards programs. The Joint Culinary Training Directorate is responsible for the development, management and oversight of food service training. Each of these directorates covers all branches of the military.

Procurement decisions are made within the DoD's DLA. The DLA Troop Support Division (DLA-TS) is responsible for food, clothing and medical materials used by the military worldwide. DLA-TS designs and administers contracts with vendors to provide food and food service equipment to military bases.

Potential vendors bid for DLA contracts as specified in the Defense Logistics Acquisition Directive (DLAD). There are three categories of food vendor contracts: Contracts with Prime Vendors (broadline food distributors for meat, canned foods, frozen foods, processed foods, dry goods, etc., often referred to as Subsistence Prime Vendors); contracts for 'Market Fresh' items, subdivided into three categories: fresh fruits and vegetables,

bread, and dairy; and contracts for beverages (primarily soft drinks). Contracts are typically made for 12–18 months with the possibility for one or more renewals. The organization of contracting is regional, with the continental US divided into three zones (south, east and west), and contracts covering a group of installations. (The following website identifies points of contact for each region for information on contracts, including the existing contracted Prime and Market Fresh vendors: <http://www.dla.mil/TroopSupport/Subsistence/Foodservices/Regions/CONUS.aspx>. A complete listing of all food service contracts and solicitation can be found at this address: <http://www.dla.mil/TroopSupport/Subsistence/FoodServices/Regions/ContractSearch.aspx> Scroll toward the bottom of the list to see solicitations for contracts that have not yet been awarded).

Potential prime vendors are typically very large national or multi-region broadliners. Broadliners are wholesale/distributors that carry the gamut of products required for food service, from napkins to kitchen tools to frozen meats. Sysco and US Foods are the largest of these and have a national presence. Broadliners may negotiate prices and make contracts with food manufacturers. Typically, the larger the broadline vendor, the more favorable pricing it can negotiate.

Among the items submitted during the bid process by potential prime vendors is a fixed price proposal for a 'market basket' of products. The North Carolina solicitation, for example, defines its market basket as 'the highest usage items as well as items listed under the Basic Daily Food Allowance (BDFa)'. To illustrate DLA-TS's desire to achieve the lowest cost, bidders are informed that if they carry '...a variety of brands for the same item, the price submitted shall be for the lowest price[d], technically acceptable, item that meets the Government's minimum requirements...'. The selected prime vendor must sell the market basket items at the original contracted 'fixed price' unless it receives approval from DLA for a price increase. The vendors eligible to bid on this type of contract will necessarily be very large in scale—the prime vendor must supply a wide range of products and service an entire region. (A prime vendor solicitation for North Carolina, which is incorporated into the executed contract with the selected prime vendor, Sysco Raleigh, can be viewed at this web address: <http://www.dla.mil/Portals/104/Documents/TroopSupport/Subsistence/Food%20Services/Regions/East/PV/13R0047.pdf>. The actual contract itself can be viewed here: <http://www.dla.mil/Portals/104/Documents/TroopSupport/Subsistence/Food%20Services/Regions/East/PV/14D3030.pdf>).

DLA-TS draws on the lists of contracted items in each region to create regional online catalogs of all the food items and products necessary to prepare the recipes found in the AFRS. This online ordering system is known as STORES (Subsistence Total Order and Receipt Electronic System). Each of the military services develops and maintains its own food information system that interfaces with the STORES catalog of items. Food items in the catalog are given either a National Stock Number (NSN) or a Local Stock Number (LSN). The 'national' and 'local' designation does not refer to geography. LSN items generally refer to items listed and available for purchase by military installations, while NSN items are also included in the catalogs of other governmental entities (e.g., State Department). Note that no brand names are given in the catalog. STORES specifies only the type, quality and pack size of a product for many NSN and LSN products, which permits the prime vendor to provide any brand that fits the description—for example, '100% beef hotdogs, 12-count'. This allows the prime vendor to substitute items as they become available at a lower cost

from alternative food manufacturers (Additional information on STORES is available at this address: <http://www.dla.mil/Portals/104/Documents/TroopSupport/Subsistence/Food%20Services/pvwelcome.pdf>). When cheaper items become available, this cost savings may be passed on to the military, enhancing the reputation of the prime vendor.

Each branch's computerized food information system is linked to STORES. The quantity and cost of food ordered depends upon three factors: the AFRS-approved recipes and ingredient list, the BDFA (the per person food budget defined in congressional appropriations, which in 2016 in North Carolina was \$10.52 for three meals) and the products appearing in the vendor catalogs. The system calculates the order quantities based on the meal headcounts for each recipe, and then calculates the costs to ensure that the total cost is within the BDFA.

In addition to DLA-TA's relationship with broadline foodservice prime vendors, DLA-TA also interacts directly with food manufacturers through its National Allowance Pricing Agreements (NAPA) program. In the NAPA program, the manufacturer offers a discount on products purchased by military installations for use in DFACS. In order to qualify, a manufacturer must demonstrate demand for its product from military customers and/or a firm commitment by a military installation and an identified prime vendor (which will distribute the product to the installation). Companies approved by DLA-TS to participate in the NAPA program must also become members of One2OneUS.com, which tracks all DLA-TS food orders to ensure NAPA allowances have been passed along to DLA-TS. One2OneUS.com annual membership fees range from about \$3300 to \$10,000. For NAPA items, the prime vendor agrees to bill the government the invoice price minus the NAPA allowance and initiate a bill back to the manufacturer to recover the allowance. NAPA products are delivered to base by the broadliners that hold the prime vendor contract (Additional information on the NAPA program, including the complete list of NAPA items in the STORES catalog and instructions on how a food producer may enroll, can be found on the DLA-TS website at this address: <http://www.dla.mil/TroopSupport/Subsistence/FoodServices/mpanapa/napa.aspx>).

In summary, the military's selection of vendors is highly centralized, with decisions made at the federal rather than base level. Vendors are selected based on price, and prices are typically lowest for large broadliners with the capacity to purchase and deliver a diverse range of products in volume. As mentioned above and described in more detail below, food service managers at the installation level have the ability to add items to the STORES catalog, such as a locally sourced product. Food managers could also request the substitution of an existing STORES product with a locally sourced version. Requests to add or change items in the catalog travel up the chain of command from the installation to DLA-TS, which then directs the prime vendor to carry this item. The installation must wait until the item appears in STORES before it can be ordered. The possibility of this occurring largely depends on price, because contracts are fixed price. Substituting items in STORES has repercussions beyond a single installation, since prime vendor contracts are regional. Because of this regional nature of the contract, the local product vendor must have the capacity to supply in volume.

### *Procurement decisions at the installation level*

An Army installation was the subject of much of the efforts of CEFS' work to facilitate entry of locally grown products into a

military supply chain. Below we provide information on the structure and operations of military food service at Army installation dining halls, as well as at Marine Corps installations as a point of comparison.

The overall responsibility for dining management on individual Army bases is held by the base Food Program Manager (FPM) (A list of the FPMs at each Army installation can be found at the following url: [http://www.ebmpubs.com/GFS/GFSdata/2016\\_GFS\\_Almanac/17\\_ArmySubsistence.pdf](http://www.ebmpubs.com/GFS/GFSdata/2016_GFS_Almanac/17_ArmySubsistence.pdf)). The FPM directs and manages food service programs on base 'to ensure that maximum results are achieved at the least cost to the Government. The Marine Corps has an analogous position, the Food Service Operator (FSO). Food service operations are carried out either by base personnel ('self-operated') or contracted to a food service management company. Fort Bragg is a self-operated program. Marine Corps bases in NC, and nationwide, are operated by Sodexo. The Marine Corps has two additional oversight positions for dining: a Contracting Officer Representative and a Technical Representative. These positions are appointed by and report to the Procurement Contracting Officer at Marine Corps Headquarters. This federal-level officer administers all the food service contracts with Sodexo, while the installation-level representatives serve as the primary authority for evaluating on-base performance of the contract. The FSO may also serve in one of these additional roles.

Dining management at installations uses menu cycles that have been developed by the dining facility managers using recipes from the AFRS, and based on menu standards and within the financial constraints of the BDFA. Army menus are reviewed by each installation's FPM and Food Service Management Board (FSMB). The FSMB, which meets at least quarterly and includes as voting members the FPM, a base dietitian and others, provides for information exchange between food service personnel, the food service management staff and the prime vendor suppliers. The Marine Corps has an analogous body, the Menu Planning Board (MPB). With an approved menu cycle, the designated person at each dining facility orders the necessary food items using STORES. As noted above, STORES only provides generic descriptions of each food item, packing size, an item number and cost. Manufacturing brands and origin are not included.

There are three means by which food producers can seek inclusion of their products in the STORES catalog and thus become eligible for purchase by installation-level food service personnel. The food producer can contact DLA-TS and enter into a NAPA (the NAPA program was described, above). This does not ensure the product will be purchased; it only provides it with a unique NAPA stock number. Secondly, the food producer can contact a contracted prime vendor directly and ask that their product be used to fulfill orders for a matching NSN or LSN item (By clicking on one of the zones on the map at this website, one can view all Prime and Market Fresh vendor contracts and solicitations and thus identify the prime vendor to contact. <http://www.dla.mil/TroopSupport/Subsistence/Foodservices/Regions/CONUS.aspx>). For example, a food producer making salsa can approach the prime vendor to have the current STORES salsa product substituted by the new product. Because the origin/brand names of items are not listed in the STORES catalog, the prime vendor is on a fixed price contract and lowest price is the driving factor in choice of suppliers, the price for the product will nearly always be at or below what the prime vendor is already paying for the item. If it is not, the prime vendor must ask for a contract amendment to change the price, or absorb the cost difference itself.

A third option for a vendor occurs at the installation level. A food producer can approach the installation FPM or FSO to make the argument that the product they offer is of superior value, either in terms of cost, taste, ease of preparation, etc., compared with what is currently being used. While lowest price is the primary driver, best value may not necessarily mean the lowest price; considerations such as unit or case cost versus product yield and serving cost, aftermarket or value added services, manufacturer support in the form of training, menu building, and recipes and point of sale material are part of the equation. If a decision is made to add a new product, then the FPM will contact the prime vendor to see if it currently stocks the item and, if not, request that it do so. As with any new product, the installation must wait until the item appears in STORES before it can be ordered. For Marine Corp bases, local vendors can approach Sodexo. While Sodexo cannot buy food directly from local producers, it can request that the prime vendor add the product to the catalog (again following protocols with requests going through DLA-TS).

An installation FPM with an interest in procuring local source-identified product has the ability, working within system constraints, to bring locally sourced products into base dining halls. However, price constraints and the time investment required to take these requests up the chain for approval limit the ability and willingness of FPMs to work with local vendors. Because purchasing local foods might have other ‘values’ to the base (e.g., preserving nearby undeveloped lands), larger issues could influence this willingness.

### *Efforts to increase local sourcing: demand side*

The CEFS initiative focused efforts on increasing the use of locally sourced produce in Fort Bragg’s dining halls by working on both the demand and supply ends of the supply chain. The initiative sought to align the base’s ostensible goal to protect working agricultural lands within the base 5-mile buffer or ‘encroachment zone’, and CEFS’ goal to enhance the economic viability of small/mid-scale farmers and their communities. Fresh produce was selected as the focus because the Market Fresh prime vendor was a collaborator in the initiative. Working within the constraints as described above, project staff advocated for the inclusion of recipes featuring local seasonally available foods, and worked with area farmers to build their capacity to enter the supply chain of the Market Fresh vendor. The project’s main point of contact was the Assistant FPM.

Around the same time CEFS’ efforts began, staff became aware of a new DoD initiative that had the promotion of healthy eating—including development of healthier recipes—as part of its mandate. The Healthy Base Initiative (HBI) was a 2-yr (2013–2014) research and demonstration project aimed at examining and supporting select military installations’ efforts (including Fort Bragg) to improve nutritional choices, increase physical activity and reduce obesity and tobacco use (Military OneSource, *n.d.*). CEFS staff were introduced to the Fort Bragg HBI/Health Promotion representative through the Washington, D.C.-based Bipartisan Policy Institute, which had been contracted to execute HBI.

Emails and phone conversations with the lead HBI consultant and the HBI Program Director led to a phone discussion with a DoD dietician regarding the potential for seasonal menu development for the DFACs. The DoD dietician was supportive of the

general strategy of seasonally based recipes, and introduced CEFS staff via email to several other federal-level DoD and Army representatives involved with food and DFACs. A series of emails led to an explanation by a JCCoE employee of the painstaking procedure for changing recipes and menus:

“Hello everyone - as many of you know our DFACs use an automated system for Recipes, Menu Planning, Requisitions, budgets & cost accounting to support feeding our diners. Any Recipe nominations would need to be translated from the original version to incorporate the necessary HACCP steps, military equipment and standard terms, and be approved by the Food Program Manager for local use & upload (sic) into the management information system by the Joint Services Recipe Committee if it would work for multiple services [at] multiple locations. The Healthful Eating messages are welcomed for submission, and would need to be nested inside on-going campaigns to insure consistency of dietary goals and fit within the larger program objectives. Those messages would be scrutinized by the supporting RD at the installation, HBI, The Army Performance TRIAD, and the DoD Nutrition Committee’s Go For Green program to insure there is no conflict nor promoting of items that are infrequently available for selection within the DFAC. We don’t deliberately push brands at the DFACs, as we are seeking to modify diner awareness and behaviors towards better choices, balanced selections leading to better performance over time.”

In subsequent phone conversations, CEFS staff discussed the potential of a joint effort with the HBI consultant, with CEFS contributing the knowledge of seasonally available local produce around which recipes could be designed. The consultant declined, however, based on the challenges already being experienced by HBI for its own efforts. Faced with little progress over an 18-month period, CEFS abandoned the effort to provide recipes to Fort Bragg. The HBI effort concluded its efforts in 2015, with the final report issued in early 2017. While the HBI effort led to a set of recipes created by The Culinary Institute of America to be housed on the Military OneSource Website (Military Times, 2015), efforts to change recipes used in the dining halls were apparently not met with success, as reflected in the HBI final report (Healthy Base Initiative, *n.d.*):

“While the current governance structure readily supports programs run by different offices, there is no clear, effective way to create enterprise-wide culture change and work across offices and agencies within DoD (p. 117)... Despite best intentions, HBI implementation was delayed at many installations, even where strong buy-in existed at the leadership level. This delay reflected the reality that, with so many competing and often mandatory commitments, a voluntary initiative naturally falls lower on the “to do” list. A related issue or challenge was the frequent perception that HBI was redundant with existing policies or programs, given that each of the Services currently has its own initiatives for nutrition and physical activity. In addition, the number of programs and initiatives already in place at many installations could be overwhelming – Fort Bragg, for example, has nearly 600 programs (though not all of them specifically target health and wellness)... (p. 118).”

A second avenue to localize sourcing at the base focused on the possibility that the Market Fresh or other prime vendor contracts could include requirements for local or regional sourcing (e.g., ‘10% of fresh produce must be sourced from within the base encroachment zone’). Such a requirement could prompt Prime and Market Fresh vendors to include offerings from these farmers or other food businesses in their food catalogs to meet a contract-mandated percentage. A preference for local food, though not a mandated percentage, was mentioned in the

Market Fresh solicitation for North Carolina, as follows (Defense Logistics Agency Troop Support, 2012):

“XXXIII. SEASONAL ACQUISITION”

A. When seasonally available, USDA #1 or better quality and competitive price, the government’s preference is for locally grown produce. The successful contractor shall utilize local produce to the maximum extent feasible. The vendor shall record and update local items on their catalog on a weekly basis. The vendor is responsible for defining local produce in their geographical area.”

However, there is no percentage or other volume requirement, nor is there yet a reliable way for the Market Fresh vendor to ‘record and update’ local items in the catalog and have these link to order numbers in their warehouse inventory. As is typical among produce wholesale/distributors, the contracted Market Fresh Vendor in North Carolina does not segregate local and non-local items. Eggplant, for example, grown by local farmers is not inventoried in a separate warehouse slot with a distinct SKU code compared to eggplant that is not grown by local farmers.

Adding procurement requirements that specify a percentage and geographic or other designation (e.g., size of operation) could create the formal structures that would give installation-level food officers the ability to purchase locally sourced foods. Another possibility is to establish local purchase programs at the installation level to pre-qualify local vendors and have a mechanism by which dining can purchase directly from them. Enacting either of these suggestions, however, would require changes in the current federal DLA-TS contracting program, and changes in the way that wholesale/distributors manage inventory.

### Efforts to increase local sourcing: supply side

As the demand-side efforts were being undertaken, project staff worked to identify local produce growers, specifically those located within the 5-mile encroachment zone. The strategy was to identify these growers, assist them in achieving the food safety certifications required to sell into the military, and connect them with the Market Fresh vendor. These growers were much smaller than the size of growers that the Market Fresh vendor was accustomed to working with, with each grower having 15 or fewer acres in produce. The CEO of the Market Fresh vendor indicated that he was unable to purchase from these growers because of the additional costs of setting up new vendors, especially when these vendors were offering the same products that the company was already sourcing, typically at lower prices and always with more consistent volume and quality, from other grower shippers and brokers.

As a result, no product was ever purchased from these farmers. It is important to note that at the same time these growers were recruited, other growers in the area became interested in forming a growers association and working together to grow product specifically for the military. With no transactions occurring, even after two growers achieved Good Agricultural Practices certification to meet buyer requirements, efforts to build grower capabilities for the military market were discontinued. Three growers recruited for the military sourcing initiative were members of the Fayetteville Farmers Market Association (Fort Bragg is located outside of Fayetteville). Through CEFS assistance over a 6-month period, a monthly on-base Farmers Market was established. This market, one of a handful of military-base farmers markets in the USA, continues to operate at Fort Bragg.

### Restaurants and Recreation Facilities

The Army’s MWR Command, provides community and support services to soldiers and their families. Other branches of the military operate similar programs with varying names; the Marine Corps MWR operation is Marine Corps Community Services.

The Army MWR is a component of the Army Installation Management Command (IMCOM), housed at Fort Sam Houston in San Antonio, Texas. Army MWR operates the Joint Services Prime Vendor Program (JSPVP) for food and beverage purchases at MWR facilities. All Army MWR operations are required to participate in the JSPVP and purchase the majority of their products through JSPVP. US Foods holds the prime vendor contract for all MWR facilities at Army installations in the continental USA. Other branches of the military are eligible to participate as a member of JSVPV at no cost. The estimated savings over ‘street pricing’ is 12–15%.

JSPVP participants can also take advantage of manufacturer *deviated pricing* and *rebate programs*, which are listed for members on the JSPVP website. The deviated pricing program is similar to the NAPA program described earlier. In the deviated pricing program, the prime vendor (US Foods, in this case) agrees to bill the government the invoice price minus the manufacturer’s discount, and initiate a bill back to the manufacturer to recover the difference. Similar to NAPA, the discount negotiated is an agreement between the manufacturer and the government—the prime vendor is not involved. There are around 6000 items from about 185 manufacturers in the deviated pricing program.

The rebate program requires the MWR operation to redeem the rebate offer after the invoice for the regularly priced item has been paid. The rebates are provided directly by the manufacturer to MWR and the prime vendor is not involved in the process. All MWR products—regular JSVPV program products, and those in the deviated pricing and rebate programs—are ordered by MWR establishment food managers (at restaurants, bowling alleys, etc.) from the prime vendor, which delivers the products.

### Efforts to increase local sourcing through the MWR program

Fort Bragg MWR operates six restaurants, three coffee shops and catering services at the base conference center. Three restaurants are branded theme restaurants, which use menus and marketing materials developed at MWR headquarters. The remaining three restaurants, coffee shops and catering operation use menus developed by Fort Bragg MWR Business Operations staff.

CEFS staff worked with the MWR Business Operations Manager and the contracted distributor US Foods to encourage the purchase of foods from small/midsized food producers in North Carolina for use in the MWR outlets. The Business Operations Manager was willing to order local items, but explained that the base restaurants she oversees operate solely on the revenues they produce, that the margins are exceedingly thin, that the retail price points in use are inelastic, and that food must be purchased from US Foods. For the catering operation, she was willing to purchase from other sources to meet customers’ demand; if a catering customer wanted local vegetables served then the catering staff could purchase vegetables at a local farm stand or elsewhere. If prices are higher at the market, then costs can be passed on to whatever entity made the catering order. For example, in 2013 the CEFS project held its project partner meeting at the Fort Bragg officers club, with nearly every item on the menu locally sourced by the executive chef.

Staff at the initiative met with the US Foods category managers for produce, meat, seafood and dairy products to understand current products that could be substituted by local alternatives. Efforts to introduce food from small to midsized producers into the US Foods supply chain had some success, with a local grass-fed beef producer and North Carolina distributor of specialty local cheeses attaining vendor status. However, these products were not purchased by Fort Bragg MWR.

A non-local grass-fed beef product was introduced to a base restaurant under interesting circumstances. In July 2014, *Restaurant: Impossible*, a Food Network reality TV show about the remaking of underperforming restaurants, took on the Green Beret Club, a MWR-operated restaurant at Fort Bragg (Dolasinski, 2014). With a \$10,000 budget, improvements were made to the restaurant's décor. According to the Food Network, 'while the structure of the Green Beret Club was clean and boasted a fine floor, its food could be improved, especially if they swapped in fresh ingredients in place of frozen alternatives'. One of the menu changes was the introduction of a 100% grass-fed burger. While the Fort Bragg MWR food supplier, US Foods, had begun carrying a line of North Carolina produced grass-fed beef, the product served at the newly designed restaurant was the less-expensive US Food's house brand. The restaurant stopped offering the grass-fed burger, however, because the cost to the customer approximately doubled, and sales declined. According to Michelle Hagwood, Fort Bragg MWR Business Manager, 'We had increased the price to our customer, to meet our margins, which caused our customers to complain and stop buying the burger. So now we went back to our other [conventional] burger' (Personal Communication, November 18, 2016).

### Commissaries

The CEFS project focused on increasing local sourcing through dining and MWR. This was due to the fact that the prime vendors to dining and to the MWR restaurants at Fort Bragg had both signed letters of support and agreed to work in collaboration with the project to increase the availability of locally sourced products through their supply chains. We discussed these efforts in preceding sections. In this section, we describe the third major component of the military food system: the commissary system.

The Defense Commissary Agency (DeCA), a component of the US DoD and headquartered at Fort Lee, Virginia, operates a chain of 238 commissaries on US military bases around the world. Authorized patrons (active, reserve and national guard members, retirees of those organizations, and DoD employees) purchase items at cost plus a 5% surcharge. In 2015, the Boston Consulting Group estimated the savings to shoppers over regular grocery store prices to be 16–21% (Military News, 2015).

DeCA contracts to purchase and resell non-branded and branded grocery products and grocery services, subject to federal purchasing and contracting requirements. Services include deli-bakery services (e.g., a food service management company may manage deli operations within a commissary), in-store seafood markets, plant and flower sales, etc.

Brand name products include various grocery products such as dry, refrigerated and frozen products, beverages, and household products. Brand name resell items are purchased by DeCA non-competitively. There is no bidding process against other manufacturers; instead, prices are negotiated with the product manufacturers or their authorized representative.

Rather than work directly with DeCA, many name-brand manufacturers choose to sell their products to companies that act as intermediaries or 'brokers' to DeCA. These companies obtain compensation off the margin: they purchase the products from the manufacturer and resell them at a profit to DeCA. In North Carolina, a vendor of shelf-stable local items—peanuts, sauces, jams, etc.—successfully obtained a contract with a number of commissaries based on its extensive experience setting up and maintaining a free-standing case of these items in several grocery-store chains across the state. (To find wholesale intermediaries that specialize in working with the military commissary system, contact the nearest Procurement Technical Assistance Center (PTAC) <http://www.aptac-us.org/contracting-assistance/>. In NC, where military spending comprises the second biggest industry in the state (after agriculture), there are six PTAC counselors. Assistance for potential vendors, including contact information for military food brokers, can be found here: <http://www.ncmbc.us/wp-content/uploads/Military-Brokers.pdf>).

Non-name-brand products are those that 'have no demonstrated or anticipated customer preference for specific brands' and include items considered interchangeable commodities such as fresh fruits and vegetables, beef, pork, eggs and firewood (Defense Commissary Agency, 2014). DeCA purchases non-name-brand products and services through a formal competitive solicitation process on a best value basis. 'Best value' provides the greatest overall benefit in response to the contract requirements. Contract solicitations are advertised on the Federal Business Opportunities website (<https://www.fbo.gov/>) and recent contract awards can be viewed on the DeCA website (<http://www.commissaries.com/business/contracting.cfm>). These sources reveal awards often in the tens of millions, sometimes even hundreds of millions, of dollars.

In North Carolina, commissaries purchase fresh fruits and vegetables from Military Produce Group (<https://www.militaryproduce.com/>) (MPG). MPG operates six distribution centers, servicing 93 commissaries in the eastern half of the USA. Farmers seeking to sell to NC military installations must contact MPG to become a supplier or 'subcontractor', and deliver products to the closest distribution center, in Norfolk, VA. The farmer may contact MPG directly, or seek assistance from the Marketing Division of the NC Department of Agriculture and Consumer Services (<http://www.ncagr.gov/markets/>) or the North Carolina Military Business Center (<http://www.ncmbc.us/>).

### Conclusion and Recommendations

Military bases offer the tantalizing potential of serving as anchor institutions for local and regional foods. Bases contain all three of the major markets that connect food producers and food consumers—institutional food service operations, restaurants and grocery stores. The initiative described in this paper focused on bringing locally sourced products, specifically those produced within a 5-mile base encroachment zone, into the institutional food service and restaurant supply chain channels of a large Army base. The project did not include attention to on-base schools, which could be explored through farm-to-school programs. Even with collaborative agreements in hand in the form of letters of support from base personnel and two prime vendors, the initiative's original intent of linking small- and mid-scale farmers into base supply chains was not achieved. We attribute this to the centralized structure of military command, an inflexible procurement system, and overriding concern to minimize cost. We also attribute this outcome to our lengthy learning

curve to understand the complex nature of military food procurement. This shortcoming was the major motivation for this article—to provide a basis of knowledge for others considering military installations as potential demand sites for local or regional food products. In this concluding section, we make a few recommendations for others who wish to work with military procurement.

*Do not expect local or regional food procurement to be high on the list of base priorities, even if it does align with stated goals*

While the military is concerned with food security and protecting undeveloped land around bases, the current procurement system efficiently supplies a large volume of food in a reliable manner and at a low cost. In our experience, the current system was not viewed as 'broken,' and much of our efforts to procure more seasonal produce from local farmers were considered unneeded. As noted previously, the HBI, a federal effort to improve the health of base residents partly through promotion of healthier eating practices, occurred during the same time period as our own work at Fort Bragg. Even with federal backing, the HBI concluded there was 'no clear, effective way to create enterprise-wide culture change and work across offices and agencies within DoD' (The Healthy Base Initiative, p. 116). Like HBI, our work competed with the nearly 600 existing programs in place at Fort Bragg (The Healthy Base Initiative, p. 117). The concept of 'idea fairies' dropping in to implement various programs was mentioned derisively by several base staff during our conversations with them.

*Identify a powerful base champion and other supporters*

The ideal base champion is the installation's top commander. Of anyone, he or she has the most potential to bring about change working within the existing system. The CEFS initiative had as its primary contact a staff member at the Environmental Section of the base Public Works Directorate. This office, however, has no oversight or influence over procurement decisions. We recommend identifying the base's community liaison, and speaking with the Veterans Affairs office in the state to help identify a base champion for local and regional foods. Speak also with economic development and small business centers located in the county where the base is located, and with the state's military Procurement Technical Assistance Center. As noted in this paper, key base personnel are the FSM and FSO. A possible early-stage entry point is asking one of these or the base community liaison to serve on an agricultural/food advisory board for the county or region. Instituting a 'place at the table' for a base liaison could help guard against the loss in momentum brought about by the frequent military and civilian personnel changes on base.

*Begin with farmers markets and CSAs*

The one positive tangible outcome of the CEFS initiative at Fort Bragg was the establishment of an on-base farmers market. The existence of farmers markets at several military bases, and guidelines that have been developed to support their creation (Edmonson et al., 2015), provide a road map for advocates. While we are not aware of specific CSA programs at military bases, this is also a comparatively easy model for building links between base consumers and local producers. Our recommendation for both farmers markets and CSAs is to have a complete turn-key plan articulated in writing before approaching base staff. The base community liaison and business manager for the MWR program are suggested contacts. Understand that these

individuals, especially the MWR manager, will have motivations that focus on morale. Farmers markets and CSAs will be considered services to enhance base morale. Farmers markets in particular will be positively received if they supply recreational spaces where fresh items are for sale, cooking demonstrations are conducted, and where food trucks or entertainment provide additional dimensions to attract base staff, active duty, retired military, and their spouses. Once a market or CSA program is established, provide a CSA share to key staff and invite the dining FPM to tour the market. This could be a first step to a relationship with base food service.

The CEFS initiative currently works with Marine Corps Camp Lejeune, which established an on-base farmers market in 2013 based on the interest of the base commander. The market continues 4 yrs later and has ties with an incubator farm near the base, which began with funding from the Beginning Farmers and Ranchers Development Program of the National Institute of Food and Agriculture, an agency within the US Department of Agriculture. The base farmers market is partially supplied by producers at the incubator farm, some of whom are veterans or spouses of active military. The manager of the farm and market work with the base's community liaison to diversify products sold at the market, advertise off-base opportunities such as farm tours, and host visits from military command to both locations. One effort over the prior year has been to encourage chefs to source products from the market for base culinary competitions. Through this more holistic 'Farm to Base, Base to Farm' approach our hope is to establish awareness of local and regional foods to impact individual purchasing habits in the long term. Based on our experiences, more systemic changes in the military food system can only come from decisions made at the federal level.

**Acknowledgements.** This material is based upon work supported by the National Institute of Food and Agriculture, US Department of Agriculture, under award number 2013-68004-20363. Any opinions, findings, conclusions or recommendations expressed in this publication are those of the authors and do not necessarily reflect the view of the USDA.

## References

- Bingham C, Lahti-Koski M, Puukka P, Kimmunen M, Jallinoja P and Absetz P (2012) Effects of a healthy food supply intervention in a military setting: Positive changes in cereal, fat and sugar containing foods. *The International Journal of Behavioral Nutrition and Physical Activity* **9**(91), 1–12. doi: 10.1186/1479-5868-9-91 (accessed 12 January 2017).
- Center for Environmental Farming Systems (n.d.) From Farm to Fork: Building a Sustainable Local Food Economy in North Carolina. <https://cefs.ncsu.edu/food-system-initiatives/archive/farm-to-fork-statewide-initiative/> (accessed 12 July 2016).
- Champagne CM (2001) Incorporating new recipes into the Armed Forces recipe file: Determination of acceptability. *Military Medicine* **166**(2), 184–190.
- Defense Commissary Agency (2014) The Defense Commissary Business Guide. [http://www.commissaries.com/documents/business/business\\_guide.pdf](http://www.commissaries.com/documents/business/business_guide.pdf) (accessed 10 May 2016).
- Defense Logistics Agency Troop Support (2012) Solicitation/Contract/Order for Commercial Items. <http://www.dla.mil/Portals/104/Documents/TroopSupport/Subsistence/Food%20Services/Regions/East/MF/12R0038.pdf> (accessed 15 April 2016).
- De Salcedo AM (2015) *Combat-Ready Kitchen: How the U.S. Military Shapes the Way you Eat*. Random House, New York.
- Dolanski A (2014) Fort Bragg's Green Beret Club Gets Makeover for 'Restaurant Impossible' Episode. *Fayetteville Observer*, 9 July 2014. <http://www.fayobserver.com/4945fc20-9668-5b7f-9e68-c90616577483.html> (accessed 10 May 2016).



- Edmonson B, Sandolo C, Borst E, Schubert R and Farley S** (2015) Guide for Farmers Markets on Military Installations. [http://download.militaryonesource.mil/12038/MOS/HBI/USDA%20Farmers%20Market\(5\\_FINAL%20PROOF\).pdf](http://download.militaryonesource.mil/12038/MOS/HBI/USDA%20Farmers%20Market(5_FINAL%20PROOF).pdf) (accessed 5 March 2017).
- Grasso VB** (2013) Department of Defense Food Procurement: Background and Status. Congressional Research Service 7-5700.
- Healthy Base Initiative** (n.d.) <https://bipartisanpolicy.org/wpcontent/uploads/2016/07/Healthy-Base-Initiative-Report.pdf> (accessed 5 March 2017).
- Livingston GE** (1979) Development of the systems approach to the design of food service operations. In GE Livingston and CM Chang (eds). *Food Service Systems: Analysis, Design, and Implementation*. Academic Press, New York, NY. p. 3–17.
- Military News** (2015) Study: Increase Some Commissary Prices and Reduce Employee Wages. <http://www.military.com/daily-news/2015/09/17/study-increase-some-commissary-prices-and-reduce-employee-wages.html?comp=1198882887570&rank=2> (accessed 12 February 2017).
- Military OneSource** (n.d.) Healthy Base Initiative. <http://www.militaryonesource.mil/health-and-wellness/healthy-base-initiative> (accessed 5 April 2017).
- Military Times** (2015) Healthy Base Initiative Ends but Concept Continues. [19/healthy-base-initiative-ends-but-concept-continues/31988641/](http://www.militarytimes.com/story/military/benefits/health-care/2015/08/19/healthy-base-initiative-ends-but-concept-continues/31988641/) (accessed 11 October 2016).
- MWR Bizboard** (2016) What is the Joint Services Prime Vendor Program. <http://www.mwrbrandcentral.com/bo/what-is-the-joint-services-prime-vendor-program-jsppv/> (accessed 1 March 2017).
- National Guard News** (2013) Compatible Use Buffer Program Proves Powerful Tool for Army Installations. <http://www.nationalguard.mil/News/Article/574408/compatible-use-buffer-program-proves-powerful-tool-for-army-installations/> (accessed 9 July 2016).
- NCGT News** (2014) New Fort Bragg Farmers' Market Brings Local Foods to Base. <http://archive.constantcontact.com/fs194/1101792081083/archive/1118348414307.html> (accessed 2 May 2016).
- PlanIt EAST** (n.d.) Food & Fuel for the Forces. <http://www.planiteast.org/food-fuel> (accessed 27 July 2016).
- Ramsey CB, Hostetler C and Andrews A** (2013) Evaluating the nutrition intake of U.S. military service members in garrison. *Military Medicine* **128**(12), 1285–1290.
- SERPPAS** (n.d.) Southeast Regional Partnership for Planning and Sustainability. <https://serppas.org/> (accessed 27 July 2016).