Science & Diplomacy: Soldier-Scientists Are New Face of Counterinsurgency Strategy in Afghanistan

An approach to counterinsurgency that draws on soldiers’ science and engineering expertise to address community needs in Afghanistan may represent the next wave for the U.S. National Guard.

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Specialist Alex Baker and Alexander Stewart, far right, soldier-experts who were part of Texas Agriculture Development Team 2, discuss grape trellising with agricultural students at the University of Ghazni. | Courtesy Alexander Stewart

A team of science and engineering experts including an aquaculturalist, an environmental chemist and a geology professor may not be an obvious example of military might. In fact, such teams are some of the U.S. armed forces' most important agents of counterinsurgency, according to a new article [4] in the AAAS quarterly Science & Diplomacy.

United States Army Agriculture Development Teams (ADTs) are twelve-person, egalitarian, military teams made of soldier-experts who work in rural areas of Afghanistan with local communities. The teams take on small, easily replicated projects related to agricultural education services, though that term has a broad scope, writes Alexander K. Stewart, a geology professor at St. Lawrence University and a veteran of the wars in Afghanistan, Iraq and the Gulf, as well as the Cold War.

In his 4 March article, Stewart describes several of the projects that his ADT team -- whose experts had worked previously for a Dallas aquarium, a water management company, the Texas Parks and Wildlife Department, a road construction company and other organizations -- undertook in Afghanistan. The Texas team set up community-owned demonstration farms to provide expertise and support to interested farmers, worked with locals to determine the sites and sizes of earthen dams for capturing the short-lived, spring runoff from the Hindu Kush Mountains, and established the library of Ghazni University. They also created a program to teach locals how to use rock-filled wire cages to repair a bridge abutment, developed an environmental conservation park, and generated a plan for preserving a set of culturally important, 12th-century minarets.

The ADTs are effective largely due to their simple, "bottom-up" organization, which allows the soldier-experts to focus on solving the problems at hand, in a way that supports the legitimacy and effectiveness of
the Afghan government, according to Stewart. 


Counterinsurgency strategy incorporates a wide range of activities, and ultimately, a civilian agency should lead the effort. But, that cannot begin until the area is safe and relatively stable, and until then "militarized aid will be the primary driver of stability in Afghanistan," Stewart writes. The concept of militarized aid has its share of critics, however. For example, nongovernmental organizations such as Oxfam International have criticized "militarized aid" as consisting of only "fast-win," charity-like projects that are poorly executed, inappropriate and without sufficient community involvement.

Many of these criticisms focus on the use of Provincial Reconstruction Teams (PRTs) in Iraq and Afghanistan. These 50- to 100-person teams are composed of military personnel and civilian experts, and, like the ADTS, are designed to improve stability by "winning hearts and minds." Such joint teams might seem like an excellent way to bring the best elements of military and civilian expertise together. "This appears, however, not to be the case," Stewart writes. The members' ideological, training and funding differences are too great, and "PRTs are perceived by Afghanistan officials and nongovernmental organizations as political extensions of the states that deploy them -- bureaucratic, top-down units that are too prescriptive and donor driven."

The United States has improved the PRTs, but it has also gone back to the drawing board to establish the ADTs, which are commanded by a National Guard colonel and supported by a National Guard security force and headquarters. The ADTs use a grassroots approach that includes daily coordination with and in the local community.

As of 2014, nine states have supported the ADT mission, providing 49 teams that have operated in 15 provinces. These teams have contributed more than 680 agriculture-related projects, which have generated over $42 million in economic impacts for the people of Afghanistan, Stewart reports.

The ADTs have also experienced tragedy. Two of Stewart's teammates were killed in 2009 when an explosive device detonated during on a soldier-expert mission in east-central Afghanistan. "They were my brothers-in-arms," Stewart told Science.

Science & Diplomacy [6] is an online quarterly published by the AAAS Center for Science Diplomacy [7]. The upcoming March issue will also include articles on U.S. support of research centers in Africa from Harold Varmus, reinstating science attaches by former U.S. embassy science fellows, tacit diplomacy in the life sciences, Polish emigration, and Swiss science diplomacy. The journal also welcomes two new advisory board members: Steve Clemons, Washington, DC, editor-at-large for The Atlantic, and Kenneth Keller, director of the Johns Hopkins SAIS Bologna Center in Italy.

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