

SCIENCE & DIPLOMACY



A quarterly publication from the AAAS Center for Science Diplomacy

Alexander K. Stewart, "U.S. Army Agriculture Development Teams: A Grassroots Effort in Afghanistan Supporting Development and Tackling Insurgency," *Science & Diplomacy*, Vol. 3, No. 1 (March 2014*).

<http://www.sciencediplomacy.org/article/2014/us-army-agriculture-development-teams>.

This copy is for non-commercial use only. More articles, perspectives, editorials, and letters can be found at www.sciencediplomacy.org. SCIENCE & DIPLOMACY is published by the Center for Science Diplomacy of the American Association for the Advancement of Science (AAAS), the world's largest general scientific society.

*The complete issue will be posted in March 2014.

U.S. Army Agriculture Development Teams: A Grassroots Effort in Afghanistan Supporting Development and Tackling Insurgency

Alexander K. Stewart

THE twenty-first century military is not limited to martial activities. It often takes on additional roles, including diplomatic and development functions. As former U.S. secretary of defense Robert Gates said, "One of the most important lessons of the wars in Iraq and Afghanistan is that military success is not sufficient to win: economic development, institution-building and the rule of law, promoting internal reconciliation, good governance, providing basic services to the people, training and equipping indigenous military and police forces, strategic communications, and more—these, along with security, are essential ingredients for long-term success."¹

Currently in Afghanistan, the operational environment is counterinsurgency (COIN), which is a comprehensive civilian and military effort to simultaneously defeat and contain insurgency and address its core grievances.² COIN strategy, therefore, is primarily political and incorporates a wide range of activities, of which security (ground troops) is just one. For COIN to be successful, unified action is required where the host nation works with U.S. and multinational agencies, ultimately allowing a civilian agency to lead the effort. This cannot begin, however, until the area is safe and relatively stable. Until then, "militarized aid"

Alexander K. Stewart is a professor in the Department of Geology at St. Lawrence University. He is retired from the U.S. Army after serving for over twenty years, with twelve in the National Guard, and is a veteran of three foreign wars (Gulf War, Iraq, and Afghanistan) and the Cold War.

will be the primary driver of stability in Afghanistan. The U.S. government and coalition partners, however, are under increasing scrutiny regarding their stability, development, and humanitarian efforts in their COIN operations in Afghanistan. Nongovernmental organizations (NGOs) such as Oxfam International have criticized “militarized aid” as only “fast win,” charity-like projects that are poorly executed, inappropriate, and without sufficient community involvement.³ They are not alone in these thoughts; some academics and research groups share a dislike for COIN’s “winning hearts and minds” strategy.⁴ Principally, the international relief community is opposed to militaries meddling by using “aid money as a weapon system.”⁵

These arguments focus on coalition use of Provincial Reconstruction Teams (PRT) in Iraq and Afghanistan.⁶ These teams are interim civil-military organizations designed to improve stability by “winning hearts and minds.”^{7, 8} Conceptually, developing a team comprised of military personnel and civilian experts seems like an excellent way to distill the best from both worlds. This appears, however, not to be the case. Ideological, training, and funding differences, owing to the internal imbalance of military and civilian personnel, make these teams less than ideal.⁹ PRTs are perceived by Afghanistan officials and NGOs as political extensions of the states that deploy them—bureaucratic, top-down units that are too prescriptive and donor driven.^{10, 11}

The Afghan government and the international aid community have recognized that effective, meaningful change is of a generational scale. Development and aid efforts should be “bottom up,” in a grassroots style, which involves local communities in small-scale projects. These projects should also include an educational component with evaluation programs in place to assess the quality of the project.^{12, 13} The U.S. government has realized these criticisms and has improved the PRT mission,^{14, 15} but it has also started anew by establishing specialized, grassroots U.S. Army Agriculture Development Teams (ADT). These teams are unique to the military, for they provide actual expertise in the form of professional soldier-experts who work as a twelve-man egalitarian military team. ADTs operate from the “bottom up” in rural areas of Afghanistan with local communities on small, easily replicated projects that include educational components with follow-up assessments.¹⁶ Evidently, following recommendations from the international aid community, these teams are supported, not by government agencies, but by “reach-back” universities, institutions that have committed their remote assistance, in the United States and Afghanistan. The development teams flip efforts from a bureaucratic, top-down style to a bottom-up, grassroots approach driven by subject-matter experts who work daily with and in the local community.

A Clash of Mindsets: Provincial Reconstruction Teams

PRTs were developed in 2002 as a means to improve stability by building up the capacity of the host nation to govern; enhancing economic viability; and delivering

essential public services such as security, law and order, justice, healthcare, and education.¹⁷ PRTs are operated by a single International Security Assistance Force (ISAF) nation or a coalition of two or more ISAF nations at the provincial level.¹⁸ PRTs are run by the U.S. Department of State and funded by multiple agencies. They are meant to fill the void between major combat and stability operations by using the military's ability to penetrate unstable and insecure areas. They also help stabilize situations with their diplomacy, military, and economic components.^{19, 20} Realizing that the military alone lacks development skills, the architects of PRTs included diplomatic and development agency personnel in their makeup. Typically, PRTs comprise fifty to a hundred personnel and have three components operating under a military command (lieutenant colonel): military support personnel, security (military and/or contract), political advisors (U.S. Department of State) and development/reconstruction experts (e.g., the U.S. Agency for International Development and the U.S. Department of Agriculture). Teams may not have the full complement of civilian experts because they are reliant on a small pool of volunteers. Based on U.S. Government Accountability Office data for 2007 and 2008, less than 5 percent of the teams' personnel were civilian subject-matter experts.²¹ Regardless of civilian agency support levels, PRTs are a mosaic of civil-military entities that are difficult to coordinate, manage, and lead. In an effort to better understand and ease the coordination of so many heterogeneous parts, the U.S. government has developed the Interagency Lessons Learned and the Center for Complex Operations; moreover, ISAF has developed the *ISAF PRT Handbook* to help provide "guidance to those leading and working in PRTs to ensure a consistent and coherent approach..."²² Despite these efforts, significant obstacles remain to effectively running PRTs because they lack cooperation between partners and the organizational culture of PRTs as a whole—essentially, a "clash of mindsets" from the divergence of civilian expert, military, and national interests.^{23, 24}

An Egalitarian Team: Agriculture Development Teams

In early 2008, the U.S. Army, in conjunction with various Army National Guard commands (state-based, reserve military force), developed and began employing Agriculture Development Teams (ADTs) to Afghanistan. These specialized National Guard teams comprise twelve hand-selected, soldier-experts within the agribusiness field who work, when not deployed, as professionals in the following fields (by team strength): geoscience, agronomy, veterinary science, engineering, agricultural marketing, and pest management. These National Guard soldier-experts are commanded by a National Guard colonel (leading to increased unit maneuverability, support, and access in theater) and supported by a National Guard security force and headquarters. All of them train as a team for months prior to their deployment. As an egalitarian team, these soldier-experts work directly with both regional and local Afghan government officials and farmers to support

their agricultural needs. ADTs provide agriculture-related education, training, and sustainable projects, which are U.S. funded and locally operated, maintained, and sustained with a staunchly held ethic that these projects not be charity. As of the beginning of 2014, nine states have supported the ADT mission providing a total, thus far, of forty-nine teams that have operated in fifteen provinces. All told, they have contributed more than 680 agriculture-related projects, which have generated over \$42 million in economic impacts for the people of Afghanistan.²⁵ ADTs have a comprehensive combination of soldier-experts who think and work as on-the-ground operators (tacticians). They also have a comprehensive understanding of the insurgents and external, environmental elements, and they have compassion and understanding of the host nation's culture, which allows them to be effective in COIN.²⁶

The mission statement of ADTs is simple: to provide basic agricultural education and services in order to support the legitimacy and effectiveness of the Afghan government. Because of the general nature of this mission statement, "agricultural education and services" is broadly defined. Working to support the national Ministry of Agriculture, Irrigation, and Livestock, ADTs coordinate with their respective Provincial Directors of Agriculture, Irrigation, and Livestock (DAIL), district elders, and the public to develop and implement sustainable, Afghan-run, U.S.-funded projects supporting the government of Afghanistan and COIN efforts.

Improving "agriculture education and services" is best achieved when the soldier-experts work in two- or three-member flexible, problem-specific groups with direct support from the local community and reach-back experts and ancillary support from other team members. For the following examples, when not in uniform, these professional soldier-experts were (a) a range management specialist with the Texas Parks and Wildlife Department, (b) an aquaculturist with the Dallas World Aquarium, (c) a professional farm manager with Afflerbach Farms, (d) a project engineer with a road construction company, (e) an environmental chemist working in Severn Trent Services, (f) a renewable natural resources manager with Halff Associates, and (g) a geology professor at Angelo State University (author). The following examples show the range of projects that these professional soldier-experts working in the Texas ADT developed, implemented, and reviewed, while assessing and controlling the quality of the projects along the way.

Agriculture: Demonstration Farms and Agriculture Extension Agent Training

The easiest, most cost-effective way to help local Afghan farmers move beyond subsistence farming is to increase their yields through education and simple modernization techniques. Two mainstays of ADT efforts, therefore, are providing agriculture education training to new district extension agents and implementing district-level demonstration farms. "Training the trainer" and providing a local agricultural "nexus" enables communities to become part of the regional and national agribusiness community. Demonstration farms are community-owned

and managed by the extension agents, who, along with professors at the local university, provide expertise and support to interested farmers who are able to learn and apply acceptable modernization techniques.

Demonstration farms typically include fenced grazing areas for livestock, livestock housing, greenhouses, drip-irrigation systems, and cold-storage facilities. In addition, ADTs have incorporated wind- and solar-powered infrastructure in these facilities, along with the requisite operation and maintenance training and support. These demonstration farms are excellent tools to engage locals with their livelihood and to provide an opportunity to learn and adapt new skills with their agriculture extension agent. As a focus for agriculture in rural districts, these farms foster dissemination of information as farmers travel to and from these centers. These facilities also provide a meeting place for other educational opportunities in areas beyond traditional agriculture (see, for example, gabion training below).

For these demonstration farms to function, they require a locally raised, trained, and knowledgeable agriculture extension agent. Extension agents in Afghanistan are relatively new, so the ADT directed its efforts toward placing agents who would continue their education and training with their district's DAIL and coordinate with the local education facilities for personal growth (i.e., by attending courses at the local university) and outreach (i.e., by developing agricultural skills at the grade school level).

For this iteration of the Texas ADT, the project managers for these farms and training were the range management specialist and farm manager, who were able to directly apply their civilian occupational specialties to the project. Working with locals during site selection and implementation, they were able to help locals determine the most effective location for a demonstration farm based on such issues as soil qualities, topography, and access to main roads. With support from other soldier-experts, such as the project engineer and aquaculturist, key topics were discussed with local officials and university faculty regarding the extension agent training programs and expectations.

Hydrology: Delayed-Action Dams

Control and management of the short-lived, spring runoff from the Hindu Kush Mountains are paramount for the survival of the Afghan people. To enhance control of this precious resource, delayed-action dams—functional, small-scale, community-level operations—are commonly built by remote Afghan communities. These relatively inexpensive dams are easy to build, manage, and maintain and are able to increase groundwater recharge in an otherwise dry *wadi* (valley). When the reservoir is not filled, the community can make repairs and remove the accumulated silts and clays, critical to maintaining the recharge capacity, as a renewable resource for brick making. Because of these impacts, ADTs are working with local communities to plan and implement these structures.

For this iteration of the Texas ADT, the project managers were the project engineer, the renewable natural resources expert, and the geology professor, who were instrumental in working with locals concerning site selection and community safety, appropriate dam size and reservoir volume, and estimating recharge rates based on engineering specifications.

Education: University Agriculture Education Support

The Texas ADT developed a relationship with Ghazni University to support the future of Afghanistan's agriculture and to prepare students for postgraduate work in the field of agriculture. Because Ghazni University was a new, underfunded extension of Kabul University, the Texas ADT, in consultation with the university's rector, Ahmad Shah Rafiqi, agreed to help modernize its facilities. The highest priority was establishing a Farsi- and English-language library with redundancy (by language) of textbooks on agriculture and general education. Additional chairs, tables, and chalkboards were provided. Together with computers and Internet access, the library is now able to better support the university's faculty to educate students in modern theory and methods of agriculture. Beyond the practical, these new facilities offer a professional, academic environment that could be appreciated by students and faculty alike—giving them pride in themselves and their school.

Success was measured by an improved relationship with the university and by faculty use of the new experimental and demonstration farms where they began providing practical, hands-on experiments to support their lectures. Based on discussions with Rafiqi, Ghazni University faculty would not have otherwise been able to offer field or laboratory opportunities to students. The addition of a hands-on, field component was readily accepted by the students and faculty, leading to a functional understanding of the material. In addition, the provincial minister of higher education recognized the Texas ADT's support and helped the university better align its academic ideals with a Westernized standard, thereby increasing the female enrollment from 13 percent to 44 percent in a single academic year. This increase in female students is helping to break down traditional barriers to women's rights in Afghanistan. Because education is the key to moving beyond subsistence farming, the Texas ADT's relationship with the university was seen as critical in helping develop the nation's capacity to produce and export agricultural goods.

Education: Gabion Training

During a routine inspection of the Ghazni District's demonstration farm, farmers noticed sapping of the main access bridge abutment. In response to this much-needed repair, the Texas ADT, along with local support, developed a gabion-training program. Gabions are inexpensive wire cages that when filled with earth or rocks are suitable for engineering purposes. Because gabions are easy to make and use, they were the perfect tools to repair and protect the bridge from a future

collapse. The objectives of the three-day training program were threefold: proper training in mass-wasting recognition and the emplacement of gabions for Ghazni University faculty and local farmers (thirty persons); repair and protection of the stream cut bank associated with the bridge abutment; and promulgation of the training via radio interviews supporting the efforts of the Texas ADT, Ghazni University, and local farmers.

The team, comprising a geology professor and a chemist, worked directly with Ghazni University to help develop these educational programs so that, in addition to being effective and appreciated, they functioned in a culturally accepted way. For example, offering hands-on training was a significant contribution to the curriculum at Ghazni University; moreover, for the gabion training, providing usable materials (e.g., empty gabions) to continue their education on their own farm was instrumental in promising dissemination of this practical tool. This synthesis of hands-on training, provision of a starter kit of gabions, and the radio promotion ensured the success of this project. Subsequent site visits are now safer thanks to these efforts.

Conservation: Environmental Conservation Park

ADT efforts can also include national-level coordinations where larger, public spaces are concerned. Decades of war have caused unsustainable natural resource use and degradation; moreover, local cultural knowledge and appreciation have also declined. To tackle the challenge of increasing the knowledge base and appreciation for things no longer in careful hands, educational activities are being developed in park-like atmospheres where families are able to visit, learn, and enjoy their landscape and heritage.

The Afghanistan Millennium Development Goals Report identifies ecosystem and biodiversity conservation as the most pressing environmental needs.²⁷ Along these lines, the DAIL, the provincial director of the Environmental Protection Agency, and the mayor of Ghazni approached the Texas ADT to develop a project to help support the newly created Afghanistan National Environmental Protection Agency. These leaders suggested creating an environmentally sensitive conservation park, which would allow the local community to demonstrate and preserve the natural resources of the region. This park is the first of its kind in Afghanistan. Most importantly, thanks to working with locals and being aware of their cultural needs, the park is surrounded by a two-meter-high stone wall. Much effort was expended by the ADT to convince higher command that this wall was essential. What these higher command managers initially failed to realize was that the wall acts as a *hijeb*, or screen, from “wandering” eyes, so women and children can also enjoy the park. This park preserves the area’s natural condition, which has been ravaged by increased population stress and war. It also affords an opportunity for locals to learn about, appreciate, and care for their environment in a protected preserve.

Conservation: Ghazni Minarets

ADTs also make efforts to support regional and national heritage by helping conservation efforts in unstable, rural areas. In Ghazni Province, two twelfth-century minarets, which are cultural and archaeological treasures, needed restoration and conservation. They are two of the very few tourism-worthy archaeological sites remaining in Afghanistan that were not destroyed by the Taliban. After more than nine hundred years of exposure and neglect, these ornately carved, eight-pointed stelliform minarets warranted a restoration and conservation program. In support of the Afghanistan deputy minister of information and culture, the Texas ADT collected on-site structural observations and generated schematics of the stelliform bases. These products, along with a conservation plan, were sent to the ministry in preparation for Ghazni City as the Islamic Educational, Scientific, and Cultural Organization's City of Islamic Culture for the Asian Region in 2013. The restoration and conservation of local heritage is as important as any direct benefit program. In addition, when Afghanistan again becomes quiescent, these minarets will help the outside world better understand the country and its history. Essentially, these minarets represent the people of Ghazni and of Afghanistan, so preservation is paramount to community and national pride.

Key soldier-experts for these conservation projects were the widest of any project (or project area), for conservation efforts require the most diverse approach to be effective. In a way, the added expertise of the entire team added increased validity to tackle such important and untried projects.

ADTs Are a Win-Win

The efforts and impacts of ADTs are different than other military efforts (or civilian-military efforts), for they are the result of professional, soldier-experts working as colleagues in an egalitarian, military team. These teams operate freely and are founded on a grassroots, bottom-up approach that includes daily coordination with and in the local community. These coordinations remove the bureaucratic mindset and prevent ill-conceived projects and over-expenditures. The key difference between ADT and PRT efforts is their structure. ADTs are military-only organizations that rely on the consilience of twelve subject-matter experts who work one-on-one with and in local communities. Their efforts, as a result, are community-derived, -involved, and -maintained projects that are not viewed as charity by Afghans or their government. This is in direct contrast to efforts by bureaucratic agencies, such as PRTs, that, to the best of their efforts, attempt to unite a complex array of nations, agencies, and mindsets toward their goals. Resulting perceptions, therefore, are that they are not cohesive in leadership or function^{28, 29} and appear to endorse a patronizing "this-is-for-you, from-us" strategy of project implementation.

ADT efforts, moreover, are directly aligned with the Afghan government's National Development Strategy and Millennium Development Goals, which have placed agriculture and water concerns at the top of the list for targeted intervention for fast-tracking poverty reduction.^{30, 31} The government, coalition forces, and the international aid community have recognized that there is much potential for agriculture in Afghanistan if only water resources can be managed for agricultural purposes. They are also acutely aware that prolonged international aid is detrimental to achieving sustained economic growth and poverty reduction. After more than thirty years of war and instability in Afghanistan, energies should be applied to promoting agricultural, cultural, and community knowledge, which has been disrupted due to the significant loss of older generations.³² Regardless of operation design—civil-military or egalitarian ADTs—it appears that Afghan President Hamid Karzai sees the PRTs and coalition government-parallel structures “as hindering the Afghan government's development and hindering the governance of Afghanistan.”³³ Conceivably, as a response to this sentiment and the planned drawdown, coalition-aid efforts are decreasing and funding has all but dried up.³⁴ The expectation that coalition efforts and prolonged aid were to be terminated appears to be happening. The manner of drawdown, however, is probably too rapid for the Afghan government to adjust and continue stable governance; coalition forces have provided significant monetary support to governance, stability, reconstruction, and poverty reduction. Even without continuation of this substantial aid, the grassroots efforts of ADTs have provided small-scale, replicable, community-involved projects with a significant education component, which will continue to help a generation of Afghans move forward in the international community.

In an effort to continue supporting U.S. efforts across the globe, the future use of the soldier-expert may be the next wave for the National Guard, which has the luxury of a force that is experienced in real-world environments. Recent discussions within the Pentagon about drastically reducing the size of the army have in part focused on the need to better respond to a newer insurgency-type warfare. Programs such as ADTs represent one potential way to better equip the military to meet this challenge. Military might notwithstanding, the ADT approach toward “militarized aid” has shown in Afghanistan that it can bring soldier-experts' abilities and skills to bear on local challenges in a nonthreatening and—with the support of the local populous and NGOs—successful way. This win-win situation has been recognized by former secretary Gates, who said, “[m]ore programs like this [ADTs] can be developed and we are working with the Services and their Reserve components to find appropriate force structures that can capitalize on the professional skills of Reservists and Guardsmen, while not detracting from the readiness in our conventional formations.”³⁵ This would be a good thing for future soldier-expert teams and the people they would work with, whether in Afghanistan or elsewhere. **SD**

Endnotes

1. Remarks as Delivered by Secretary of Defense Robert M. Gates, Manhattan, Kansas, Monday, November 26, 2007, <http://www.defense.gov/speeches/speech.aspx?speechid=1199>.
2. Department of the Army, *Counterinsurgency*, Field Manual 3–24 (Department of Defense, 2006): 282.
3. Oxfam International, *Quick Impact, Quick Collapse: The Dangers of Militarized Aid in Afghanistan*, accessed February 10, 2014, <http://www.oxfam.org/en/policy/quick-impact-quick-collapse>.
4. Christoff Luehrs, “Provincial Reconstruction Teams (PRT) Literature Review,” *Prism* 1, no. 1 (2010): 95–102.
5. Oxfam International, *Quick Impact, Quick Collapse*.
6. Christoff Luehrs, “Provincial Reconstruction Teams (PRT) Literature Review.”
7. Center for Army Lessons Learned, *PRT Playbook: Tactics, Techniques and Procedures*, Handbook no. 07–34 (Department of Defense, 2007): 147.
8. International Security Assistance Force, *ISAF PRT Handbook, Edition 4* (2009): 317.
9. Touko Piiparinen, “A Clash of Mindsets? An Insider’s Account of Provincial Reconstruction Teams,” *International Peacekeeping* 14, no. 1 (2007): 143–57.
10. Christoff Luehrs, “Provincial Reconstruction Teams (PRT) Literature Review.”
11. Islamic Republic of Afghanistan, *Afghanistan Millennium Development Goals Report 2010* (Kabul, 2010), 60.
12. Ibid.
13. John W. Groninger and Richard J. Lasko, “Water for Agriculture: Challenges and Opportunities in a War Zone,” *Water International* 36, no. 6 (2011): 693–707.
14. Christoff Luehrs, “Provincial Reconstruction Teams (PRT) Literature Review.”
15. Center for Army Lessons Learned, *PRT Playbook*.
16. Alexander K. Stewart, “U.S. Army Agribusiness Development Teams, Afghanistan: The Role of Geology and Geologists,” International Conference on Military Geosciences, 9th Biennial Conference (Las Vegas, 2011): 106–07.
17. Center for Army Lessons Learned, *PRT Playbook*.
18. International Security Assistance Force, *ISAF PRT Handbook*.
19. Center for Army Lessons Learned, *PRT Playbook*.
20. International Security Assistance Force, *ISAF PRT Handbook*.
21. United States Government Accountability Office, *Provincial Reconstruction Teams in Afghanistan and Iraq*, GAO-080905RSU, October 1, 2008, 20.
22. International Security Assistance Force, *ISAF PRT Handbook*.
23. Touko Piiparinen, “A Clash of Mindsets? An Insider’s Account of Provincial Reconstruction Teams.”
24. anine Davidson, “Making Government Work: Pragmatic Priorities for Interagency Coordination,” *Orbis* 53, no. 3 (2009): 419–38.
25. National Guard Bureau, “2014 National Guard Bureau Posture Statement: Sustaining an Operational Force,” accessed February 10, 2014, http://www.nationalguard.mil/features/ngps/2014_ngps.pdf.
26. Department of the Army, *Counterinsurgency*.
27. Islamic Republic of Afghanistan, *Afghanistan Millennium Development Goals Report 2010*.
28. Christoff Luehrs, “Provincial Reconstruction Teams (PRT) Literature Review.”
29. Islamic Republic of Afghanistan, *Afghanistan National Development Strategy, 1387–1391 (2008–2013)* (Kabul, 2008), 288.
30. Islamic Republic of Afghanistan, *Afghanistan Millennium Development Goals Report 2010*.
31. Islamic Republic of Afghanistan, *Afghanistan National Development Strategy*.
32. Oxfam International, *The Cost of War: Afghan Experiences of Conflict, 1978–2009*, accessed February 10, 2014, <http://www.oxfam.org/sites/www.oxfam.org/files/afghanistan-the-cost-of-war.pdf>.
33. BBC News South Asia, “Hamid Karzai says Afghanistan Aid Teams Must Go,” BBC, accessed February 10, 2014, <http://www.bbc.co.uk/news/world-south-asia-12400045>.
34. Nathan Hodge, “U.S. Winds Down Afghanistan Aid Program,” *Wall Street Journal*, October 10, 2012, <http://online.wsj.com/news/articles/SB10000872396390443749204578048430936135770>.
35. John A. Nagal and Travis Sharp, “Operational for what? The future of the Guard and Reserves,” *Joint Force Quarterly* 59 (2010): 21–29.

Acknowledgments

This article is based on the author's experiences while serving as a soldier-scientist with Texas Agriculture Development Team 2 in Afghanistan. I would like to remember my soldier-expert battle buddies, Christopher N. Staats, a staff sergeant and renewable natural resources expert, and A. Gabriel Green, a sergeant and farm management expert, who were killed in action on October 16, 2009, while on a soldier-expert mission in east-central Afghanistan.