

Senate Foreign Relations Committee Testimony

Observations on Agricultural Development in Fragile States

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Mr. Chairman, it is an honor to appear before your committee. Thank you for the opportunity to comment on the need to revitalize the US effort to improve agriculture and food production worldwide. Dr. Borlaug celebrates his ninety-fifth birthday tomorrow, March 25. By his standard I am at mid career, and look forward to sharing what I have learned so far. Dr. Borlaug incidentally has submitted a statement to this committee and I hope that it can be incorporated into the record of this hearing.

I will first describe the chronology and structure of U.S. universities engagement in Iraq, then present some key findings about agricultural development in Iraq. Then I will discuss some common problems in Afghanistan, then lastly I turn to a broader discussion of development in conflict and post-conflict regimes. I close with a few general observations.

Since December, 2003, university colleagues and I have been engaged with the U.S. Agency for International Development, the U.S. Department of Agriculture and the U.S. Department of Defense, in helping Iraqis to rebuild their agricultural sector. There was early advancement in 2004 with new crop varieties and management practices demonstrated in 11 provinces across Iraq, involving over 250 farmers. Then in 2005 security deteriorated sharply and we lost ground. Mosul and Baghdad University scientists with whom we cooperated could not go to their farms, and many of our test plots on farmer's fields were abandoned. Key Iraqi scientists were threatened and left the country. Nevertheless we eked out data from rainfed and irrigated farmers for three years.

In controlled trials in secure areas we were able to show excellent results for improved practices with salt tolerant wheat, improved potato varieties, tomatoes under plastic, improved wheat varieties, barley/vetch mixtures for animal feed, and rice-wheat crop rotations. But we had little impact on farmers because of lack of water in the irrigation systems, and lack of energy for pumps, and most of all – our inability to get improved technology to farmers because of the security situation and lack of trained extension agents.

Working with USDA, six Iraqi universities, five US universities and the Iraqi Ministry of Agriculture we began training Iraqi extension workers outside Iraq, We trained them in Lebanon, Syria, Egypt and Jordan, and they have gone back into Iraq with small amounts of project funds. These have been particularly successful in Kurdistan. But to our U.S. military commanders on the ground, little progress was visible. In February, 2007, seven colleagues and I accompanied the members of the DoD Task Force for Business and Stability Operations (TFBSO) to Iraq to see the situation from the vantage point of the forward operating bases. I arrived in Forward Operating Base Warhorse in Diyala with the first troops of the surge, and I departed on the helicopters with three of the early heroes of that action. I honor them today.

That February we visited FOBs and Provincial Reconstruction Teams all over Iraq. We were deeply impressed by the effort, dedication, and skills of the PRT civilians and the military civil affairs units operating at the FOBs. They were having an impact but they also told of several problems that limited their effectiveness. (1) There was never a sufficient breadth and depth of agricultural science capacity to fully respond to the agricultural problems and opportunities in any locality. (2) Contact was so limited by development workers with Iraqi farmers, leaders and agribusinesses that little could be accomplished in the short and rare visits. (3) Finally, there were no Iraqi plans for agricultural development, at any level – from Baghdad, to the province, to the communities. Assistance projects though valiant, did not build on one another, lacked technical precision and were often incomplete.

Generals in the Central, North and Western Iraq regions requested agricultural specialists to serve directly under their commands. In June 2008 a multidisciplinary team of 14 university agriculturalists were deployed by the TFBSO to the command of General Oates in MND-C, and in November 2008 teams were deployed to MNF-West and MND-North. Our Central team, called Team Borlaug, worked in 8 provinces over 6 months, operating out of about a dozen bases. We spent about 65% of our days in the field, and logged over 7000 hours of contact time with Iraqis. We formed 4-H clubs. We prepared agricultural development plans and recommendations at the local and provincial levels that Iraqis claim as their own. We put in drip irrigation demonstrations, improved curriculum at universities, helped develop the Central Euphrates Central Market, and trained hundreds of Iraqis in poultry production, livestock management, crop disease management, tillage, machinery and other areas.

This effort of agriculturalists working with soldiers in the field on a daily basis has been unique in Iraq and highly rewarding to the participants. It is also complementary with the work of the USAID Inma project, and the USDA agricultural extension projects. Our same universities have staff on all these projects, and we stay in communication. However what are more important are our growing Iraqi partnerships. The most important product of our work is the empowerment that it has given to Iraqis, who, in their own words, were hiding out before we came and showed interest in their farms, their animals, and their homes and families. The PRTs also gained from the broader scientific expertise brought by the teams, helping to validate and improve their plans.

Here are some of our observations from the field:

- (1) We need to study and better understand the role of development before, during and after conflict. Development workers can and should be engaged with communities throughout these times, and their efforts will be fruitful. But the process of development in these circumstances are not well understood and requires the effort of a range agriculturalists, engineers, psychologists, political scientists, economists and others.
- (2) Technological information and infrastructure, especially plant and animal genetics, and disease diagnostics are severely lacking. Plant and animal genetics are very badly degraded and almost nothing yields to its reasonable potential with the resources available.
- (3) Years of government control of on-farm agricultural affairs have left farmers with little knowledge of the management alternatives that would improve their production.
- (4) For the past 6 years, our efforts have had short time horizons. We could have done much more to help re-establish the animal feed industry, producing vegetable oil for human

consumption and protein meals for animals, if we had adopted longer planning horizons. The agricultural value chains are broken and we are not taking the time to help repair all the critical links, and therefore isolated efforts fail.

(5) Our soldiers including civil affairs units are the first responders to conflict and they are playing highly useful roles in moving communities out of conflict. They need better training and support for the early roles that they play in assisting communities to survive and recover from conflict.

(6) One of the most debilitating features of US development assistance in situations of conflict is the inability of our agencies to work cooperatively. In 2006 the then Minister of Agriculture of Iraq stated with great concern that her greatest challenge was that US agencies seeking to assist her ministry spoke with many conflicting voices.

Many of these problems that I mention are also common in other fragile nations, but I particularly want to draw attention to two common problems, or areas of opportunity in the agriculture of both Iraq and Afghanistan: Land tenure and youth programs.

Secure access to land is the underlying problem that hinders all progress in agriculture in Iraq and Afghanistan. In Iraq land access is governed by an overlay of rights from the Ottoman Empire, the subsequent kingdom, the revolutionary government of Karim Kasem, and the many interventions by Saddam Hussein. Iraqi farmland is becoming saline because farmers will not make long term investments to combat salinity without securing long term rights to land use. It doesn't pay them to build the land, when they cannot be sure of farming it themselves later.

In Afghanistan our university team is working with nomadic Kuchi herders, who provide about two-thirds of the lamb and goat meat in Afghan markets. Traditionally they grazed their animals under long term agreements with farmers, but over the past 30 years these patterns of grazing rights were disrupted by warfare, land abandonment, and assertions of land rights by new parties. Using advanced systems of monitoring range quality we are able to help the Kuchi herders improve production while protecting the range.

But the underlying problem is weak institutions for land administration in Afghanistan and Iraq. Massive effort needs to be undertaken to adjudicate, document and administer land use in these nations. Agricultural progress will be continually hampered until this problem is solved.

The second common issue is education, training and nurturing of leadership and enterprise among Iraqi and Afghan youth. Burned indelibly in my mind is the image of a few young Afghan men trying to get an education at an agricultural high school in Jalabad in December 2002, with no books, no paper, no desks, no pencils, little food and warmth, but with a few bedraggled but smart and dedicated teachers. Also the images of village youth in Wasit, Iraq, and the Bedouin Camps in Najaf, their looks of desperation while their families struggled for food, tells me clearly where terrorists come from. It so happens that in both locations we met with their handiwork.

Youth development thorough programs such as 4-H and FFA receive little or no attention by International development programs, national plans and programs, even US university extension programs in developing countries or by the system of international agricultural research centers,

the CGIAR. It is urgent that we work constructively with youth in developing countries to bring them greater hope for their future.

Our programs to help restore field crop production in Iraq have been inconsistent. We started out well with USAID programs in wheat and barley, but did not stay with the task of field crop improvement. In Afghanistan the situation is worse. The much of the land for field crop production has been taken over by opium poppy production. Our approach has been to replace opium with high valued crops, which seems to make common sense. However in recent years, Northern Burma opium farmers switched to corn production when they found high yielding varieties and improved production practices. Opium farmers are often little more than labors on their own farms. Their families cannot eat opium and they cannot feed it to their animals. They cannot store it and sell it when and as they wish to a choice of buyers. Northern Burma farmers have switched from opium when they found steady sufficient incomes from field crop production. In Afghanistan as well, a more robust program of farming alternatives need to be supported including not only high valued crops, but also need crops of cereal grains and oilseeds.

Finally I wish to turn more broadly to the issue of development and conflict. In his book *The Bottom Billion: Why the Poorest Countries are Failing and What Can Be Done About It*, Paul Collier observes that “seventy-three percent of people in societies of the bottom billion have recently been through a civil war or are still in one.” Poverty, hunger and conflict are so closely interwoven that development effort among the food insecure must inevitably be undertaken among the politically insecure. Regrettably it is clear that civilian aid workers must increasingly face the dangers of conflict in developing countries.

Development efforts in fragile nations in the Middle East, Asia, Latin America and Africa are challenged by many questions. What is the economic cost of insecurity? What science, governance and economic policies are needed to bring about development in the presence of insecurity? When does conflict cause poverty; and when does poverty cause conflict? How have fragile nations avoided conflict? What systems of governance or resources and technologies sustain communities during conflict? Can the process of recovery begin before or during destruction? Must agricultural workers join soldiers in the battlespace? Can development be achieved under conditions of kinetic conflict?

With the support of USAID, colleagues at Texas A&M and Michigan State Universities have spent eight years in the post-conflict environment of Rwanda and made enormous progress working with the widows and orphans of genocide. Women’s cooperatives now market premium coffee brands from trees that they had started uprooting to throw away when we arrived. The National University of Rwanda at Butare has been our partner throughout the process. We trained their faculty, improved curriculum, and facilitated their research and extension to African coffee farmers. One of the students trained for the PhD in the US, is now the president of the Rwanda coffee cooperatives. The transformation of the coffee growing communities is astounding, and it came through the cooperation of US and Rwandan Universities.

But also during this period I worked with the West Africa Rice Development Association at its three recent homes in Ivory Coast, Mali and Benin. In the Ivory Coast a USAID worker and I had the experience of becoming isolated in remote areas during an attempted coup. Then, and during the following two years I had several opportunities to meet the Force Nouvelle leaders and their men. The leaders were charismatic, and their men were the youth of West Africa where they had lost hope in their future. I feel deeply sympathetic for those forces and their communities, and wish that we had in place Ivory Coast, Mali, Benin, Senegal, Nigeria, and the other nations of Africa the kinds of university program that were possible in Rwanda.

In closing, I summarize:

- (1) We need to study and better understand the role of development before, during and after conflict. Development workers can and should be engaged with communities throughout these times, and their efforts will be fruitful.
- (2) Technological information and infrastructure, especially plant and animal genetics and diagnostics are severely lacking, but in many regions secure access to land is the underlying problem that hinders progress in agriculture.
- (3) Finally, in Africa as in poor communities of South and Central Asia, Middle East, Latin America and other world regions, it is the youth without a future who are among our most regrettable losses and the greatest threat to peace.

Colleagues and I at the land grant universities of the U.S. are ready and eager to engage with the federal government in new ways to combat hunger, poverty and conflict throughout the world. Thanks for inviting me to speak with your committee today.

Thank you Mr. Chairman.

Notes of some Iraq accomplishments, recognized at the end of the deployment of Team Borlaug of the DoD/TFBSO in MND-C, are appended below.

All accomplishments by Team Borlaug were built upon the progress and good will that has been established by our military men and women who have been on the ground in Iraq for the last five years. While we were here, we could have done nothing without their daily support, guidance and protection.

Here are some of the things they helped us to accomplish:

Iraqi voices. We conducted eight provincial agricultural assessments reflecting the collective voice of agriculture in the provinces—with participation from sheikhs, Bedouin shepherds, governors and subsistence farmers. Many Iraqis considered our views and recommendations as their own, and they felt newly empowered to assert leadership for their own affairs.

Strengthened partners. We learned from and contributed to the ongoing missions of civil affairs units of the military, PRTs and the Iraqi government for recovery and development of the agriculture sector. Our cooperation helped to strengthen and confirm the missions of our valued partners to assisting Iraqi communities.

Problem solutions. We gave farmers immediate advice on problems with animal diseases, insect pests, feed rations, tillage practices, crop varieties, irrigation and drainage practices, and many other problems and improvements. We also gave ideas to agribusinesses and policy makers on current problems and opportunities for innovation in the Iraqi agricultural sector

Command response. We prepared special analyses for the command on poultry production, seed storage, agricultural input subsidies, improved wheat planting, rebuilding the oilseed value chain, tourism development and other special reports.

Project implementation. We helped or led implementation of projects on drip irrigation, management of the Central Euphrates Farmers Market, improvement of fish brood stock, formation of agricultural youth clubs, and improvement of university teaching materials.

Strategic plans. We provided plans for implementation within the MND-C command for use by regional and provincial leaders. Each assessment is a communication tool and framework for discussion that includes detailed observations, promising strategies, recommendations and priorities for Iraq agricultural development among complementary US agencies.

Communication and cooperation. We fostered communication and cooperation among Iraqi agencies, including the governors, provincial councils, provincial DGs, farmers' associations and local farmers and the PRTs and CA teams. This helped improve relationships between Iraqis and Americans at provincial, community, family and personal levels.

Vision, trust and hope. We helped the Government of Iraq, provincial councils, community leaders, PRTs and ePRTs, and US agencies articulate their vision for the future of Iraq. We encouraged rural Iraqis to place trust and hope in their leaders, in a new agricultural economy, and in a new way of life through education, training, and entrepreneurship.

While saying all this, we see how very far rural Iraqi communities have yet to go before they can fully realize the benefits of freedom. The job has just begun.