

**Afghanistan Owned Solution:
Creating Jobs for Afghanistan through
Private Sector Project Funding**

*Plan for Afghanistan Agricultural
Job Creation*

Consortium: Advisory Group

December 16, 2009

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Plan for Afghanistan Agricultural Job Creation



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The Government of Afghanistan
The Embassy of Afghanistan
The United States Department of State
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***“I am convinced that our security is at stake
in Afghanistan and Pakistan.”***

President Obama, Address at West Point Military Academy, December 1, 2009

Statement of Purpose

On December 1, 2009 President Obama laid forth a direction for U.S. and coalition partners’ action to be taken in Afghanistan. Preparation for the transition of July 2011 needs to commence now so to foster societal stabilization by fighting extremism and terrorism through a major initiative that encompasses agriculture, energy, water, waste management, education, and health that is focused on all the communities in Afghanistan’s 34 provinces.

To accomplish this, we propose that in The Afghan Plan, a public/private partnership to address these sectors, the first sector to be addressed should be Agriculture. The agriculture initiative would best be structured as an Afghan-owned Solution: Creating Jobs for Afghanistan through Private Sector Project Funding for Agriculture and Agri-Business opportunities than currently exist in Afghanistan.

The challenge is to create economic change within Afghanistan through developing programs that are Afghan-owned and promote private sector investment that creates sustainable job creation by the private sector. This can be done by standing-up a joint U.S. / Afghanistan Quick Response Team focused on assisting the international community and by the private sector investing in Afghanistan.

We need to change the paradigm from a problem to an opportunity with regards to investing in a country in major conflict.

The proposed approach is to take agriculture and agri-business opportunities in Afghanistan and to turn them into projects through the assistance of U.S. agencies, Coalition partners, and the Afghan Government. We will create a targeted implementation model focused on technical assistance.

We will do this by:

- identifying good opportunities that currently exist in Afghanistan;
- proposing tangible investment plans with public and private-investor commitments;
- involving the international financial community and foreign governments;
- redirecting proposed current funding to support the public/private sector in Afghanistan with additional support from the Afghan Government;
- completing business plans, due-diligence check lists, and financial and investment applications to respective financial institutions and foreign governments; and
- concluding required investment agreements among the mutual parties.

The Quick Response Team would then focus on providing full implementation and technical assistance as needed to insure investment success.

The first proposed project would be an Agri-Business Hydroponics Demonstration Farm.

This would be one of the first U.S. inter-agency Fusion Projects, recommended as a project that could bring significant agricultural value to Afghanistan. It has been requested by the Afghan Ambassador on behalf of the Government of Afghanistan as one of the agriculture-sector projects that can have

significant impact both upstream and downstream with regard to agricultural value chain benefits for Afghanistan.

It will also have significant public/private partnership benefits within Afghanistan as the international community works with the private sector.

This represents a collaboration of new and different approaches required to jump start the private sector investment for agriculture investment in Afghanistan.

This plan, “*Developing Afghanistan-Owned Solutions: Creating Jobs for Afghanistan*” requires multilateral and bilateral backing to create sustainable economic investments to secure development of commerce in Afghanistan.

These elements are the focus of an area wide targeted agri-business investment that are supported by concrete proposals which include all essential commercial aspects of proposed investments; business plan, due diligence, documentation, and all required financial applications from the major financial international institutions focused on investing in Afghanistan. In addition, all requirements from the government of Afghanistan’s including licenses, land permits, governmental and provincial approvals, tax assessment, investment incentives, etc, would be obtained from the Ministries.

As a new team of project developers would be assembled they made-up of complimentary U.S., Coalition partners, and Afghanistan government agency staff.

This team would turn concepts into full-fledged, investment-ready projects to target provinces within Afghanistan.

The proposed Afghan program approach contains these elements:

1. Concrete proposals for jump starting a number of area-wide recoveries of agriculture ...
2. Undertaking domestic measures necessary for internal economic stabilization ...
3. Comprehensive measures to foster trade...”

— “Summary of [State] Department’s Position on the Content of a European Recovery Plan,”
Second Draft, August 26, 1947

This approach contains many of the same elements that were successful in the European Recovery Plan, aka “The Marshall Plan” It would provide some of the economic measures needed for an agricultural footprint in the stable provinces, and non-stable provinces in Afghanistan, as well as to focus on the Government of Afghanistan to link them to the international community and the private sector for leadership programs.

“It is rather trite to say that the world is now a small place, but that is a fact, and what happens in distant places affects our affairs and our lives inevitably, often very quickly and sometimes most seriously.”

— George C. Marshall, October 15, 1947

Tenuous results from U.S. aid

The Asia Foundation conducted a survey of all 34 provinces between June 17 and July 6, 2009.

Their report “*Afghanistan 2009: A Survey of the Afghan People*” demonstrates that while there is general progress, it is thin and tenuous at best. In some areas, the respondents’ response to whether democracy is the best form of government has fallen to 78% in 2009 from 84% in 2006 and those agreeing about the importance of equal rights has continued to fall over time with 80% supporting the principle in 2009 and down from 90% in 2006. The same is true for the belief in the principle of peaceful political opposition; it has fallen to 77% in 2009, from 84% in 2006. Afghan Ministry of Finance data on aid pledged, committed and disbursed, provided February 2008, was never included.

The USG cannot afford to fail in Afghanistan *nor* can the USG afford to continue to fund aid models that produce so marginally. A re-defined model must be employed to achieve our goals of fostering stability and economic development for the Afghan people.

Plan for Afghanistan Agricultural Job Creation

Dr. Glenn Hubbard, Dean of Columbia’s Business School, said in his 11/13/2009 *Washington Post* Op-Ed article addressing the recent Congressional approval of the \$7.5 Billion in aid for Pakistan’s social and economic development, “... *foreign aid has been a spectacular failure in promoting social and economic development.*” He closed with “*The current aid package should become a Pakistan Marshall Plan – before it is too late.*”

The same can be said for Afghanistan, the current aid package for Afghanistan should become an Afghanistan Marshall Plan – before it is too late. AND then give Afghanistan a “Plan for Afghanistan Agricultural Job Creation” which would spearhead The Afghanistan Marshall Plan.

The Plan for Afghanistan Agricultural Job Creation would be the lead public/private economic development project of The Afghanistan Plan which would be part of a larger South Asia Recovery Program. The South Asia Recovery Program would be modeled on the historically successful European Recovery Program, now known as The Marshall Plan.

*Afghanistan-Owned Solution:
Creating Jobs for Afghanistan through Private-Sector Funding*



I. Overview

Over the last eight years the amount of private sector development funds available and ready to invest in Afghanistan has reached historic highs. A list of 41 countries that have made monetary commitments towards Afghanistan's reconstruction and redevelopment is contained in Appendix 2. At the June 12, 2008, conference in Paris, Afghanistan formally presented its Afghan National Development Strategy, asking for \$50.1 billion during 2009-2014 from international donors.

Notwithstanding, only a very small percentage of commitments have been converted into actual funded programs and initiatives. The support mechanisms include, but are not limited to, direct grant investments, loans, and guarantees. Some of the most pressing program sectors include private-sector

projects in agriculture and agri-business development. The lacking elements for success is the continuation of war zone challenges, but more challenging is the lack of inter-structure between the U.S. Agencies, support from foreign governments donors, Afghanistan Government, and the private sector. There has been no vehicle that can connects and all of these organizations and focused on connecting the dot's of opportunity with the private sector groups that can produce concrete proposals for investment implementation, once all of the approvals have been awarded. This proposal represents a collaboration of new and different approaches required to jump start the private sector investment in Afghanistan.

The on-going hostilities in the region, challenges to safety and security and perceived or actual election concerns all contribute to the lack of project execution. Furthermore, the delay in having its national election and the irregularities in the most recent election have had a chilling effect on private sector investment. These challenges aside, we believe that Afghanistan Government and the donor nations must position Afghanistan to stimulate and effectively utilize a reinvigorated private sector investment effort. We believe that **Creating Jobs for Afghanistan through Private Sector Funding** will make a significant contribution in terms of jump starting private sector investment.

Our primary goal is to develop new investment approaches and opportunities that can be in quick response to truly sustainable job creation opportunities in the Agriculture and Agri-business sectors. The second focus would be on having the Afghanistan Government provide in-kind staff to be assigned to the project on a full-time basis and assist in and complete the first demonstrated pilot projects. This would count as their contribution and build capacity.

This new approach comes in responding to an Afghanistan Government request to assist with the restart of the private sector in regard to new investment opportunities. The proposed program would be an Afghanistan-owned approach to develop new, effective ways to encourage private-sector investment and to demonstrate the government's ability to act decisively and in concert with both private-sector funding sources and foreign governments' desire to fund and develop new programs that encourage private vestment. Simply put, economic growth is essential to any form of long-term stability¹ in Afghanistan, and business and investment are key to that growth.

Some Detail



Hydroponics can develop the market channel and can demonstrate Afghan quality and consistency. Local and regional markets can become more robust. Export opportunities are large and have an immediate demand, high profit margins, and the ability to earn foreign exchange.

The purposes of this plan are to bring the players together in a coordinated effort to support private agriculture and agribusiness and then to demonstrate the value and promise of the first pilot projects of Hydroponics. The focus will be on getting the parties together, on achieving a focused coordination of

the actors, and on offering the business support and development needed to kick start a number of promising private agribusiness ventures. The purpose and focus are consistent with the U.S. Government Fusion Cell concept. The concept is to have interagency cooperate to find new ways, programs, to assist the Afghanistan and well as in Pakistan country opportunities to matched with funding from international institutions and foreign donor governments.

An early step in process will be to develop commercially viable business plans with the associated, committed government assistance to induce the private sector to become involved in the plan from the start and stay involved from funding approval to project implementation. These proposed agriculture and agri-business approaches will create complete investment packages, including a completed commercial business plan and a completed financial application for individual or multiple major banks and for foreign government guarantee programs. This turn-key approach is essential but it is not currently in a single combined process. The first proposed project would begin to develop an internal new-business approval procedure as a one-stop process with the Afghanistan Government for each new proposed turn-key project.



The proposed private-sector agriculture initiative will focus on a number of opportunities that will engage the private sector to invest in Afghanistan by having complete investment packages that include the business plan and pre-approved financing, subject only to investor due diligence being approved by the financial institution.

One of the major challenges foreign investors face in Afghanistan is that there are very limited commercial business plans that have been developed. The private sector and international financial community have requested that if fundable commercial plans are developed then they would focus on funding critical pilot programs that would jump start key agriculture and agri-business that would have significant impact within Afghanistan.

At the core of the plan are the concepts of well-developed business plans (funded by the Task Force) and of an intergovernmental group putting the foundation under the plans with government pre-approval and permits. It must be acknowledged that this is a huge challenge and must be addressed as early as possible.

This approach is new and unusual; most business plans are developed by a private company interested in an opportunity that they see based on their experience in a sector or a specific industry. In the Afghan context, this approach is needed to attract experienced businesses and investors.

The plan's approach combines multi-national support, Afghanistan-government support, and private-sector efforts, all focused on quick response for sustainable agricultural and agri-business projects in the private-sector.

Specific actions are required by the participants, to wit: The proposed example is to have U.S. representatives and Afghanistan Government representatives work together in a combined effort to assist in focusing on target agriculture investments that are lead and supported by the private sector in Afghanistan.

II. Introduction



The goal of this paper is a threefold-fold:

- (1) to suggest what is necessary for the private sector to start investing in Afghanistan,
- (2) to recommend a viable, shovel-ready agricultural lead project and
- (3) to have the Afghanistan Government match the proposed project funding requirement with in-kind staff to be assigned to the project on a full-time basis to assist in the development and completion the first agribusiness project.

The overarching goal is to develop new investment approaches and opportunities that can advance job creation opportunities in the Agriculture and Agribusiness sectors in Afghanistan. Developing Afghanistan Owned Solutions: “Through Creating Jobs for Afghanistan Nationals through Private Sector Funding”.

This new approach comes in responding to an Afghanistan Government request to “Jump Start” the private sector in regard to new investment opportunities. The proposed program would be an Afghanistan-owned approach to develop new, effective ways to encourage private-sector investment and to demonstrate the government’s ability to act decisively and in concert with both private-sector funding sources, foreign governments wanting to fund and to develop new programs that encourage private vestment.

This proposed approach has been developed by a joint American/Afghanistan /Middle East advisor group made-up of professionals from the agriculture agri-business private-sector as well as agriculture experts, University Professors agriculture advisors, development advisors, and U.S. government officials. This group reviewed and discussed numerous agriculture and agri-business opportunities and from these multiple opportunities developed a core list of potential projects (the first of which would be a hydroponics demonstration farm) that would have significant private sector investment appeal.

The Afghanistan Government has made an official request to the United States Government to jump start the first joint private-sector pilot program for developing commercial agriculture and agribusiness opportunities in Afghanistan. The proposed project has received letters of support from the Government of Afghanistan, the private sector wanting to have a system of developing projects that currently not be addressed.

The proposed projects would be major commercial demonstration projects that take Afghanistan from being at the bottom of exports, to having projects that would lead the way in positioning and restoring Afghanistan as a new regional center for agriculture production which would attract former and new international buyers to the Afghanistan market. This proposed development solutions approach has been discussed at the highest levels within the Afghanistan Government. The focus on job creation through private-sector agriculture and agribusiness investment is the major focus of this proposed project. Simply put, however, unless and until the problem areas and dysfunctional ties impeding economic growth are remedied, the prognosis for Afghanistan is grim without new approaches.² Focusing on quick-start private sector pilot investment opportunities is essential to jump start the agriculture and agri-business investment process. It is critical to start to bring back the international buyers focused on buying agricultural products from Afghanistan. This proposal focuses at the highest levels of international buyers needs with the highest levels of agriculture products being produced in Afghanistan.

Enabling access to agriculture information, and collaboration, coordination, and information-sharing among farmers, buyers, distributors, government officials, and others is critical to change the current environment and to focus on promising approaches for agriculture exports. This initiative focuses on the importance of information links between the key elements of an export-oriented, high-value, agricultural program. By establishing the first pilot program infrastructure which will begin to develop for use by the between for the private sector, farmers, government, and purchasers, such as the initiative will help improve productivity and maximize business opportunities.

The first step in this process is to develop commercially viable business plans with the associated, committed government assistance to induce the private-sector to be involved from the start of the development of the project through project funding approval to project implementation.

These newly proposed agriculture and agri-business approaches will create complete turn-key investment packages, including a completed commercial business plan and a completed financial application for individual or multiple major banks or foreign government guarantee programs.

This turn-key approach is essential but is currently not in a combined process. The first proposed projects would begin to develop an internal Afghanistan new business approval process as a one-stop approval process with the Afghanistan Government for each new proposed turn-key project.

Currently in Afghanistan, the public and private sectors lack the ability to effectively coordinate activities to collect, develop, produce, distribute, and share information. This initiative will teach and install the process for the private sector to be able to have projects developed at a faster pace. By laying the infrastructure, it will enable the private- sector, financial community and the Afghanistan Government to be able to attach technology transfers and improve public / private sector collaboration.

The proposed projects will be working examples of and include links for the proposed Kabul area processing and storage facilities to enable information sharing / business processing, agriculture crop extension services, export marketing, pest monitoring and management, and other needs of the local farmers and those in the processing, storage, and export stages.

The proposed private-sector agriculture initiative will focus on a number of opportunities that will engage the private sector to invest in Afghanistan, by having complete investment packages, including

the business plan and pre-approved financing for the project, subject to investor due diligence being approved by the financial institution.

This would include all land requirements being pre-approved by the Afghanistan Government, which would also include all permits required for the business to start operations. These programs could be started immediately and used as models or prototypes for a larger effort.

One of the major challenges foreign investors face in Afghanistan is that there are very limited commercial business plans that have been developed. The private sector and international financial community have requested that if fundable commercial plans are developed, then they would focus on funding critical pilot programs that would “Jump Start” key agriculture and agri-business that could have significant impacts within the country of Afghanistan.

Likewise, there is very limited investment commitments associated with any current investment opportunities in Afghanistan by major financial institutions or foreign governments focused on the private-sector initiatives at this time. However a number of financial institutions and foreign governments have made verbal commitments to invest, in Afghanistan private-sector yet they have struggled to find sound commercial opportunities, due to a lack of any organized approach or program being supported at this time. Having a multi-national foreign government approach with and Afghanistan government supported approach and a private-sector task force focused on quick response private-sector sustainable agriculture and agri-business projects.

The goal of this new pilot program is to begin to focus on critical agriculture investments that can be signature investments. This new approach was developed by experienced American professionals, academia agricultural professionals and other experts with long careers in government, agriculture, and development. These efforts must be integrated under a comprehensive campaign plan that brings together security and reconstruction efforts and the plethora of governmental and nongovernmental organizations working in Afghanistan. All agriculture and agri-business need to have the component that provides another path is a suggestion for the counter-narcotics effort.

Currently, eradication is being stressed among the priorities of education and alternative job creation. This proposal fits within the scope as one of many solutions aimed at counter-narcotics.

The first specific agriculture opportunity has been identified as one of many opportunities that can have a significant impact for creating the first commercial Afghanistan hydroponic farms as the first signature commercial private-sector investments for rejuvenating the agricultural sector.

III. Pilot Plan for Agricultural /Agri-Business Hydroponics Demonstration Farm



Priority 1: Construction of first state-of-the-art hydroponics commercial farm which would include commercial processing and warehouse facilities in the Kabul

This priority focuses on building the capacity of Afghan commercial farmers to develop the skill set to meet a potentially lucrative commercial export market, and develop efficient transportation and marketing channels that, once proven, can be copied by others. By financing the rapid construction of a network of hydroponic state-of-the-art commercial farms that are Afghanistan-owned, and utilizing a new approach to funding private-sector agriculture / agri-business programs in Afghanistan, one establishes a replicable model for the sector.

The approach recommended is focused on assisting in the development of Afghanistan- owned solutions for agriculture and agri-business that includes Afghan investors, and international funding organizations which are focused on and committed to creating and investing in private-sector sustainability agriculture / agri-business projects for Afghanistan.

The Afghanistan Government would be also participating by creating an initial pilot program and assigning associated Afghanistan nationals to be a part of the team being developed to have them learn all aspects of Business Plan Development, the application process for getting approvals for private sector investments. The Afghanistan Government would assist in the engaging of the private-sector and the application and investment process.

The proposed quick response team would act as developed as part of this process to develop the internal capacity to develop commercial business plans and associated funding applications for private-sector projects requesting foreign investment.

The government commitment would be to provide one staff member from each of the following organizations; Ministry of Agriculture, Ministry of Investment, Ministry of Commerce and one or two from the University of Afghanistan one from agriculture and one from the business departments.

The group also solicited input from the management groups from one of the world's largest commercial hydroponic farms in the Middle East. This proposed project meets all of the requirements to demonstrate the highest levels of commercial exports from Afghanistan, from the agriculture and agri-business sectors within the country.

Using a new approach, the commitment for this type of approach is coming from the Afghanistan Government to create a new strategic partnership program with the United States Government. The combined focus would be on creating joint working groups using this project to demonstrate to all of the regional agriculture extensions groups, throughout Afghanistan these new technologies and agriculture best practices. This proposed project can be show cased as agriculture teaching facilities for the Afghanistan University and their agriculture extension networks to demonstrate state-of-the-art hydroponic growing methods, sorting and packing as well as accompanying refrigeration, and storage facilities. The proposed hydroponic farm would have "off-take" agreements for contract producing agriculture high-end produce for export from major international buyers.

The Afghan agriculture export sector flourished in the years before the Soviet invasion in 1979.³ This initiative will once again prove that the Afghan farmers have the potential to export high-end agriculture products that once dominated the international market in pistachios and supplied significant amounts of other perennial, horticultural products, especially dried fruit and nuts. That is, through this pilot, a foundation for Afghan agriculture and agribusiness, with consistent quality and quantity, can be re-established, and built upon – but it has to be delivered by the private sectors, with heavy involvement by Afghan partners.

The Afghanistan Ministry of Agriculture has identified this large export market as a crucial opportunity for high-profit, agricultural activities. India is often mentioned as the leading market for such products, and its fantastic levels of economic growth in recent years may further increase demand.

The need for a network of processing and storage facilities is urgent. Efforts to date by International Donors to build processing/storage facilities have focused on the local level, (e.g., sorting, cleaning, and storage facilities) funded through smaller, community-driven projects. Such efforts are important, but contribute little to the export side. In the absence of a network of commercial facilities that link the regions of Kabul, Kandahar, and Helmand, the most that donor efforts are likely to achieve is the creation of more robust local and regional agricultural markets.

Export opportunities are large and have exceptional and unique benefits, such as high profit margins, immediate and high demand, and possibilities for earning foreign exchange. While the international donor community has taken important steps in funding projects to improve finance (micro-credit) and general infrastructure (roads), this pilot project fills an important need for linking such initiatives with major high-end buyers to markets in countries around Afghanistan. Unfortunately, given current difficulties in the security arena, as well as sluggish progress in some areas of reconstruction, relying on the domestic private sector to fill this need is not a feasible solution, especially if a premium is placed on short-term impact. If the maximum values of the current Afghanistan Government and International Donor Community efforts are to be extracted, a specific and ambitious program to build the foundations of a horticultural exports economy is crucial. The proposed project would be the first of four (4) proposed sites, strategically located in outlying, major farming areas to facility of moving high-value produce to central processing facilities, preparation for export.

The proposed program would be developed based upon one the largest commercial hydroponics farms in the World, which includes state-of-the-art processing and warehousing facilities.

The project would be drafted in connection with the Mirak Group, which owns and manages the largest hydroponic commercial farm in the world which is based in Dubai. Mirak has a complete turn-key process and commercial farms in one of the most extremely difficult agricultural environments in the world.

The Mirak Group would also be contributing in all the commercial aspects of developing the business plan and would assist in the selection of all the facility processing equipment manufacturers, controlled-climate storage capacity providers, and selection of local and international experts, including the agricultural building designers.

The proposed business plan would include a master-plan that would be implemented as soon as the business plan and financing plan have been approved by all appropriate parties associated with this proposed plan. All of the detailed requirements, with regard to and the machinery, refrigeration, and processing facilities would be sourced to meet the extreme environmental challenges of the country Afghanistan.

The enhanced commercial product quality and values will, in turn, create more reliable markets and higher purchase prices for the growers' goods. The first proposed location will generate hundreds of direct commercial jobs as well as estimated up to 1000 to 3000 indirect Afghanistan National be jobs created. Additional companion field receiving and pre-processing stations will be developed in strategically located, outlying farming areas to facilitate moving high-value produce to the proposed central processing facilities. The cold-chain, product-handling systems using truck-mounted, refrigerated containers will improve the field-to-receiving-station handling of high-value, perishable crops during harvest to be used for the first areas identified in the business plan.



A. Minimal Water Requirements



This priority focuses on the importance of new approaches and the first pilot programs that do not require large amounts of water. This can lead to new types of large-scale solutions in overcoming the key limiting factor in agricultural productivity in Afghanistan – water.

This proposed project is the pre-cursor to the opening up of new, large-scale sources of fresh water, so critical to all agriculture, especially high-value vineyards and orchards; this recommendation provides a critical input for long-term, sustainable, agricultural production.⁴ It also addresses solutions for the shortage of water, which is a critical barrier to fostering new agricultural opportunities in Afghanistan. The ability to grow poppies in arid conditions reinforces this importance, as farmers in regions without a sustainable source of fresh water will find it difficult to earn income without resorting to illegal products. In particular, the southwest region of Helmand is both arid and home to major of Taliban activities.

Without a new solution like hydroponics versus large-scale water solution arid areas like Helmand will be resistant to turn to long-term, poppy agriculture. This priority approaches the large-scale water supply issue with proven hydroponic approaches that can create major commercial farm opportunities with limited need for water resources.

B. Building First Commercial Demonstration Farms



The priority is to create signature Afghanistan commercial farms that produce high-valued cash crops. That in-addition can provide training and information throughout Afghanistan and opportunities to work with farmers, who want to make the transition from cereals and poppy production to high-value, high-profit crops for export. The existing agricultural product areas within Afghanistan that can be leveraged that can be benefited, because of the proposed commercial sorting, packing, and cold storage facilities is very important. Specifically this refers to carrots, tomatoes, cucumbers, grapes, raisins, almonds, walnuts, pistachios, apricots, and possibly pomegranates, mulberries, oilseed crops, and vegetables for drying (such as peppers and tomatoes).

These professional relationships would introduce the commercial export buyers to other agriculture product lines in addition to hydroponics product areas.

C. Hydroponics for Afghanistan



Understanding that Hydroponics (from the Greek words *hydro* water and *ponos* labor) is a method of growing plants using mineral nutrient solutions in water can mean without soil. Terrestrial plants may be grown with their roots in the mineral nutrient solution only or in an inert medium, such as perlite, gravel, or mineral wool.

The history of hydroponics is that plant physiology researchers discovered in the 19th century that plants absorb essential mineral nutrients as inorganic ions in water. In natural conditions, soil acts as a mineral nutrient reservoir but the soil itself is not essential to plant growth. When the mineral nutrients in the soil dissolve in water, plant roots are able to absorb them.

Some of the reasons why hydroponics is being adapted around the world for commercial food production are that it's faster, results in better growth and much greater yields.

Today, hydroponics is an established branch of agronomy throughout the World. The growth rate in hydroponics systems and programs throughout the World has expanded rapidly.

The progress has been rapid, and results obtained in various countries have proved it to be thoroughly practical and to have very definite advantages over conventional methods of horticulture, where there is water access problems, and lack of high-in commercial inputs.

The two chief merits of the soil-less cultivation of plants are, first, much higher crop yields, and second, hydroponics can be used in places where in-ground agriculture or gardening is not possible, due to extreme environments or lack of access to a steady flow of water reserves.

Thus not only is hydroponic a profitable commercial undertaking, but one which has proved of great benefit to humanity. People living in extreme environments with limited access to water systems are good candidates for this type of commercial farming can be significantly successful. Deserts, rocky and stony land in mountainous districts or barren and sterile areas can be made productive at relatively low cost. The development of the commercial buyer network is one of the major benefits to Afghanistan is getting the buyers back engaged.

When plants receive perfect “Optimum Growth Variables”, they yield fantastic harvests. Other advantages of the proposed hydroponic program are that it includes faster growth combined with relative freedom from soil disease, and consistency in crops, the quality of produce being excellent. There is also a considerable reduction in growing area needed to produce high volume of agricultural products, weeds are practically non-existent.

Hydroponics also saves water; it uses as little as 1/20 the amount as a regular farm to produce the same amount of food. This can save the commercial farmers the money by allowing reduced water use and the ability to measure consequences to the land around a farm.

The proposed hydroponic program versus standard methods and automatic operations mean less labor, less cost, and no hard manual work. However for Afghanistan the proposed commercial Hydroponic Center will provide the indirect jobs from regional farmers will provide the critical packaging, processing, and commercial certification to the international buyers guaranteeing product quality.

The proposed hydroponic program will be able to provide plants can be that can be raised, out of season, better control of crops naturally results. The uses of Hydroponic growing systems in Afghanistan would include Vertical Growing, Channels System of Growing, Flow & Ebb. The latest Hydroponics technologies and techniques will be employed in the proposed Afghanistan program. The proposed pre-contract produce will generate the highest levels of quality products with the highest standards in commercial quality and packaging suitable for major buyers that are supplying high-end retail establishment, supermarkets and consumers-at-large world-wide.

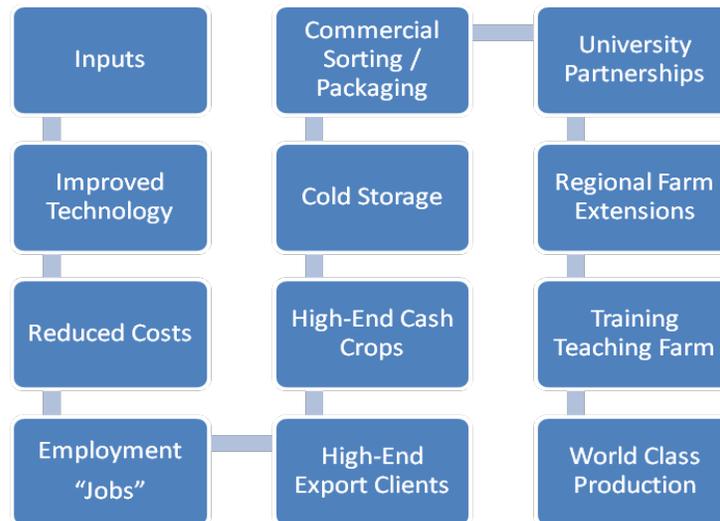
D Major Advantages of Afghan Hydroponics Commercial Farm



- Very High Crop Yields, Class A Exports to Demanding Market in Europe and the Far East
- Saving more than 90% of water used in irrigation of traditional Afghanistan crops
- Introduction of high-end technologies / Best Practices /
- Very low usage of high quality fertilizer / No usage of Harmful Chemicals
- Very Low Unit Costs of various Crops produced / Environmental Friendly Systems of Growing

Proposed Hydroponic Produce Products	
<ul style="list-style-type: none"> ➤ Strawberries ➤ Iceberg Lettuce ➤ Lolo Roso ➤ Radicchio ➤ Flat Beans (Helda) ➤ Runner Beans ➤ French Beans ➤ Okra ➤ Cucumber 	<ul style="list-style-type: none"> ➤ Celery ➤ Capsicum: red, green, orange, yellow ➤ Leeks ➤ Tomatoes ➤ Bunched Tomatoes ➤ Cherry Tomatoes ➤ Other High-value Crops

Proposed Afghanistan Food Security Approach



Proposed Private-Sector Investment

- Afghanistan Proposed Hydroponics Farming Project Assumptions
- Afghanistan Investment Project Profile
- Land Requirements & Investment Cost
- Total Proposed Investment
- Projected Payback
- Private-Sector Analysis
- What Investors Want
- What Investors Will Provide

Afghanistan Proposed Hydroponics Farming Project Assumptions

The costs and benefits of the proposal are summarized in associated tables listed below. The first central processing and refrigeration center will be constructed in Kabul. The proposed Afghanistan commercial farm is going to be set up with all the following; Nurseries, Packing Rooms, Cold Storage, Pre-cooling and Forced Cooling, Facilities equipment, which are required to operate the farm.

No “Growing System” alone can achieve the right results without the existence of the above support facilities.

These facilities will then be used to support the existing agricultural value-chain. No financial assessment has been made on these types of opportunities. The estimated impact would be up to additional 1000 to 3000 indirect farmer jobs depending on the amount of out-take agreements that be structured with the proposed international buyer group.

Afghanistan Investment Project Profile

- | | |
|--|-------------|
| • Private -sector Investors (U.S. & Afghanistan Investors) up to | 30% |
| • Proposed Debt (up to 10-year term Loan) between 50% to | <u>70%</u> |
| Total Proposed Financing | 100% |

Land Requirements & Investment Cost

- 30 to 40 hectares (Located on U.S. Military Base)
- Build out cost \$450,000 to \$500,000 per hectare

Total Proposed Investment

- 30 to 40 hectares build-out cost @ \$450,000 to \$500,000 = \$15,000,000 to \$20,000,000 Estimated Cost

Projected Payback

- \$3,168,000 Net Profit per year / \$20,000,000 = 6.3 years investment payback

Private-Sector Analysis

An initial investor meeting with potential Afghanistan investors was held in September 2009, to determine interest levels and potential engagement of private-sector investors. There was significant interest from the investors for developing this type of program for Afghanistan, with completed business plans and investment engagement processed.

All investment terms and conditions would be part of the business plan and commercial finance plan.

What Investors Want

- Afghanistan-Owned Investment Process
- Investment Grade Business Plans
- Major Obstacles And Red Tape Removed or a Clear Path to Address Them (through AISA)
- High Potential For Return On Investment
- Calculated Risks / Not Foolish Risks
- Afghanistan and American private-sector investors will bring up to 30% of total investment

What Investors Will Provide

- Bring New Technology Approaches
- Afghanistan Local National Job Creation
- Afghanistan Indirect Farming Export Program

- Investment Capital (if selected by OPIC for funding the amount would be up to 50% to 70% of the total Funding as well as Other Investors may equally share in this amount)

IV. Improved Export Sales Linkages to World Markets



The proposed commercial hydroponic farm will improve export sales linkages for all of Afghanistan's produce areas, such as dried fruits, nuts, and other crops through attracting numerous high international buyers to Afghanistan.

This priority focuses on building the capacity and business skills within the private sector of Afghanistan, and to link the anticipated larger quantities of high-value, agricultural products to prospective buyers. By providing near-term assistance to facilitate marketing, quality improvement, and business links with interested buyers, this effort will provide the necessary bridge from processing and storage to revenue-generating sales.

There remains a significant shortage of educated, private-sector professionals with international business experience. Without a number of pilot programs to jump start this process again, the agriculture programs will continue to lag in helping to build even the basic skills needed for negotiating contracts and exports, Afghan agricultural potential will remain unfulfilled. Yet we believe the entrepreneurial energy of Afghans, with the right technical and financial support, when coupled with door-opening pilot commercial ventures, can quickly advance this sectors growth and employment opportunities.

The proposed plan will provide technical assistance in developing commercial marketing and advertising for export of high-value products. Agriculture groups seeking to export such products will require assistance in identifying potential export markets, ensuring quality in processing, and communicating quality to potential buyers, and in designing a

marketing and branding strategy. The focus of these efforts will initially be in South Asia and other regional markets.

The building of a high-valued commercial network of processing and storage facilities will include product-display areas that will allow buyers to inspect the methods of production for quality as well as inspect the indirect aspect of a processing agriculture products that would not be produced at the commercial hydroponic commercial farm.

In addition, the proposed initiative will provide recruitment potential to Afghanistan's regional and international buyers as a vehicle for building critical, business relationships. This direct approach brings the end-buyer into Afghanistan through contracted sales for every product grown at the hydroponic commercial farm. In addition there is the indirect opportunity to leverage this new facility to deliver pre-approved, out-take contract produce agreements through high-end sorting, packing, and storage programs. These approved Buyer outtake agreement swill help to mitigate security-related concerns from the international buyers about doing business and build business relationships and market opportunities within Afghanistan. Significant benefit will being able to organize multiple regional small farmers through the existing Afghanistan agriculture extensions in-direct buying programs that can pool thousands of farmers for the exportation of the produce.

V. Private-Sector: Afghanistan Investors

The public and private sectors in Afghanistan lack the ability to effectively coordinate activities to collect, develop, produce, distribute, and share information. By building-up the proposed infrastructure, it will enable technology transfers and improve public-private sector collaboration.

Moreover, the formal and in-formal agriculture network within Afghanistan will change by Afghans seeing and believing in technology that they can see produce food and successful sales. Exhibiting this type of 21st Century commercial demonstration farm will have a significant impact for change within Afghanistan. The includes the linkages for the proposed Kabul commercial processing area and storage facilities to enable information sharing/business processing, crop extension services, marketing, pest monitoring and management, and other needs of the local farmers and those in the processing, storage, and export stages.

First, central processing and refrigeration centers will be constructed in Kabul, and with the next ones to be potentially in located in Kandahar, Herāt, and Helmand Provinces. Each of these central processing facilities will have companion field receiving and pre-processing stations to be developed in strategically-located, outlying farming areas to facilitate moving high-value produce to the central processing facilities. Cold-chain product-handling systems using truck-mounted, refrigerated containers will improve the field-to-receiving-station handling of high-value, perishable crops during harvest.

This priority focuses on the importance of building long-term, sustainable alternatives to poppy production. In concert with the other recommendations, aggressively funding a coordinated program to restore and expand the use of high-value fruit, nut, and vegetable crops will enable and equip the individual farmer with the knowledge and materials to abandon poppy cultivation and build a sustainable, long-term livelihood.



The key objective of this recommendation is to connect and enable the private sector developing high-end, commercial hydroponic farms, as well as working through off-take agreements with regional farmers for other specific product farm production.

The priority is to provide information through the agriculture extension centers, training, and raw materials to enable farmers to make the transition from cereals and poppy production to high-value, high-profit crops for export. These include specifically, grapes, raisins, almonds, walnuts, pistachios, apricots, and possibly pomegranates, mulberries, oilseed crops, and vegetables for drying (such as peppers and tomatoes).

Instruction for Afghan farmers on all phases of farming these high-value crops, including planting, fertilizing, pruning, irrigation, harvesting, and processing; to meet the requirements of the proposed “off-take” agreements with the proposed international buyers groups. The proposed management group would work with the Afghanistan Ministry of Agriculture to determine the analysis for "best-fit crops" working with the University of Afghanistan would be important to expanded production through this proposed relationship. The technical work could include satellite surveys, soil analyses, and

improved irrigation systems to help determine the best fit crops, as well as opportunities for expanding existing vineyards.

The proposed Hydroponic Project would introduce major new agricultures technology and would provide a focus for new approaches, techniques, and information, to farmers wanting to choose to produce high-value crops for export. Other efforts by international donors in the agricultural sector have made some improvements; adopting this project approach will provide a new comprehensive approach with a clear mandate and strong leadership can build on those efforts.



VI. Ambassador Holbrooke's Model: Develop New Afghanistan Approaches for Development

Ambassador Holbrooke has emphasized a number of times, but initially on his trip in January 20th 2009 to Helmand and Kandahar, that America has a new approach in dealing with poppy growers. This is the tangible evidence that one of the most important policy shifts of the United States since⁵ his visit to Afghanistan that U.S. policy is beginning to show results with regard to the war on poppy crop eradication.

The United States and the ISAF forces are not going to go around assisting or participating in the destruction of poppy fields anymore. The United States has wasted hundreds of millions of dollars doing this. A per-hectare cost has been estimated at \$44,000 a hectare to destroy the poppy seeds. One can buy real estate for far less that in most locations.

This proposed new project approach for the Afghanistan Private-Sector / Afghanistan Government Agriculture / United States Government focus on private-sector funding with emphasis is the critical linkage going forward. This proposal fits the need for “Jump Starting” the private-sector in Afghanistan and leading with Afghanistan lead solutions.



Developing the private-sector fits the major new U.S. approach in Afghanistan; the most well-received change in American policy has been our dramatic upgrade of agriculture. This type of solution was noted by Ambassador Holbrooke when both Senators Obama and Clinton proposed things like this last year when they were campaigning. This approach would be converted into a reality on the ground.

Ambassador Holbrook has requested that new approaches and opportunities begin to be developed and that all new projects be interconnected – getting rid of crop eradication, increasing interdiction, which is what really hurts the drug kingpins, the corrupt police, and the Taliban, and finally, addressing what – after all, it’s an agricultural country, 80 percent of the people are in agriculture.

Ambassador Holbrooke’s New Approach Requirements

- Afghanistan Proposed and Lead / Joint Partnership with the United States / Major Afghan Investors Participation
- Focused and interconnected with poppy eradication through new agriculture approaches for farmers
- Fits OPIC and & Foreign Investment Criteria for Afghanistan agricultural investment

VII. Interagency Proposed Project Overview and Requirements

Overview of the Project

The proposed project would be one of the first proposed inter-agency fusion projects from the working groups, which represents a collaboration of new Afghanistan approaches required for the “Jump Start Strategy” for Afghanistan. This project, “Developing Afghanistan-Owned Solutions: Creating Jobs for Afghanistan through Private-Sector Funding,” was selected among the agriculture and agri-business projects focused on the private sector of Afghanistan.

This project is being requested by the Afghanistan Government and Afghan private-sector groups. This would be one of the first pilot projects supported by the Fusion Group, made up of the following U.S. Government Agencies: DOD, USDA, OPIC, USAID Commerce, and DOS.

The first pilot goal is to produce a world-class hydroponic farming operation in Afghanistan through a joint, development project with the Afghanistan Government, the United States Government, and the Afghan private sector. The proposed project would be funded by a single U.S. Government agency or multiple foreign government agencies, so that up to 70% comes from a government investment commitment and 30% from private-sector Afghanistan investors, as the lead investors, as well as minor investment roles for multi-national investors. Additional types of funding may be identified through the business plan development process if deemed needed for the project.

Afghanistan Government

The Afghan Ambassador on behalf of the Government has formally requested that the pilot project be developed for “Developing Afghanistan Owned Solutions: “Through Creating Jobs for Afghanistan through Private Sector Funding” and be started as soon as possible. The Afghanistan Government will contribute full-time staff from the following Afghanistan government agencies to begin to learn the process and project requirements to meet the investments needs of the private-sector, the financial institutions, and foreign governments involved. This project is the first of many potential proposed agriculture / agribusiness opportunities that currently exist. The Afghanistan Government would be also participating by creating co-creating this initial pilot program with the United States Government through the offices of DOD and USAID.

The Afghan Ambassador is requesting that a quick response team be organized and developed to eternally build the internal Afghanistan governments capacity to develop commercial business plans and associated funding applications for private sector projects focused on private-sector job creation for funding requesting foreign investment participation.

Afghanistan commitment would be to provide one staff member from the following organizations: Ministry of Agriculture, Ministry of Investment, Ministry of Commerce, and one or two from the University of Afghanistan Business and Agricultural areas. The goal is to develop this internal capacity within Afghanistan. The U.S. advisory role would be to provide technical assistance and to assist in the development of the projects and the internal development of this type of specialized capacity and help assist in internal capacity within

the Afghan government. Through a series of successful private-sector agriculture and agri-business investments and joint “heavy lifting” real investment experience the internal capacity will be built. The goal is to build an internal review and building process so that this can be duplicated this process for multiple Afghanistan private-sector investment projects.

**DOD/USDA
Engagement
&
Requirements**

The proposed project would be supported by the Department of Defense (DOD) Task Force for Business and Stability Operations for Afghanistan and the United States Department of Agriculture (USDA).

USDA Kabul Embassy Office would be requested to provide office space and housing for two Senior Professionals who have been identified to work on the selected hydroponic project. These professional would be part of the new civilian work force and they would be schedule B / 3161 advisors to USDA / DOD. These professional advisors will not require nor expect any type of major Senior USDA personnel assistance or guidance in Afghanistan. The selected professionals have combined significant successful Afghanistan and Iraq agriculture / agri-business experience and have worked for and with the United States Military, USDA, USAID, and DOS. They are familiar with United States embassy policies, procedures, as well the process for RSO and military travel requirements, and travel coordination within Afghanistan.

These professionals would report weekly on the project progress, to DOD and USDA Senior personnel. They will work independently on the proposed project with their Afghanistan counter-parts. They would need to be housed in two locations at different times one in U.S. Kabul offices and at Bagram Air Force Base, which would be the secondary hub of the on-the ground activities associated with the project. These professionals would work directly with their Afghanistan counter-parts that will be assigned by the Afghanistan Government to expedite the proposed project.

The specific additional resources would require up to access up to 2 translators during the project duration, as well as access to working offices in both locations, as well as access to office telephones, cell phones, 2 computers and printer and internet assesses with regard to office needs. Additional approval for project resources would be approved by DOD and USD. Washington D.C.

These professionals have worked in a variety of agricultural settings directly in the field, in Afghanistan and Iraq and significant on the ground experience have traveled in red zones/ green zones as well as with PRT teams, military teams and private security teams.

Their scope of experience includes working in tribal areas, in both military escorted as well as private security escorted trips. They have worked directly with farmers associated with extension centers, associations, cooperatives, and unions. Their experience includes working in Samangan Province, as well in the northern region of Maza-e-sherif, Kandahar, Ghorband Valley, (valley, Samangan, Sulang pass, Tangi Toshgorgan, Toshgorgan, Mazar, Bhalk Province, and Badakshan / Fiasabad Provinces. They have background experience in best practices in agriculture including extensive experience in hydroponics.

Their experience includes a number of agricultural products and their production and as well as export. These include such as almond growing and processing, tree pruning, multiple fertilizer programs, inter-cropping, honey processing, walnut production, raisin production, Grapes, Wheat, Cattle, Alfalfa, Tomatoes, Carrots, Melons, and Squash within Afghanistan. They will be available if requested to assist USDA in agriculture programs in a variety of settings. They would be available to participate in all requested DOD; USDA program activities as needed.

**OPIC
Engagement**

OPIC will provide up-front investment criteria and due diligence requirements that will be required, assigning a Senior Staff member to provide reviews and input on the commercial Business Plan and financial plan to meet international standards of quality. OPIC would follow their normal internal process for assessing and approving the project based on OPIC guidelines. The range of the potential investment from OPIC could go as high of 70% of the total investment package of up to \$20M.

**USAID
Engagement**

One of the secondary benefits of the pilot project is the ability to also export secondary non-hydroponic agricultural produce. This project would continue to build on the current outreach by USAID and USDA to Afghanistan farmers and will provide another means in the pilot program to have selected regions to have their produce exported through the proposed processing center. In the Kabul region, both USAID and USDA would help assist in supporting the coordinating of indirect job creation for pre-identified farmers to support the agricultural for products selected for the center that would be a part of the off-take agreements entered into with the proposed foreign buyers.

**Proposed
Managing
Partner**

A professional managing group has been identified that has the required experience and can meet the requirement of having over 20 years of professional experience, as well as having the commercial relationships with the international buyers to be able to generate commercial off-take agreements with the proposed buyers. Mirak has a track record for building the type of hydroponic commercial farms that are being proposed for the country of Afghanistan. Mirak Agricultural Services was established in 1985, and now is the largest Hydroponic commercial farming operation in the World. Mirak is the proposed Managing Partner, and would be developing the same system as they have developed in Dubai, of more than 200 hectares of farms across the UAE. Mirak has the largest open-field hydroponic growing system in one of the most difficult growing environments in the world. The process would be 100% UAE designed, manufactured, and operated to suit the local environment in Afghanistan.

**Proposed
Afghanistan
Private
Sector
Investors**

An initial investor meeting with potential Afghanistan investors was held in September 2009, to determine interest levels and potential engagement of private-sector investors. There was significant interest from the investors for developing this type of program for Afghanistan, with completed business plans and investment engagement processed. All investment terms and conditions would be part of the business plan and commercial finance plan.

**Proposed
Kabul
Commercial
Farm Size**



The first proposed commercial farm is to be located on the U.S. government site, located at the Bagram Military Base. The estimated size of the first commercial farm is between 40 to 60 hectares at an estimated cost of \$15,000,000 to \$20,000,000 projected cost depending on a number of variables that would be sorted out during the Business Plan Process. The goal is to build a “World Class” Afghanistan demonstration farm system in a secured environment with oversight from the one of the major customer the United Government which would be purchasing some portion of the agricultural agreement as well as having in place off-take agreements for the balance.

**Employment
Generation**

The direct employment would create an estimated 200 to 450 Afghanistan National jobs and about 1000 to 3000 indirect Afghanistan farmers that would participate in the sale of the products that would then be processed, sorted, and packaged for selected international buyers. This represents a significant buyer contract up-take opportunity and utilization of the facilities to generate significant export buyer opportunities and revenues.

**Project
Outcomes**

The proposed outcomes would have a completed Business Plan, Financial Plan, Project Due Diligence documents, and completed financial applications. This process is expected to be completed within four to six months. A completed investor agreement would be expected to be completed within 90 days of the Business and Financial Plan. As well as any United States inter-agency agreements that may be identified during the process.

The Government of Afghanistan would provide completed land agreements, business licenses, and any other governmental agreements not yet identified would be expected to be completed. Specific outcomes are listed below:

- Commercial Business Plan that includes all aspects of the financial requirements, approvals from the Afghanistan Government completed. As well as all financial requirements to be met by OPIC, and other potential foreign investors.
- Private-sector investment agreement, and application to OPIC and or other selected financial institutions as needed. Agreement among all Afghanistan and private-sector investors.
- Managing Partner agreements would be signed and agreed to by all parties. Implementation requirements and projected start dates to begin the construction process once financing agreement has been signed and approved.

Appendix 1

Consortium: Advisory Group

Robert Mosbacher Jr., Former President and CEO, Overseas Private Investment Corp., Managing Principal

Robert Mosbacher Jr. is the former President and CEO of the Overseas Private Investment Corp. (OPIC). He held this position from 2005 to early 2009, overseeing OPIC's efforts to support private capital investment in emerging markets around the world. From 1986 to 2005, he was president and CEO of the Houston-based Mosbacher Energy Company, an independent oil and gas exploration and production company. He was also vice chairman of Mosbacher Power Group, an independent electric power developer, which was launched in 1995 and sold in 2003. He is founder and former co-chairman of Rebuilding Together Houston (formerly PSI HomeSavers), which organizes volunteers to repair homes for low-income elderly or disabled Houstonians. Earlier in his career, he was appointed by President Reagan to three successive Presidential Task Forces on Private Sector Initiatives. Mosbacher received a bachelor's degree from Georgetown University and a law degree from Southern Methodist University.

Don Welty, Advisor for the United States Military, and the British Government Stabilization Unit for developing countries. Current advisor to British Government Stabilization for Iraq & Afghanistan Program

Don Welty's 25-year career in business and government has included private equity and venture and developmental capital fund management, business advisory and loan workout, triple-bottom line investment and for the last six years he has supported on-the-ground business development among agriculture and agri-businesses and SMEs in 18 African and Middle East countries focused on project funding opportunities. He has been an advisor for the United State Department of Defense, the U.S. Army, and Marines for PRT teams and has advised on multiple development programs for Afghanistan and Iraq. He has had direct experience in Iraq. He has held a variety senior management and business development positions with a focus on project management and execution, investing senior debt, subordinated debt and equity in small and medium sized enterprises, and deploying and leveraging U.S. Government foreign aid with various international donor agency funds to support job creation and economic development. Welty has a BS degree in Business Finance from Brigham Young University and an MA degree in Management from Westminster College. He has been Adjunct Professor in International Business Development at Brigham Young University and the University of Tennessee.

Ing. Jorge A. Alvarado, Afghanistan First Farming, Afghanistan

Jorge Alvarado recently returned from Iraq where he worked for Aglands Investment group (Inma project) to develop and promote Iraqi pomegranates and Iraqi dates to world market via Dubai. He worked “hands on” in the field with farmers in Afghanistan and Iraq by establishing regional grower owned associations to better understand and develop marketing strategies throughout Afghanistan and Iraq increasing grower profits and increasing quality standards needed to meet food security requirements for world markets. Jorge has managed two of the most successful major agriculture projects in Afghanistan as a Marketing Specialist, for KOP, developing markets and introducing high quality Pomegranates into Dubai, Middle East, Europe and Canadian markets from Afghanistan. Worked as a production specialist for ROP Almond project to increase field production and introduce modern processing techniques directly enhancing farmers livelihoods. Jorge evaluated and made recommendations for field production, pre and post harvest field handling of products and improved processing and packaging techniques to develop a “secure” high-end marketable product to meet world market requirements. Jorge received a bachelor’s degree from California State University – Chico, Ag.Ed.Hort.

Edwin C. Price, Associate Vice Chancellor, Texas A&M University and Director, Norman Borlaug Institute for International Agriculture.

Dr. Ed Price helps guide agricultural research, teaching and extension conducted within the nine universities and four agricultural state agencies of the Texas A&M University System. He directs staff on grants and contracts in 40 countries with a value of over \$50 million. He serves as federal liaison for specially appropriated funds for Texas agricultural research. He supervises 3 MA and PhD students, agricultural study abroad, exchange and internship programs serving over 675 agriculture students in the past five years as well as a newly instituted Peace Corps Masters International program. He has authored over 120 articles on the economics of farming systems, and a Methodology for Cropping Systems Research. He drafted and gained passage of the US law “Famine Prevention and Freedom from Hunger Improvement Act of 2000,” to improve partnership between U.S. Land Grant Universities, the US Department of Agriculture, the U.S. Agency for International Development, and the International Agricultural Research Centers. He has served as economist for Federal Reserve System US Board of Governors for agricultural price, production and policy analysis. For 10 years, he conducted cropping systems economics research at International Rice Research Institute. He has had numerous agricultural consultancies in other countries including El Salvador, Guatemala, Panama, Bolivia, Mexico, Iraq, Afghanistan, Armenia, Indonesia, and Turkmenistan. BS. University of Florida (Agricultural Science), an MA. Yale University (Southeast Asia Studies - Economics and Indonesian Language) and a PhD. University of Kentucky, 1973 (Agricultural Economics).

Charles H. Allison, Jr., Senior Fund Advisor to Biodiesel Interstate Corporation

Charles Allison is the Founder and Managing Principal of Vision Consulting Associates LLC. He has more than twenty years of direct private market and foundation investment experience, working in the renewable energy and investment banking sectors, advising companies and governmental organizations on executing innovative and growth oriented strategic initiatives and business plans and delivering global business solutions. His core skills include evaluating private capital investment and project risks across a broad platform of industries including agriculture, renewable energy and infrastructure development, consumer products, manufacturing, services, telecommunications and technology. He has been engaged on a project basis to evaluate various operating and financial problems, to solve problems and to build cutting edge businesses in high risk environments. He has exceptional written, oral communication and interpersonal skills, is a team player and team builder having led major energy and financial projects and is an experienced entrepreneur, business analyzer, risk evaluator, negotiator and strategist. He earned his A.B. degree in Geography, with a focus on agricultural land use and agribusiness), and Environmental Studies. He graduated from Harvard Business School with a concentration in Finance and General Management. He is a Visiting Senior Lecturer of Management and Sustainability at The Johnson School at Cornell University.

Elaine M. Sarao, Executive Director and Co-Founder of Foreign Aid Through Education, Associate Rector for Wisconsin International Ukraine University, and from 2000 to 2007, Congressman Major R. Owens' Fellow for Foreign Affairs.

Ms. Sarao contributes more than 15 years of analysis and strategic planning experience in foreign aid and foreign affairs. In 1993 she co-founded FATE to liaise multi- and bi-laterally funded economic-development programs for crisis and developing countries. She has advised Haiti, Croatia, Ghana, and Georgia and has created consortia of U.S. higher education institutions to deliver public/private programs.

In 2000 when Congressman Owens asked Ms. Sarao to serve as his Fellow, she immediately commenced work on Pakistan and accompanied Congressman Owens to Pakistan and Azad-Kashmir. She subsequently made trips to Pakistan over six years to represent the Congressman to senior Pakistani Government officials, including former President Musharraf. Ms. Sarao provided numerous briefings to the Congressman between 2001 and August 2006 on the nexus of the fomenting instability in Pakistan and the growing danger to the U.S. Before the Congressman retired, Ms. Sarao strategized the return of the Peace Corps to Rwanda.

In Ukraine, as Associate Rector of WIUU, she advised President Yushchenko, through his senior advisor Borys Bepalyi, about the U.S. Millennium Challenge Account. President Yuschenko asked for the MCA and Ukraine was named. She has lectured at CASS in Beijing, China, to engineering professionals.

Currently Ms. Sarao has advised PakPAC, a lead Pakistani Diaspora organization, on their response to the USG's call for the engagement of Diaspora NGO's in Pakistan.

Ms. Sarao's Master's degree is in Communications from Syracuse University and her undergraduate from Parsons and The New School in New York City.

Appendix 2

NATO/ISAF Contributing Nations

As of October 1, 2009; http://www.nato.indisaf/docu/epub/pdf/isaf_placemat.pdf (Table 18)

NATO Countries		Non-NATO Partner Nations	
Belgium	510	Albania	250
Bulgaria	460	Austria	4
Canada	2830	Australia	1200
Czech Republic	340	Azerbaijan	90
Denmark	700	Bosnia-Herzegovina	2
Estonia	N/A	Croatia	290
France	3070	Finland	130
Germany	4245	Georgia	N/A
Greece	125	Ireland	7
Hungary	310	Macedonia	185
Iceland	8	New Zealand	220
Italy	2795	Sweden	430
Latvia	165	Ukraine	10
Lithuania	250	Jordan	7
Luxemburg	8	Singapore	2
Netherlands	2160	United Arab Emirates	25
Norway	600		
Poland	2025		
Portugal	NA		
Romania	990		
Slovakia	240		
Slovenia	80		
Spain	1000		
Turkey	820		
United	9000		
United States (See Note)	31855		

Note: With full extent of U.S. buildup, U.S. figure in this table likely close to 52,000, and likely total ISAF figure is closer to 88,000.

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Contact document author for details

Endnotes

¹ A number of Defense & Technology Papers have been developed in regard to agriculture in Afghanistan. The most recent is “Winning the Invisible War: An Agricultural Pilot Plan for Afghanistan” by Edward Borchardt, Austin Carson, Frank Kennefick, James Moseley, William Taylor, Harlan Ullman, and Larry Wentz.

Defense & Technology Papers are published by the National Defense University Center for Technology and National Security Policy (CTNSP), Fort Lesley J. McNair, Washington, DC.

² “Winning the Invisible War: An Agricultural Pilot Plan for Afghanistan” by Edward Borchardt, Austin Carson, Frank Kennefick, James Moseley, William Taylor, Harlan Ullman, and Larry Wentz.

³ “Winning the Invisible War: An Agricultural Pilot Plan for Afghanistan” by Edward Borchardt, Austin Carson, Frank Kennefick, James Moseley, William Taylor, Harlan Ullman, and Larry Wentz.

⁴ Water Challenges.

⁵ Ambassador Richard Holbrooke's Briefing on Trip to Pakistan, Afghanistan, and Brussels, July 2009.