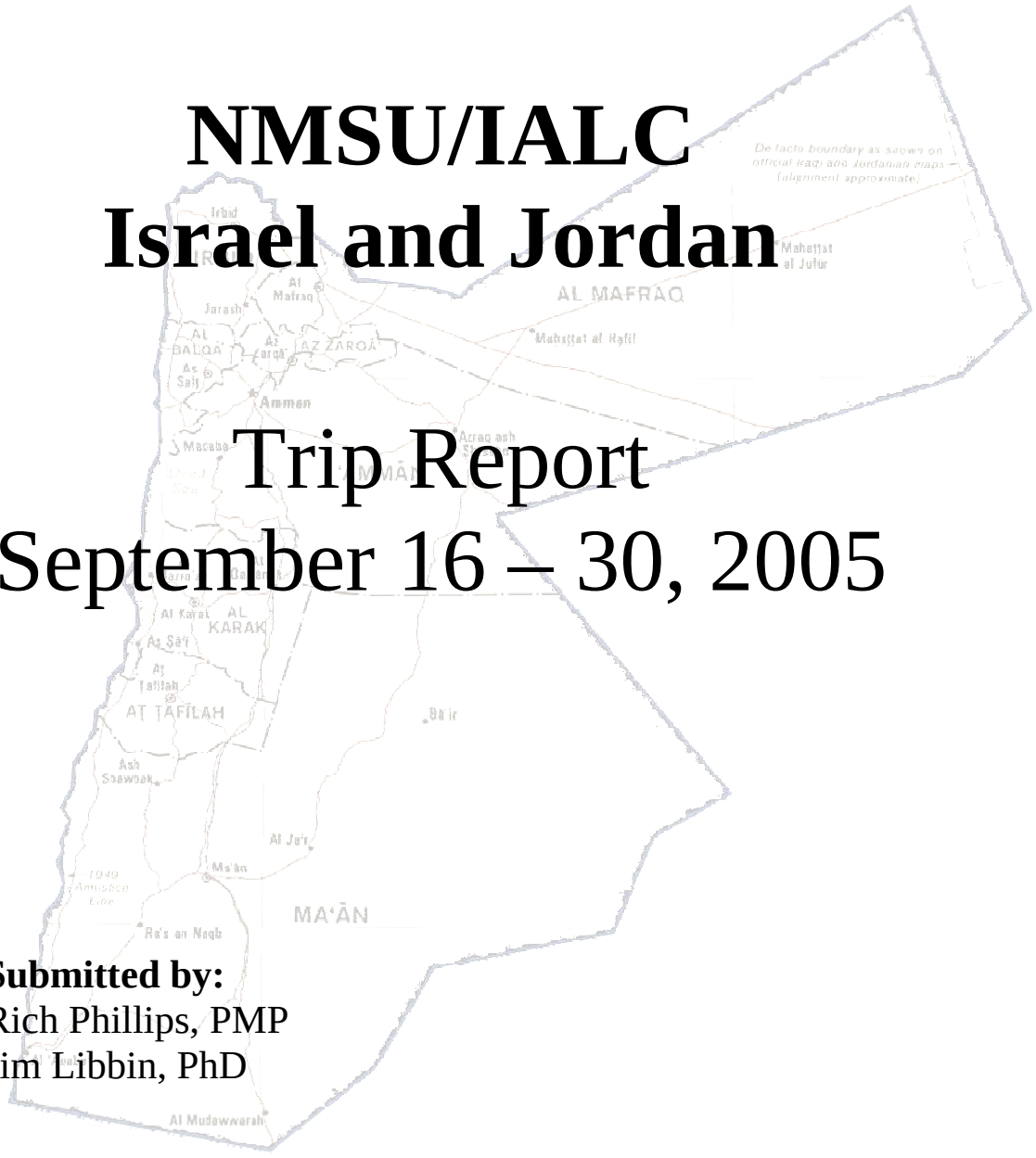
New Mexico State University
Badia Research and Development Centre

NMSU/IALC
Israel and Jordan

Trip Report
September 16 – 30, 2005



Submitted by:
Rich Phillips, PMP
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Trip Report

Rich Phillips and Jim Libbin
September 16 through 30, 2005

I. **Friday and Saturday, September 16 and 17**. Rich Phillips and Jim Libbin left Las Cruces Friday morning, September 16, for the flight to Tel Aviv via Houston and Amsterdam (Appendix A). We used the time during a 12-hour layover in Amsterdam to visit a Las Cruces friend who is working for NATO at The Hague. We took a train from Schilpol Airport into Leiden, where we walked the downtown market area and observed the flower, cheese, fish, meat, and vegetable stands as well as a grocery supermarket. We arrived at our Tel Aviv hotel after a taxi ride from the airport at 2:30am Sunday morning, September 18.

II. **Sunday, September 18.** Our only Sunday activity was a meeting with Mike Martin, of the USAID West Bank-Gaza Mission's Private Enterprise Office, at his home north of Tel Aviv. We discussed the NMSU team's interests, capabilities and purpose for visiting Israel, Jordan and the West Bank. Mike mentioned several possible areas of interest in Gaza and the West Bank. Our role as participants in a Cooperative Agreement rather than direct USAID contractors gives us additional freedom to participate in projects on the West Bank. Mike specifically mentioned an assessment project of West Bank agricultural universities and extension capabilities that would be helpful to the USAID WB-G mission. We are not sure of the scope of this assessment project or the time frame. Mike was not specific, but invited us to meet him in Jerusalem on Thursday, September 29 to further discuss possibilities for cooperation.

We did some sightseeing Sunday afternoon (including a swim in the Mediterranean just a block from our hotel) and evening and ate dinner in Jaffa (about a 45-minute walk south of our hotel), right on the shoreline. On Monday morning, we hired a driver to take us to Tiberias, by way of Nazareth and Cana, arriving at our hotel about 3pm.

III. **Monday, September 19**. The International Arid Lands Consortium group reached the Tiberias hotel about 5pm and the Technical Advisory Committee (TAC) meeting (agenda attached as Appendix B) started at 6pm and continued after dinner. We reported on the history and process of the Yemen project, from beginning to end (see Appendix C). We responded to questions and with Bob Freitas' assistance tried to explain why we could not continue with the Yemen-USAID Cooperative Agreement. Although there was a substantial amount of discussion concerning USAID interaction, there was no criticism of our project. We were encouraged by TAC to seek a new cooperative agreement in Jordan and/or the West Bank-Gaza. Our segment is included in the budget proposal to be submitted to the IALC Board of Directors (Appendix D). From Tiberias, on the western shore of the Sea of Galilee, we could see the Golan Heights and were close to Capernaum (site of the Sermon on the Mount) and the Jordan River.

IV. **Tuesday, September 20**. We left our Tiberias hotel early Tuesday morning for a bus trip to visit an agro-eco-tourism development in a former lake/swamp area near Quiryat Shemona in northern Israel. The area was drained in the 1950s and then allowed to refill partially later. Farmers rent land from the Israeli government on 3- to 49-year leases to grow a variety of fruit, tree, and agronomic crops including peanuts, sunflowers, corn,

and alfalfa. Lease rates are set nationally on areas that were originally purchased in the 1930s and 1940s by the Jewish National Fund (an IALC member organization) to re-establish Israel.

We rode a tram to the top of Minacca Cliffs and looked out over the Hula Valley and were able to see southeastern Syria and southwestern Lebanon. During the tram ride, we were able to see a larger reforested area. Pine trees were planted to stabilize mountain slopes. Currently, the area is a mixed conifer-hardwood forest, with pines, cedar, and native oak species that regenerated under the planted cover. Drip-irrigated apples and dryland olives were grown on a kibbutz at higher elevations above the Hula Valley.

After lunch at an Arabic restaurant, the bus stopped at a new reforestation area where each of us was given a tree to plant and a certificate that we had planted our tree in Israel. Normally, Keren Kayemeth LeIsrael - JNF charges a fee for this activity. Later, we drove to the Jordan River Border Crossing between Israel and Jordan and then on to Amman by way of Irbid, arriving about 8:30pm.

V. **Wednesday, September 21**. Our first function on Wednesday was a presentation by the Secretary General of the Higher Council for Science and Technology near the University of Jordan campus in Amman. HCST is a public-private enterprise concentrating on application of frontier technology to enhance the socio-economic development of Jordan. It hopes to promote research and development based regional development. The director talked about a major paradigm shift in the Council's thinking away from programs for the poor, toward programs that would promote entrepreneurs who in turn would generate jobs and income. There is also a Council for Higher Education that is concerned with education policy and basic research. HCST applies technology and research. HCST's board of directors is composed of eight ministers (including those of agriculture, water and irrigation, trade, and finance). 5.5 million people live in Jordan. 80% of the country is arid or semi-arid. There are 21 universities in Jordan now, but 30 are expected soon. The Badia Research and Development Center (BRDC) is an arm of the HCST and is a member of the IALC Board of Directors. The secretary general mentioned a new business incubator section, and a new agro-business incubator that was recently started. He also mentioned a National Fund for Enterprise Support that can be used to support and finance business expansion and development. HCST has a contractual relationship with Sandia National Labs, especially in the areas of water management and nanotechnology.

While the IALC board members met with the Royal Scientific Society, Rich and Jim met with a food technologist at the University of Jordan – Dr. Malik Hadadin. Malik described his work with new product development, especially using camels for various products including cheese. Camel cheese is still an experimental product, but it seems to have good shelf-life properties. He also works with sheep cheeses, but camels flourish in the Badia, are drought resistant and produce 30 liters of milk per day. There are strong human benefits to camel milk – the milk has a defense mechanism against lysteria, salmonella, and E coli. It is also rich in vitamin C. It is a non-allergenic milk source for lactose-intolerant people. Its meat quality is good, as it has a total fat content less than 1% and is low in cholesterol. Camel droppings are 2.5% moisture, so they can be used as a heat source. Camel fibers can also be used for coats and blankets. In 1921, Jordan had 250,000 camels, but today has only 7,000. Camels eat dead plants, making them an ideal

animal for arid rangelands. The gestation period for camels is 12 months. Malik is also working on extraction of essential oils from seeds to identify active ingredients, on olive oil products, and on honey products. Olive oil contains polyphenolic compounds, an antioxidant not present in vegetable oils. He is trying to develop a new bee product with anti-viral, antibiotic, and anti-oxidant properties.

After lunch, we met with Omar Hamarneh, the director of the information technology iPark business incubator (a part of HCST). They now have 17 companies they are working with in the incubator to commercialize technology. Their primary emphasis is on finance, networking, administration (management and accounting), and legal aspects of developing new businesses in Jordan. Their most difficult challenge is to get entrepreneurs, especially technologically oriented individuals, to develop business plans. They accept and evaluate applicants on the basis of business plan development and provide access to senior consultants to write the business plan. They incubate businesses for about two years, forcing companies to either graduate or quit at the end of the two-year period. If a company can't succeed in two years in the information technology area, it probably never will. iPark offers no scheduled short courses, but does provide some training along the way. Part of the funding for iPark comes from rent paid by the incubating company. They do not take an equity position in the new company being assisted.

We ended the afternoon with a quick tour of the Jordan River valley. Akrum arranged for a driver to take us on a 40 km section of the river road, Highway 65, from Muthallath Aridah to Al Kafrayn. The farming was intensive, mostly transplanted vegetables and citrus and banana plantations. The technology included extensive hothouses for off-season vegetable production, greenhouses for transplant production, plastic ground mulches, floating mulches, and drip irrigation. This short visit did not give us time to fully understand the production practices or challenges, but it gave us a reference point.

A joint dinner was hosted by BRDC Wednesday evening.

VI. **Thursday, September 22**. Thursday morning's bus ride took us 3 hours south of Amman to Wadi Mousa (Moses Valley), toward the archaeological sites at Petra and the IALC-University of Arizona wastewater reuse demonstration site. Along the way we saw phosphate mines, dryland prepared for planting wheat and barley in mid-November, and sheep and goat herds grazing on severely overgrazed rangeland. The Thursday afternoon tour to the IALC cooperative project showed us the use of reclaimed water from the community wastewater treatment facility. The farms in this project were all drip-irrigated using the waste effluent of a community-sized wastewater treatment plant. The farmers' cooperative divided the irrigated land among a group of farmers to produce alfalfa, fruit trees, barley and wheat. One entrepreneur is producing native tree seedlings for fruit trees and native landscaping trees. As we talked to the farmer and the University of Arizona project director there was clear concern that the producer would likely be forced out of business within a year due to lack of sales. Clearly this is a common, recurring problem everywhere in agriculture. Production without marketing is a prescription for disaster in the Unites States or in Jordan.

Late Thursday evening, we held a discussion of the West Bank and potential for joint projects among Israeli, Jordanian participants as well as U.S. members of IALC. The group included Bob Freitas (IALC), Mohammad Shabahz (BRDC), Saad Alayyash (BRDC), Gill Atsmon (KKL), Omri Bonneh (KKL), Joe Hess (JNF), Akrum Tamimi (University of Arizona), Rich and Jim. The purpose of the meeting was to explore topics that could involve multiple institutions through the IALC (mainly trying to link Israeli, Jordanian, and West Bank institutions). The Sustainable Development of Drylands project is the likely umbrella. We discussed such topics as water, grazing, agriculture (meaning crop production), and irrigation. Could jointly sponsored workshops be held in Israel or Jordan? The answer likely depends on how the Palestinian Authority (PA) is approached and involved. Mohammad was most interested in capacity building for the nucleus of a new state, divided into three segments: 1. human resources, 2. framework (legal, specifications, and standards), and 3. direct and indirect activities related to economic development. Any activity would need to address focused, medium term (3 to 6 month) training, such as Extension, technology transfer and demonstration rather than basic research. Income generation is critical. Joe proposed a planning meeting. Bob suggested using a watershed approach to organize thoughts – sustainability, reforestation, or forestation and proposed a strategic planning developmental workshop for the sustainable development of one trans-boundary watershed or basin. Such an approach could involve technical people and decision makers. The watershed concept involves land use planning, economics, anthropology, archaeology, and water recharging. IALC is willing to put in $15,000 as a starter fund to develop this workshop plus another $15,000 to hold the workshop. Bob proposed that NMSU chair a small conference planning group to organize a strategic planning workshop that would include Gill Atsmon (representing Israel), Saad Alayyash (Jordan), and Akrum Tamimi (PA). Not only technical, but institutional barriers must also be identified and addressed in this type of workshop/planning session. The initial thought was to hold this planning session in the latter half of January. There might be USAID (or even European or Japanese, or World Bank) monies to fund the project developed from the strategic planning workshop. A critical task of the planning group will be to select the appropriate people to invite.

VII. **Friday, September 23**. We spent the entire morning touring the Petra Archaeological Park, a city built for 30,000 people between 200 BC and 200 AD on the crossroads of two major trading routes. The entire city was intricately carved out of the sandstone cliffs by the Nabatheans, who were reputed to be descended from Abraham through Ismael. The Nabatheans were master water harvesters and built an awesome series of check dams, water storage pits, stone water canals, and even a tunnel to divert flood water away from the main entrance to Petra.

After lunch in a carved cave which was said to once have been used as a Christian church in the Byzantine era, Akrum accompanied us back to Amman via the King's Road north from Petra / Wadi Mousa. Along the way we saw perhaps the worst example of overgrazing I have ever seen, rivaled only by the Navajo nation. Like the Navajo lands, Jordanian grazing lands are not fenced and not leased. Vast acreages of drylands were tilled (by chisel although I did see a few small one-way (4-disk) disks and even a couple of single moldboard plows. There appears to be no opportunity cost for producing wheat and barley on these lands, despite the 165-225mm annual rainfall amounts that must translate to poor yields. Most of the land was tilled with Massey Ferguson tractors (in addition to other U.S. and European makes, including Ford) in the 35- to 75-horsepower range. We also saw many relatively small (<100 trees) olive orchards that have all been planted within the last 10 years or so. Although they might water newly established olives (and we did see one fairly large olive orchard (500 trees)), olives are generally not irrigated. Akrum says the drier the climate, the better the oil. Olives were introduced in Jordan as an alternative cash crop. Because it was Friday afternoon, and before the beginning of the harvest season, we saw no open olive presses to visit. We further saw tomatoes, grapes on drip irrigation near a dam (which appeared to be approximately the size of Caballo Lake).

VIII. **Saturday, September 24**. After spending the night at the Grand Hyatt Amman once again, we left early for a trip to the Badia and the BRDC projects northeast of Amman. We first stopped to pick up Malik and then traveled north to Mafraq to pick up Saad and the BDRC veterinarian. From Mafraq, we traveled east to Salem Safah Al-Oun's home near Sabha. Salem is an assistant professor in marketing at Al Al-Bayt University in Mafraq, a farmer, and a former BRDC director for the Badia projects. He offered coffee and then camel's milk. We began to walk toward his farm and livestock pens behind his house, but stopped for coffee in the traditional Bedouin style in a Bedouin tent that is used daily by Salem Al-Oun's extended family. We talked a great deal about the problems and issues of irrigated in the Badia. Salem's family maintains 11 camels, a large sheep flock and goat herd, and about six Holstein-type milking cows. We stopped at one of his tomato fields currently being harvested and packed for international sales in wooden boxes (primarily for export to the east to the Gulf States and south to Saudi Arabia) and local fresh market sales in plastic crates similar to a U.S. plastic 4-gallon milk crate. They were also producing cabbage, watermelons, and cucumbers under black plastic plus tube irrigation. Tomato hand harvesters are primarily women who used to manage sheep. Now they are collected locally every morning (working 8am to 2pm for 3.5 JD per labor hour) to harvest (1 JD = $1.40 US). Many are Syrians living in Bedouin tents. Cash rental rates for land are 15 JD for vegetables per dunnum or 5 JD for non-irrigated barley to use the fertilizer residual. A dunnum is 1/10 of a hectare and is the common unit of land measurement in Jordan. Salem's well is 400 m deep and pumps 60

m^3 per hour. Salem hires a greenhouse owner to grow seedlings in the Jordan Valley. The tomato producer buys seed, hires a seedling grower to grow transplants, and then takes the seedlings home to transplant into black plastic covered beds irrigated with plastic tubes using holes for emitters.

Tomato growers use brokers / middlemen to sell domestic market fresh produce beyond the immediate local (village / farmers market) area. They attempt to sell any late tomatoes or the portion of the crop that they could not sell on the fresh market to a local tomato processor. After leaving the tomato field, we visited the tomato processor, Shafa Food Industries Company. There were several problems between tomato growers and the processor; contractual difficulties really boiled down to a lack of trust on both sides. Farmers did not want to plant only the seed variety the processor wanted. Farmers wanted to plant to hit the fresh market and sell leftovers to the processing plant. After all, that was what the plant was built for. But, the processing plant needs more a steadier volume, and a different variety. However, they are not willing to pay more to attract that volume. 42 JD per ton for raw processing tomatoes is a normal price, but prices have been as high as 50 JD. There is great distrust on grading (we need a USDA / NMDA grader and Vince Hernandez, David Layton, or James Ditmore to travel with us next time to help figure out how to solve some of these issues) and on payment.

After lunch, we stopped back at Salem's farm and saw grapes and olives growing. Our second stop of the day was a 110-member Farmer's Cooperative, A'naqueed Al-Khair, built, supervised, and being lead by the BDRC. This was a tremendous stop to see a cooperative organized by the local community with the BDRC. They have a small sheep flock and goat herd, three hoop houses, a Sandia-style hydroponic feed production unit, veterinary services clinic, and a weaving building. They were growing thyme and tomatoes and were drying tomatoes. But there was no thought given to marketing anything. There are many opportunities to work with this facility to develop business plans and marketing channel analyses. Products produced without a market cannot be called value-added products. Honey jars showed included different sizes of jars and different colors of honey. Some details mentioned regarding economic issues:

75-90 JD per ton barley – feed cost to the sheep
35-42 JD per ton unseparated grain and straw
3 JD per head per month operating costs (feed, water, veterinary needs)
25-30 kg milk per head per year (sheep)
0.4 JD per kg for milk in 2005
2 JD per head per year in wool
50% lamb crop
Cull ewes at 6 years (primarily due to teeth problems)
90-100 JD fro a pregnant ewe
110-120 JD for a pair
85-90 JD for a cull ewe
55-60 JD for a lamb
2 JD per kg for dried tomatoes
200 JD per dunnum to buy some of this land, without a well.

Feed costs are partially subsidized, but the government is trying to gradually eliminate the subsidy. There is some seasonal price structure, especially right before Ramadan.

However, a sacrificial lamb must be >6 months old. So there is a slight price bump about 6 months before the beginning of Ramadan, which is a moving, but predictable target.

IX. **Sunday, September 25**. We spent Saturday night at BRDC's Al Safawi research station headquarters well east of all of the BRDC research and demonstration sites. We spent the bulk of Sunday morning in the computer lab catching up on email (including a first report to Octavio) and reading BRDC reports in the library.

Report 49. Economic and policy trends affecting the production and marketing systems for small ruminants in the northeast Badia, Jordan, Roger Oakeley, 1997.
Report 58. Bedouin livestock management and socio-economics in the JBRDP area, Alan Rowe, 1998.
Report 61. Inputs into the Badia livestock production system, Alan Rowe, 1996.
Report 62. Preliminary survey of livestock owners, Darius Campbell, 1995.
Report 59. The use of supplementary animal feed, Roger Oakeley, 1996.
Report 115. Bedu community participation in creating sustainable futures: a case study of A'naqueed Al-Khair Sustainable Development Project, northeastern badiyah, Jordan, Issaaf Hawamdeh, 2003.

After asking Saad for copies of six reports, we left to see the three remaining BRDC research stations; the first was an excellent rangeland rehabilitation project. They marked off boundaries on a large 100-dunnum grazing area with the assistance of a local community / cooperative group. They constructed contour ditches to harvest rainwater. A dramatic increase in range productivity has been developed here, and it has the support of the grazing community. A simple rock fence, about a foot high, is all that separates this grazing regeneration demonstration from a heavily overgrazed landscape. But the villagers agreed to not use the regeneration area until BRDC said it was ready. This project is begging for an economic analysis. Close to the rangeland project was a sheep dairy processing plant. Because it now out of season for sheep milking, the facility was not manned. We saw a modern small scale processing plant with a cooler full of cheese packed in two-kilo cans. No market had been identified for the cheese.

After the BRDC demonstration site visits, we stopped at Al Al-Bayt University to visit Salem Al-Oun and his Department Head, Adnan Abu Alhaija. We discussed cooperation between NMSU and Al Al-Bayt University, including the potential for assistantships for graduate students at Al Al-Bayt. We also met Dadhir Al-Ansari, Dean of the Institute of Earth and Environmental Sciences, who wished to pursue the conversion of a former agricultural high school into an Extension office.

Our last visit of the day before returning to Amman was a visit to the College of Engineering at Jordan University of Science and Technology (JUST) in Irbid. We met with four individuals working on a cooperative project with BRDC to study wastewater reuse. They are irrigating pistachios, ornamental trees, olives, figs, carob, almonds, and pomegranates (9 species in total), as well as alfalfa, vetch, and barley. They are irrigating with fresh, with reclaimed, and with fresh/reclaimed replications using trickle and floppy sprinklers (a relatively recent South African design). They have 550 dunnums in trees, including 180 dunnums of cactus (prickly pear) with 120 more under development. This project is a sister project to the one underway in Wadi Mousa and the one underway in Aquaba. They use chlorinated, two-stage disinfected, campus wastewater plus some

wastewater from a community nearby (Wadi Hassan). One of the gentlemen who met with us is an extension professor for the Faculty of Agriculture, Laith. Major questions raised by the JUST group include how to market the products produced on reclaimed water. Should they label products as using reclaimed water? They also still need to develop extension planning and develop a business plan. Other issues include records, management, labor availability, price fluctuation, advancing age of Badia farmers, illiteracy, small land holdings and lack of farmer organizations. They hope to find a way to empower farmers. Precipitation in this area is <200 mm per year. They recognized the need to improve a monitoring project; the environmental impact statement process so common to U.S. developers is unknown in Jordan. Specifically, they lack funds to test for salinity buildup on their projects. They recognize that without this data they will not be able to develop long-term management programs. They request help in securing funds for this critical part of their program.

X. **Monday, September 26**. We met with Kafa'a and USAID at the U.S. Embassy in Amman at 9:00am. Attending were Jim Franckiewicz, Setta Tutundjian, Bob Freitas, Mohammad Shabahz, Akrum Tamimi, Bob Hudgens, and German Sabillon. Part of the Kafa'a project was to get extension up and running in Jordan. (This was Jim's highest priority). The project was extended to the end of 2006, but they remain hard pressed to get extension going. They are distressed that 2/3 of the water in Jordan goes to agriculture and the country gets very little for it. The entire USAID Jordan mission is built around water use and water efficiency, not agriculture per se. Our cooperative agreement with USAID extends through 2007 and may be extended into 2008. A World Bank grant given to NCARTT to inventory Jordanian medicinal plants, but that grant did not extend to the chemical properties of those plants.

Kafa'a's project areas are defined by the basin boundaries for the Jordan Valley and the Mafraq areas. They have Offices in Amman and Jordan Valley. A number of universities involved with Kafa'a including the University of Arizona, Texas A&M University, North Carolina State University, and the University of California-Davis. They have 15 more months of involvement (realistically 1 year of implementation and 3months wind-down). Kafa'a is now looking for additional universities to help them fill in the gaps, especially in extension. Projects they suggested for cooperation include:

1. Electronic library of arid lands information (probably through NCARTT).
2. Strengthening the agricultural extension service throughout Jordan.
    a. Field days
    b. Brochures
    c. Demonstrations
    d. Development of subject matter specialists
        i. Irrigation management
    e. Workshops that Bob would like to have help with
        i. IPM
        ii. Post-harvest (handling, packaging)
        iii. Irrigation management
    f. Installation of lysimeters in four agricultural zones
    g. National committee -- no coordination among many players. A master plan for extension is needed.
    h. Treated wastewater. Great topic for a regional workshop.

i. NCARTT has a video conferencing center for downloading seminars.
    i. Knowledge centers – 100 are planned for Jordan with computer access and computer links.
j. Revising and reviewing agricultural curricula at Jordan universities, especially in extension.
k. Development of a crop suitability map that is GIS-based, including soil information, crop identification for adaptation.

This list is virtually identical to the list emailed to us before we traveled to Jordan. Bob provided an overview of the Kafa'a project (Appendix E).

Their main task in a nutshell is to identify problems, especially in post-harvest technology. Kafa'a did an assessment of native ornamental plants. A report was prepared but follow up was not completed. Kafa'a has several counterpart institutions, including the Ministry of Water and Irrigation, the Jordan Valley Authority, and NCARTT and the Ministry of Agriculture.

The bottom-line of the meeting with USAID was that if does not have to do, in some way with WATER, they are not interested!

We spent the afternoon on a short excursion to the University of Jordan where we met with the Dean of the Faculty of Agriculture (Dr. Mostafa Qrunfleh), the Head of the Department of Agricultural Economics and Extension, and an agricultural economics faculty member, Amer Jabarin. We found common interests in rangeland improvement evaluation, cost and return estimates for crops and livestock, feasibility and economic analyses. We need to follow up with their publication using their university website, www.ju.edu.jo.

After we returned from the University of Jordan meeting, Rich and I met to develop the master outline based on everything we have heard so far and to indicate the primary interests of our team, as well as a short list to use with a USAID/Kafa'a audience. We faxed Octavio a copy of the outline and met with Saad, Bob, and Akrum to discuss and refine it. We then called Octavio to bring him up to date. We typed the short list for use on Tuesday morning and emailed this list to Octavio (Appendices F and G).

XI. **Tuesday, September 27**. We met with Mohammad, Bob and Akrum for breakfast to discuss the short list and bring in Mohammad's thoughts. We then broke to add Bob Hudgens and German Sabillon from Kafa'a. After reviewing our outline with them, Bob Hudgens indicated they were very interested in having us conduct a marketing workshop aimed at their extension workers. About a half hour later, Saad and Setta joined the discussions of the NMSU short-list outline that had been typed the night before.

After the final meeting with USAID, BDRC, and Kafa'a, we left Amman to travel to the West Bank. After crossing the Jordan-Israel West Bank border on the Allenby Bridge, we checked into our hotel in Ramallah.

XII. **Wednesday, September 28**. Our first meeting of the day was held with Alaa Joma, Moawfia Swelem, Rami Rabayh, and Azzam Tubaileh (Ph.D. NMSU Agronomy 1985)

at the Palestinian Authority Ministry of Agriculture. The Ministry of Agriculture is now supervising about 40 agricultural projects. Their main problem is monitoring and evaluating these projects. They developed APIS: Agricultural Project Information System to help coordinate the various projects. They plan to establish a project management unit within the Ministry to coordinate with each of the projects, funding agencies and stakeholders, including evaluation and monitoring. They would like to have assistance in building the capacity of this new unit. The Ministry is trying to build the environment for private investment in agriculture. Market availability is a major concern for investors – they have no control (Israel does). They need to build and secure marketing institutions and facilities. The Ministry is defining Qualified Agricultural Zones. They now have 4,000 greenhouses in Gaza and can add 10,000 dunnums from surrounding areas. Preferential treatment will be sought from the European market with respect to quotas, taxes, and import tariffs. The concept is similar to that of the U.S.'s enterprise zones. They hope to next turn to the West Bank with such products as Hebron seedless grapes. Although the European Union will open in 2010 anyway, they are going to ask for early treatment beginning in 2007. This concept can be linked to the PAPA project. The Ministry identified needs for assistance in training to meet EuroGAP and other international standards.

The Ministry is also involved in establishing agricultural councils built around commodities, such as olive oil, milk, poultry, grapes citrus, vegetables, and date palms. The Ministry will assist the commodity councils with technical assistance, including production, marketing, etc., initially. They are monitoring joint research with NARC – National Agricultural Research Center for applied research and technology transfer. The Ministry does not seem to have any direct links with universities.

The Ministry has identified weaknesses in agricultural extension. Trying to unify the extension message. They now have 10 extension programs at the Ministry and will tie some of these to the agricultural councils. University extension graduates are weak in ground-level experience. Fieldwork is weak. There is little connection between universities and the private sector.

Denmark supported an agricultural regional project with Jordan, the PA, Israel, and Egypt. The project mainly (in the PA view) indicated difficulties in working with Israelis on a regional project. [Note the warning for the IALC-proposed watershed strategic planning / joint demonstration project.] At the scientific level, the PA Ministry has no problem with Israeli participation, but thinks they will encounter nothing except problems with Israeli control (e.g. travel permits). They would like to see farmer-to-farmer contact across the West Bank-Israel border.

"Everything is politics."

Our final meeting of the day was a meeting with Hebron University officials, including the Vice President for Academic Affairs, the Head of the Department of Plant Production and Protection, a faculty member from the Department of Agricultural Economics and Extension, a faculty member from the Department of Animal Production and Protection, and the Manager of University research units. In addition to these three departments, the faculty of Agriculture at Hebron University includes a soil and irrigation department and

a nutrition and food science department. We discussed fruit trees, olives, grapes, and vegetables in the Hebron mountainous area plus the Jordan Valley. Talat Aburajab-Tamimi (the agricultural economist) teaches service courses (introduction to agricultural economics and introduction to extension) as well as other courses (marketing, food security, and others). More specialists are needed rather than generalists in the extension program throughout the West Bank. Marketing has two parts on the West Bank: a technical part and a political part. Borders, checkpoints, and road/border closures are a real threat to agricultural marketing, as are the technical issues of packaging and skills. The West Bank lacks an information system for farmers, i.e. the extension channel is not open. Talat has been invited to be a member of the grape agricultural council.

They felt the need to establish a database for detailed information concerning local production (including home use, local marketing, and international marketing), land area in various crops, and livestock numbers. They need funding to begin. They felt the need to develop knowledge centers. In livestock they face similar issues: inability to market livestock and livestock products, high feed costs, rangeland improvement, and extension. The Vice President was also interested in student exchange programs. All were interested in extension training programs for all.

After visiting at the university itself, we traveled a few kilometers south to visit the University's animal science research facility. They had sheep, goats, and dairy cattle on the facility, as well as a temporarily empty poultry research barn (student projects were finished at the end of the last semester and had not begun for the new semester quite yet). They use their research facilities for students to learn how to efficiently raise livestock.

XIII. **Thursday, September 29**. We met Mike Martin, along with Akrum Tamimi, in Tel Aviv on Thursday afternoon for a follow-up meeting regarding USAID West Bank-Gaza project potential. Mike had hoped to discuss our first visit with Paul Forrest – the agribusiness project leader for USAID WB-G, but other issues including the end of the fiscal year intervened and Mike was not able to discuss our earlier visit with Paul. Mike noted that the World Bank agricultural project will have a project management unit within the West Bank / Palestinian Authority Ministry of Agriculture. The heart of the agribusiness project being conducted by the USAID WB-G mission is that the Palestinians are looking for marketing alternatives outside of the Israelis, especially the Israeli near-monopoly parastatal exporter. Scanning technology for whole containers is being supplied by the U.S. to Israel to scan imported vegetable containers. There is conjecture on both sides of the border as to whose problem is controlling.

PAPA is the Palestinian Agribusiness Partnership Activity, a USAID WB-G program with the PA Ministry of Agriculture. PALTRADE is a Palestinian-led NGO entity that is running the greenhouses taken over by the PA after the Israelis vacated Gaza. James Wolfenson (former president of the World Bank) is in the area to lead the disengagement effort. He has put together a group of philanthropists to compensate the settlers who were forced to leave their Gaza settlements. Mike will send the World Bank contact information to assist us in making contact with the World Bank. Mike did not have anything new to say about the extension/university assessment project.

XIV. **Friday, September 30**. We spent what was left of Thursday evening in Jerusalem, but we had to get up at 1:30am to get to the Tel Aviv airport on time for a 5:30am flight. We arrived at the airport at 2:45 and waited in our first line until 4:00am before we began screening. We had 10 minutes to spare. After a couple of long flights and one relatively short one, we reached home about 8pm.

XV. **Post-trip activity**.

A. Salem Al-Oun responded to our visit with a follow-up email. He indicated ten areas of interest for the people of the northern Badia of Jordan.

1. Marketing of agricultural products
2. Organic farming and marketing
3. Extension for farmers in relation to packaging, pricing, changes in consumer behavior, and national, regional, and international markets
4. Implementation of the international trade agreement and its impact on Badia agribusiness.
5. Privatization process and its impact on farmers
6. Relationships between farmers and private companies (such as the tomato processor)
7. The withdrawal of the Ministry of Agriculture
8. Bedouin agribusiness (from camels to irrigated farming)
9. Agro-tourism in the Badia
10. Bedouin women's labor in the agricultural sector after the reduction of sheep grazing.

B. Bob Freitas emailed Setta Tutundjian and Jim Franckiewicz of the USAID Jordan mission outlining the IALC / NMSU hope for a mission buy-in, to the tune of $200,000 per year for the next two years.

C. Also attached to this report are a list of contacts (Appendix H), a list of hotels and transportation contacts (Appendix I), and the NMSU team fact sheet delivered to various groups during the trip (Appendix J).

Appendix A. NMSU/IALC Middle East Trip – Israel, Jordan, & West Bank Travel Schedule

Richard Phillips & Jim Libbin's IALC Travel Schedule
Israel, Jordan, & West Bank
September 16 – September 30, 2005

9/16-18 Travel from New Mexico to Tel Aviv, Israel (arrive Sunday, September 18th at 1:20 am KLM Royal Dutch Flt 461 from Amsterdam)

Hotel: N/A In-Flight

9/18 (Sun) 12:30 pm – Meet with Mike Martin, USAID WBGaza – meeting at Mike Martin's home:
159 Hanassi in Herzilyya Pituach; his cell phone: 972-50-556-0770

Hotel: Hotel de la Mer
62 Hayarkon Street
Tel-Aviv, 36904
Israel
Tel: *011*-972-3-5100011
Fax: *011*-972-3-5167575
Email: guests@delamer.co.il
Rate: $79/day

9/19 (Mon) Travel from Tel Aviv to Tiberius, Israel for IALC meeting from 4-7 p.m.

Hotel: Rimonim Galei Kinnereth Hotel, Tiberias, Israel
1 Eliezer Kaplan Steet
Tiberias, Israel
Tel: *011*-972-8-658-8822
Rate: $160 single

9/20 (Tue) Travel with IALC group to Amman Jordan – cross into Jordan at Maoz Haim via the Sheikh Jussein Bridge

Hotel: Grand Hyatt Amman Hotel
Hussein Bin Ali Street
Jabal Amman
Amman Jordan
Tel: *011*-962-6-465-1234
Email: info@ammgh.com.jo

9/21 (Wed) Visit agricultural agencies and projects
7:00 p.m. attend Dinner hosted by BRDC
Hotel: Grand Hyatt Amman Hotel
Hussein Bin Ali Street
Jabal Amman
Amman Jordan
Tel: *011*-962-6-465-1234
Email: info@ammgh.com.jo

9/22 (Thu) Travel with IALC to Wadi Mousa/Petra in southern Jordan

Hotel: Taybet Zaman Hotel & Resort at Wadi Mousa/Petra
Tel: *011*-962-3-215-0111

9/23 (Fri) Travel with IALC in southern Jordan
Return to Amman Jordan in the evening
Hotel: Grand Hyatt Amman Hotel
Hussein Bin Ali Street
Jabal Amman
Amman Jordan
Tel: *011*-962-6-465-1234
Email: info@ammgh.com.jo

9/24 (Sat) Visit agricultural projects and farming areas

Hotel: Grand Hyatt Amman Hotel (above)

9/25 (Sun) Visit agricultural projects and farming areas
Hotel: Grand Hyatt Amman Hotel
Hussein Bin Ali Street
Jabal Amman
Amman Jordan
Tel: *011*-962-6-465-1234
Email: info@ammgh.com.jo

9/26 (Mon) Meet with USAID??
Visit agricultural projects and farming areas
Hotel: Grand Hyatt Amman Hotel
Hussein Bin Ali Street
Jabal Amman
Amman Jordan
Tel: *011*-962-6-465-1234
Email: info@ammgh.com.jo

9/27 (Tue)	Meet with USAID?? Visit agricultural projects and farming areas Travel to Jerusalem
	Hotel:
9/28 (Wed)	Meet with West Bank agricultural development agencies
	Hotel:
9/29 (Thu)	Jerusalem – work on trip report
	Hotel:
9/30 (Fri)	Return to USA on KLM Royal Dutch Flight 661

Travel Information

Ariline Schedule – see attached sheet

Time Change:
Las Cruces is 9 hours behind Israel/Jordan.
So, calling at 9 pm in the evening will reach Israel/Jordan at 6 am the following morning.

Monetary Exchange: June 1, 2005

1 U.S. Dollar = 4.49 Israeli Shekels
1 U.S. Dollar = 0.71 Jordanian Dinars

Key Contacts: FAMILY
Gail Libbin:
Home 505- 521-7169
Mobile: 505-635-7571
Email: NA

Linda Phillips:
Home 505-521-3325
Mobile 505-650-3325
Email: lindaphillips01@earthlink.net

KEY CONTACTS DURING TRAVEL PERIOD:

NMSU

Octavio Ramirez: NMSU Dept. Head Ag Economics & Ag Business
Office 505-646-2222
Mobile 505-640-9305
Home: 505-525-1607
Email: oramirez@nmsu.edu

Albina Armijo: Rich's Administrative Assistant
Office: 505-646-7936
Home: 505-233-2310
Email: aarmijo@nmsu.edu

IALC/UNIVERSITY OF ARIZONA

Esther Miklofsky: IALC University of Arizona, Tucson, AZ
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Bob Freitas: IALC University of Arizon, Tucson, AZ
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Email: bobf@ag.arizona.edu

Jim Chamey – IALC/University of Arizona Tel: 520-621-3024

Washington DC

Scott Christiansen: USAID/ANE Washington D.C.
Tel: 202-712-4584
Email: schristiansen@uasid.gov

Israel/Jordan

Mike Martin: USAID-West Bank and Gaza
Tel: *011*-972-3-511-4872
Fax: *011*-972-3-511-4888
Mobile: *011*-972-50-556-0770
Email: mimartin@usaid.gov
Home Address: 159 Hanassi in Herzilyya Pituach;

Akrum H. Tamimi
Tel: 011-972-59-920-5384
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Home?: 011-972-2-225-6684
Email: akrumt@email.arizona.edu

Setta Tutundjian
USAID/Jordan
Tel: 011-962-6-5906708
Email: stutundjian@usaid.gov

Saad xxxxxxxx: Email: s_ayyash@yahoo.com

James Franckiewicz USAID Jordan
Robert Hudgens (AED) KAFA'A Project
Herman Sabillon KAFA'A Project

Agenda
Sustainable Development of Drylands in Asia and the Middle East

IALC Project Technical Advisory Committee Meeting
Hotel Rimonim, Tiberius, Israel
Monday, September 19, 2005

4:00 – 7:00 pm, Small Conference Room
***TAC Executive Session* (4:00 – 4:30pm)**

1. Introductions.
   - Greetings by new Interim TAC Chair, LeRoy Daugherty
2. Administrative matters
3. TAC Review
   - Project components
   - Methodologies
   - Communications

***TAC and Component Presentation* (4:30 – 5:45pm)**

4. *Brief* Reports on Project Component Status
   - Afghanistan-Pakistan (Steve Pueppke)
   - Jordan (Akrum Tamimi)
   - Yemen (Rich Phillips & Jim Libbin, NMSU)
   - Libraries rebuilding – Afghanistan (Bob Freitas)

Break

5. Component Strategy Discussions **(6:00 – 7:00 pm)**
   - Forward Planning (October – March)
     i. Key issues & Budget
     ii. 3rd Year Planning for current CA
     iii. Mission "Buy-In" Projections
     iv. New initiatives
     v. Next meeting date
6. Adjourn (7:00pm)
7. Working Dinner (7:30pm)

IALC Board Meeting in Israel and Jordan

Sept. 16th 2005- Sept. 20th 2005

Final Agenda

Friday Sept. 16th-

Arrival and rest
Overnight - Sheraton Plaza Hotel in Jerusalem.
Dinner on your own

Saturday Sept. 17th-

10:00am-05:00pm	Guided tour in Jerusalem by Rami Peled
06:45pm	Leave with bus to Dolphin Restaurant.
07:00pm	Dinner with Itzhak Elyashiv CEO- KKL, hosted by the IALC. Overnight Sheraton Plaza Hotel in Jerusalem.

Sunday Sept. 18th-

08:30am-09:30am	Meeting with Chairman Leket, KKL headquarters in Jerusalem.
11:45am- 12:15pm	Liman- Rainfall & Runoff Monitoring.
12:45pm- 02:15pm	Shivta- Lunch and Tour.
02:15pm-04:30pm	Ancient Agriculture, Lavan Watershed.
05:00pm-05:30pm	Ein Avdat Lookout.
06:00pm	Arrival to Ramon Inn, Mitzpe Ramon.

Dinner hosted by KKL, at the hotel.

Monday Sept. 19th-

7:45am	Leave hotel.
08:00am-09:00am	Ramon Crater Scenic Trail.
10:30am- 11:30am	Arad Valley- Winery.
11:45am- 12:45pm	Yatir Forest & Lunch.

Leave to Tiberias

04:00pm-07:00pm	TAC meeting at the hotel.

Dinner on your own. Overnight in Hotel Rimonim- Galey Kineret, Tiberias.

Tuesday Sept. 20th-

08:00am	Leave the hotel
08:45am-10:00am:	Hula Bird Sanctuary
10:30am- 11:00am	Mt. Manara Cliff.
11:00am- 12:00pm	Biria Forest
12:00pm- 01:00pm	Lunch at bat Yaar.
02:00pm-02:30pm	Planting trees at Lavi Forest.
03:30pm	Crossing Sheikh Hussein Bridge to Jordan

IALC Sustainable Development of Drylands in Asia and the Middle East
Cooperative Agreement Renewal
Four Year Budget (October 1, 2003 - September 30, 2007)
Updated September 11, 2005

	Year 1		Year 2		Year 3 10/01/05 - 9/30/06		Year 4		Total Years		Total Project
	USAID-ANE	USAID-Missions	USAID-ANE	USAID-Missions	USAID-ANE	USAID-Missions	USAID-ANE	USAID-Missions	USAID-ANE	USAID-Missions	
A. Project Admin. UofA lead											
1. Direct costs	176,688		206,349		**208,313**		213,472		804,822		804,822
2. Indirect costs											
a. @26%MTDC	45,939		53,651		**54,161**		55,503		209,254		209,254
b. subcon. @26% of 1st 25K	6,500		0		**6,500**		0		13,000		13,000
Total Admin	229,127		260,000		**268,974**		268,975		1,027,076		1,027,076
B. Afg-Pak, C.1,UIUC lead, sub1											
1. Direct costs	303,787		310,020		**248,016**		248,016		1,109,839		1,109,839
2. Avg. Indirect costs @ 20.96%	63,677		64,980		**51,984**		51,984		232,625		232,625
Total Component 1	367,464	400,000	375,000	477,500	**300,000**	**350,000**	300,000	350,000	1,342,464	1,577,500	2,919,964
C. Jordan, Comp.2, UofA lead											
1. Direct costs	175,000		174,274		**151,278**		151,278		651,830		651,830
2. Indirect costs @26%MTDC	45,500		45,311		**39,332**		39,332		169,476		169,476
3. BRDP (sub 2)	50,000		57,500		**67,500**		67,500		242,500		242,500
Total Component 2	270,500	200,000	277,085	300,000	**258,110**	**275,000**	258,110	250,000	1,063,806	1,025,000	2,088,806
D. Lib. Rbld Activity UofA/IALC											
1. Direct costs	62,500		10,250		**34,059**		34,059		140,868		140,868
2. Indirect costs @26%MTDC	16,250		2,665		**8,855**		8,855		36,626		36,626
Total Component 3	78,750		12,915	0	**42,914**	**40,000**	42,914	150,000	177,494	190,000	367,494
E. Yem/Jord-Ag, C.4, NMSU											
1. Direct costs	56,433		56,433		**75,245**		75,245		263,356		263,356
2. Indirect costs @32.9%	18,567		18,566		**24,756**		24,756		86,645		86,645
3. Mod to subcontract	62500										
Total Component 4	137,500	125,000	74,999	304,811	**100,001**	**200,000**	100,001	200,000	412,501	829,811	1,242,312
F. IAMA USAID/WB Wrkshp			300,000						300,000	0	300,000
G. WB/G Intiative					**30,000**		30,000		60,000	0	60,000
Total by Year & Source	**1,083,341**	**725,000**	**1,300,000**	**1,082,311**	**1,000,000**	**865,000**	**1,000,000**	**950,000**	**4,383,340**	**3,622,311**	**8,005,651**

Checksum
8,005,651

Appendix D. NMSU/IALC Middle East Trip – Israel, Jordan, & West Bank Yemen Presentation Summary

Project History: IALC/NMSU/Yemen

2003: August, September, October, November, December

- Proposal Submitted
- Proposal Approved
- Contract Signed
- Email Coordination

- Travel to Yemen for Assessment
  - *Drs. Ramirez, Rosencrans and Gorman*
- Budget Proposal Submitted

Project History: IALC/NMSU/Yemen

2004: January, February, March, April, May

- Scope-of-Work and Budget Submitted
- Email Communication and Coordination

- Project Modified through "Consortium":
  Include Thamar, Ibb, Aden and Sana'a

Project History: IALC/NMSU/Yemen

2004: June, July, August, September

- Travel to Yemen to Assess Consortium Participation
  Drs. Ramirez, Libbin and Rosencrans
- Revised and Delivered Plan and Budget

- Approval of Revised Plan by USAID/Yemen

Project History: IALC/NMSU/Yemen

2004: October, November, December
2005: January

- Travel to Yemen to Deliver Project Management Training to University Participants
  Mr. Phillips
- Continue work via Email with Yemen universities to develop their projects

- Travel to Yemen to Deliver Agribusiness and Extension Training
  Drs. Rosencrans and Gorman

Project History: IALC/NMSU/Yemen

2005: February, March, April

- Proposal to Hire In-Country Coordinator – *not approved*
- Proposed Sub-Contract to Sana'a University Submitted – *not approved*
- Sent Schedule for Mr. Phillips' Travel for Training and Project Consultation – *travel clearance denied*
- Attempts to Reach a Compromise Agreement

Project History: IALC/NMSU/Yemen

2005: May, June

- USAID Mission Directors' Conference
  - Sent guidance for major re-direction of project focus
    - Purchase Books
    - Move off University Research Farm
    - Terminate Extension Activities
    - Concentrate on Water Issues

- Revised and Submitted Summary Proposal to USAID/ANE
- Revisions Rejected
- Meetings at IAMA Conference
  - Decision to Discontinue Project
  - Orderly Close-Out

Appendix E. NMSU/IALC Middle East Trip – Israel, Jordan, & West Bank -- KAFA'A Ideas List

Subject: RE: Visit by the IALC-NMSU team
To: Bob Freitas <bobf@Ag.arizona.edu>
Cc: oramirez@nmsu.edu, rphillip@njcf.ad.nmsu.edu, jlibbin@nmsu.edu, akrumt@email.arizona.edu, s_ayyash@yahoo.com, "Christiansen, Scott(ANE/TS)" <SChristiansen@usaid.gov>, esmhaa@Ag.arizona.edu,

Dear Bob,

Just to update you on the latest. We are currently flushing out ideas with KAFA'A to see what areas you may collaborate in. I have a meeting tomorrow with them and will hopefully be able to discuss things in more details.

I understand from Scott's E-mail that a number of you will be in Jordan later this month and at that time we will be able to sit and go over these ideas to pick and choose what would be the most suitable to pursue.

The current ideas that KAFA'A came up with (these are still in the draft form and I'm listing them all and not in any order of preference) are:

*Develop an electronic library of arid land references on the NCARTT website
* Assist in the subject matter training workshops for agricultural extension agents
* Offer post-graduate degree programs related to irrigation with reclaimed water
* Strengthen the NCARTT research program on treated wastewater in agriculture
* Install a network of lysimeters in four agro-ecological zones of the Jordan Valley
* Participate in the development of a Master Plan for agricultural extension
* Present technical seminars through the NCARTT Video Conferencing Center
* Improve the curriculum in agricultural extension at national universities
* Strengthen the remote sensing capabilities of GIS units at NCARTT and JVA
* Host a Middle East conference on water use and recycling in agriculture
* Provide a training workshop in optimal water storage and delivery systems for JVA

I'm sending you these preliminary ideas so that you can internally consider them and identify which may have potential so that we discuss these later this month.

PS: if we come with any other ideas I'll forward those as well.

Setta Tutundjian
Project Management Specialist: Policy Reform and Institutional

Strengthening
Office of Water Resources and Environment
United States Agency for International Development
Tel: 962 6 5906708
Fax: 962 6 5920143
E-mail: stutundjian@usaid.gov

-----Original Message-----
From: Bob Freitas [mailto:bobf@Ag.arizona.edu]
Sent: Friday, August 19, 2005 4:27 AM
To: Tutundjian, Setta (JORDAN/WRE)
Cc: oramirez@nmsu.edu; rphillip@njcf.ad.nmsu.edu; jlibbin@nmsu.edu; akrumt@email.arizona.edu; s_ayyash@yahoo.com; Christiansen, Scott(ANE/SPO); esmhaa@Ag.arizona.edu
Subject: Visit by the IALC-NMSU team

Dear Setta,

I am following up on our July visit with you in regards to initiating exploratory work in Jordan by the IALC member institution, New Mexico State
University, under the current Cooperative Agreement with USAID. As it appears that the Yemen component which NMSU has been leading will close as
of the end of September, 2005, there is an excellent opportunity for the

Jordan Mission to explore employing the expertise of this highly qualified
team, members of which you met in Chicago.

As we have funds from the USAID-ANE core being re-directed from work which
had been projected for Yemen, the exploratory phase of NMSU's work will not
require a Mission buy-in at this time. You had mentioned during our July
meeting that it appeared that a good time for the NMSU team's initial visit
would be towards the end of September and this coincides well with a visit
by the IALC Board to Jordan which will bring me back as well. My belief at
this point is that Rich Phillips and Jim Libbin will be able to make the

September visit, while Octavio Ramirez will be able to come sometime in mid-November.

I would also like to ask for your suggestions as to some of the organizations and institutions (governmental and non-governmental) which

the NMSU team should try and visit. Akrum Tamimi and Saad Al-Ayaash (Badia

Research and Development Programme) will be handling the scheduling and itinerary development. Finally, I would like to request a meeting with you
for the 26th or 27th of September on behalf of the NMSU team.

Best wishes,

Bob.

Robert J. Freitas
Project Director & Associate in Extension (ABE)
Sustainable Development of Drylands Project
IALC-Office of Arid Lands Studies
The University of Arizona
1955 E. Sixth St. (Bldg. 184)
Tucson, AZ 85719-5224

Ph: (520) 621-1956
Fax: (520) 621-3816
Email: bobf@ag.arizona.edu

Appendix F. Overall Outline

U.S. Agency for International Development
International Arid Lands Consortium
Badia Research and Development Center
New Mexico State University

I. Agribusiness Project on West Bank – Gaza (Mike Martin) PAPA
II. Institutional Assessment on West Bank – Gaza (Mike Martin)
III. Watershed Strategic Planning / Committee Process (NMSU, Saad, Akrum, Gill)
IV. Malik Hadadin
    A. Camel products (cheese, yogurt, milk, hair, meat, byproducts, and hides)
    B. Honey – medicinal properties of honey
    C. Ford Foundation collaboration
    D. Natural products / medicinal
V. Business Incubator (Ayed Amer)
VI. Wadi Mousa
    A. Business plan for nursery owner
    B. Economic assessment of other elements of that project
VII. Mafraq Farming Area
    A. Tomatoes
        1. Fresh, local market
        2. Fresh, international market
        3. Processing
        4. Variety selection for specific markets
        5. BMP – Best Management Practices
    B. Marketing channels for all fruits and vegetables grown in the region
VIII. Anaqeed Al-Khair Cooperative Demonstration Project
    A. Herd quality improvement (milk, lamb crop, vet clinic, meat)
    B. Dried tomatoes
    C. Sandia-style hydroponic feed production unit
    D. Thyme
    E. Goat hair spinning and weaving for tent walls
    F. Wool (mattress stuffing)
    G. Honey
    H. Marketing channel analysis
    I. Work force development / sanitary standards
    J. Use of cooperative members as an extension model / audience
    K. Economic and feasibility analysis
IX. Community-Based Range Rehabilitation Project / Tal Rimah
    A. Economic analysis of range improvement
    B. Climate station and transect/exclusion areas needed on regenerated and overgrazed pastures
    C. Use of cooperative members as an extension model / audience
X. Dairy / Tal Rimah
    A. Marketing of milk and cheese
    B. Work force development / sanitary standards
    C. Use of cooperative members as an extension model / audience
    D. Business plan
    E. Alternative uses for the facility in off-season (goat, camel, boutique cheese)
XI. Al el-Bayt University
    A. Finance department – assistantships
    B. Salem
    C. Extension center (at Agricultural Vocational High School)
XII. Jordan University for Science and Technology
    A. Economic analysis of wastewater application
    B. Extension
XIII. KHAAF'A Project Cooperation

A. Electronic library developed as a knowledge center concept
B. Subject matter training workshop
    1. Irrigation Management
    2. IPM
    3. Post harvest
        a) Physiology
        b) Marketing of harvested crops
            (1) Packaging
            (2) Market channels
C. Strengthening agricultural extension throughout Jordan
D. Lysimeter installation
E. Strategic planning for national extension coordination
F. GIS capability improvement, especially with crop suitability map
G. Curriculum assessment in agricultural extension at selected national universities
H. Middle East conference on water use and recycling
I. NCARTT videoconferencing

XIV. US AID – Identified Interests
A. Water efficiency
    1. Environmental concerns
    2. Resource use
    3. Must eventually be expressed in JD / m^3 of water
B. Alternative crops, especially capers and medicinal herbs
C. Income generating opportunities in rural areas

XV. West Bank
A. Ministry of Agriculture
    1. Project management unit
    2.
B. Hebron University

Appendix G. U.S. Agency for International Development
International Arid Lands Consortium
Badia Research and Development Center
New Mexico State University

I. Mafraq Farming Area
   A. Tomatoes
      1. Fresh, local market
      2. Fresh, international market
      3. Processing
      4. Variety selection for specific markets
      5. BMP – Best Management Practices
      6. GAP – Good Agricultural Practices
   B. Marketing channels for all fruits and vegetables grown in the region

II. Anaqeed Al-Khair Cooperative Demonstration Project
   A. Herd quality improvement (milk, lamb crop, vet clinic, meat)
   B. Dried tomatoes
   C. Sandia-style hydroponic feed production unit
   D. Thyme
   E. Goat hair spinning and weaving for tent walls
   F. Wool (mattress stuffing)
   G. Honey
   H. Marketing channel analysis
   I. Work force development / sanitary standards
   J. Use of cooperative members as an extension model / audience
   K. Economic and feasibility analysis

III. Community-Based Range Rehabilitation Project / Tal Rimah
   A. Economic analysis of range improvement
   B. Climate station and transect/exclusion areas needed on regenerated and overgrazed pastures
   C. Use of cooperative members as an extension model / audience

IV. Dairy / Tal Rimah
   A. Marketing of milk and cheese
   B. Work force development / sanitary standards
   C. Use of cooperative members as an extension model / audience
   D. Business plan
   E. Alternative uses for the facility in off-season (goat, camel, boutique cheese)

V. Jordan University for Science and Technology
   A. Economic analysis of wastewater application
   B. Extension – academic involvement

VI. KAFA'A Project Cooperation
   A. Electronic library developed as a knowledge center concept / community IT center
   B. Subject matter training workshop in marketing of harvested crops
      1. Packaging
      2. Market channels
      3. EuroGAP certification
      4. Certification of participants?
   C. Curriculum assessment and development in agricultural extension at selected universities

VII. US AID – Identified Interests
   A. Water efficiency
      1. Environmental concerns
      2. Resource use
      3. Must eventually be expressed in JD / m^3 of water
   B. Alternative crops, especially capers and medicinal herbs
   C. Income generating opportunities in rural areas

Appendix H. NMSU/IALC Middle East Trip – Israel, Jordan, & West Bank Trip Contacts

1. **IALC**
   a. **The University of Arizona**
      i. **Dr. Bob Freitas**
      Title: Project Director & Associate in Extension (ABE)
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      Fax: (520) 621-3816
      Address: IALC-Office of Arid Lands Studies
      The University of Arizona
      55 E. Sixth St. (Bldg. 184)
      Tucson, Arizona 85719-5224
      E-mail: bobf@ag.arizona.edu

      ii. **Dr. Akrum H. Tamimi**
      Title: Assistant Professor, Project Coordinator
      Telephone: 972-59-205-384
      962-79-519-3245
      972-2-225-6684
      Mobile: 0599205384
      Address: IALC-Office of Arid Lands Studies
      1955 E. Sixth Street, Building 184
      Tucson, AZ 85719-5224
      E-mail: akrumt@email.arizona.edu

      iii. **Dr. Erin H. Addison**
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Appendix I. NMSU/IALC Middle East Trip to Israel, Jordan, and West Bank –Hotel & Transportation Contacts

Hotels

Hotel De La Mer
Address: 62 Hayarkon St., Tel-Aviv 36904, Israel
Telephone: 972-3-5100011
Fax: 972-3-5167575
Rate: $79/night

Galei Kinneneth Tiberias
Address: 1 Eliezer Kaplan Street, Tiberias 14000, Israel
Telephone: 972-4-6728888
Fax: 972-4-6790260
E-mail: www.rimonim.com
Rate: $160/night

Grand Hyatt Amman
Address: Jabal Amman, Hussein Bin Ali Street P.O. Box831159, Amman 11183, Jordan
Telephone:
E-mail: info@ammgh.com.jo
Rate: $125/night

SOFITEL
Address: P.O. Box 2, Taybeh, Wadi Moussa, Jordan
Telephone:
Rate: $71/night

Bristol Hotel
Address: P.O. Box: 142509, Amman 11844, Jordan
Telephone: 962-6-592-3400
Fax: 962-6-592-3717
E-mail: www.bristolamman.com or bristol@bristolamman.com
Rate: $71/night

Grand Park Hotel
Address: Al-Masyoun Heights, Ramallah, Palestine, P.O.Box 1375
Telephone: 972-2-2986194
Fax: 972-2-2956950
E-mail: info@grandpark.com or http://www.grandpark.com
Rate: $78/night

Dan Pearl Jerusalem Hotel
Address: Zahal Square, Jerusalem 91007
Telephone: 972-2-6226666
Fax: 972-2-6226600

E-mail: http://www.danhotels.com
Rate: $100/night

Taxi
Tel Aviv, Israel
David ?
Cell: 05-06791068
Office: 03-9626088

Jerusalem, Israel
TAXI X GIV AT RAM- Jerusalem, Israel
Telephone: 02-5000101 or 02-5000505
Nabir Cell: 0522-281596

Appendix J. NMSU/IALC Middle East Trip – Israel, Jordan, & West Bank – Team Qualifications Statement

New Mexico State University (NMSU):

NMSU is a comprehensive institution dedicated to teaching, research, and service at the graduate and undergraduate level. It is the only land-grant institution that is also classified as Hispanic-serving by the federal government and ranked by the Carnegie Foundation in the top research category, Research-Extensive. The university is also home to the state's NASA Space Grant Program. With extension and research sites in every county, New Mexico State has distance-education capabilities to extend its reach to all the citizens of the state. Total student enrollment for NMSU main campus is approximately 16,000, including 3,153 graduate students. Regular faculty members on the main campus number about 700. Eighty-one percent of the full-time faculty members hold doctoral degrees. NMSU offers 76 Bachelor, 51 Master's and 22 Doctoral degrees. Classified by the *Carnegie Foundation for the Advancement of Teaching* as a Doctoral/Research University - Extensive, NMSU had research and public service expenditures exceeding $134 million in 2003-2004.

The College of Agriculture and Home Economics (CAHE):

The College of Agriculture and Home Economics houses the expertise of over 150 faculty members housed in nine academic and five extension departments, including: Agricultural and Extension Education, Agricultural Economics and Agricultural Business, Agronomy and Horticulture, Animal and Range Sciences, Entomology, Plant Pathology and Weed Science, Family and Consumer Sciences, Fishery and Wild Life Sciences, and Hotel, Restaurant and Tourism Management. Academic degree programs include 18 Bachelor's, nine Master's and three Doctoral Degrees. Research is conducted on campus as well as in twelve off-campus Science Centers distributed throughout the State of New Mexico. The College also has 33 Cooperative Extension Service offices, one in each of the State's counties. The College's faculty members apply their disciplinary expertise to address key issues in the State of New Mexico, which include efficiently irrigated agricultural crop and animal production in an arid land environment, specialty high-value crop production, small-scale limited-resource farming, and rural economic development. Many of the faculty members have international expertise and several have worked in agricultural sector development projects in Middle Eastern Countries such and Yemen and Egypt.

Current NMSU Team Members:

Contingent on resource availability, the NMSU team could be expanded to include faculty members and specialists with expertise in most of the disciplinary and interdisciplinary fields represented within the College of Agriculture and Home Economics. At this point, however, the team's expertise focuses on agricultural sector/rural development and extension, agribusiness management and marketing, and agricultural project design and management. The current team members are:

Dr. Octavio A. Ramirez, Professor and Head of the Departments of Agricultural Economics and Agricultural Business and Extension Economics, College of Agriculture and Home Economics, New Mexico State University.

Dr. Jim Libbin, Professor, Departments of Agricultural Economics and Agricultural Business and Extension Economics, College of Agriculture and Home Economics, New Mexico State University.

Mr. Richard Phillips, Senior Project Manager, College of Agriculture and Home Economics, New Mexico State University.

Dr. Carlos Rosencrans, Associate Professor at the Department of Agricultural and Extension Education, College of Agriculture and Home Economics, New Mexico State University.

Dr. Bill Gorman, Adjunct Professor at the Department of Agricultural Economics and Agricultural Business, College of Agriculture and Home Economics, New Mexico State University.

Current NMSU Team Member Expertise and Qualifications:

Dr. Octavio A. Ramirez – is an agricultural economist with experience in the administration of research, teaching and extension units in the U.S. and developing countries. Dr. Ramirez also has extensive experience in the design and management of programs that enhance the synergy and take advantage of the interaction between higher education, research and outreach/extension efforts to aid and promote agricultural development. He has formally advised national research and extension programs and academic units at universities in developing countries on programmatic issues including curriculum development, research and extension prioritization, etc. Dr. Ramirez has conducted research and published on a variety of agricultural and natural resource development and management issues, including the transfer and adoption of technological innovations by farmers in developing countries, the expected return and risk from proposed technological innovations in agriculture, agroforestry and forestry production, and economic and policy aspects of chemical pesticide use in developing countries, among others. Dr. Ramirez's academic credentials include over thirty research articles published in prestigious refereed journals and a similar number of invited and selected research paper presentations at scientific conferences, many of them at international conferences. He has been a principal or co-principal investigator or project director in several major research and extension/external cooperation grants and contracts totaling over $5 million.

Dr. Jim Libbin – is an agricultural economist with extensive extension, teaching, consulting, and research experience in farm and ranch-level production and financial records systems; production economics applied to farm and ranch businesses; the process for developing cost and return estimates for farm and ranch commodities; and agricultural accounting, agricultural finance, and firm-level agribusiness management issues. The bulk of Libbin's 25-year career at NMSU has been dedicated to analysis of the economics of agricultural crop and livestock production under arid (including furrow, sprinkler, and drip irrigation), semi-arid (dryland), greenhouse, and rangeland conditions. He has worked with agronomic crops, high-value

specialty, orchard, and potential new crops, as well as with value-added processing. Libbin has conducted many extension workshops on crop cost control, production economics, financial management, new technology assessment, and alternative crop and livestock production opportunities. He has short-term international development experience in Venezuela, Mexico, and Yemen and has traveled to South Africa in a consulting role and has published over 200 publications including three textbooks, articles in academic journals, extension and experiment station reports, and popular press articles. He has been the principal investigator of a long-term project to develop and update cost and return estimates of commercially-gown and potential agricultural crops in New Mexico and principal investigator of New Mexico Chile Task Force projects and several other projects, as well as co-investigator of Agricultural Experiment Station and grant-funded projects dealing with value of land and water, economic impact of technology, government farm programs, farm lease rates, enterprise adjustments, and risk evaluation. Total external funding for research and extension projects exceeds $2,500,000.

Mr. Richard Phillips – is a senior project manager for the Dean of the College of Agriculture and Home Economics where he advises on project management and strategic planning. He is a Certified Project Manager (PMP) with technical expertise in forestry, horticulture, and agribusiness. For 12 years he was manager/superintendent of one of NMSU's Agricultural Experiment Station's Ag Science Centers, a facility that serves as a resource for agricultural research, teaching, and extension outreach. Mr. Phillips is bi-lingual in English and Spanish. His international experience includes developing and managing horticulture and reforestation training and applied research projects throughout Latin America. He was the project specialist for the IALC/NMSU Yemen project, where he provided strategic planning and project management training and consulting. His expertise includes building multi-disciplinary economic development teams with members such as: university researchers and extension specialists; business leaders; and other state, federal, and non-governmental organizations. The U.S. Secretary of Agriculture has recently appointed Mr. Phillips to the USDA Technical Advisory Committee for Fruits and Vegetables and International Trade. Mr. Phillips has also coordinated the university's efforts to respond the changing trends in specialty crop production in the Southwestern U.S. He coordinated the strategic planning for the formation of an industry-university partnership for the New Mexico chile industry. His leadership and management responsibilities have included the coordination of major projects, including: development best management practices for chile production; agricultural engineering of appropriate technology, chile breeding for quality and pest management; and agribusiness/marketing. He has successfully competed for federal, state, and private funding. The task force's regional efforts are helping a 300 million dollar industry adapt to a changing global business environment. This task force model has been recognized by the U.S. Congress for its innovative interdisciplinary approach

Dr. Carlos Rosencrans – is presently an associate professor in the Agricultural and Extension Education Department with 21 years experience at NMSU in various entities. He teaches six undergraduate courses in agricultural technology and three graduate courses: Problem-Solving Approach to Teaching, Youth Program Development and Management, and New Mexico Water Issues as well as summer workshops in Windmill Technology and Trailer Construction. Carlos has in-depth training and experience in cooperative extension programs. He served four years as a county extension agent in central New Mexico where he focused in areas of economic development, urban water conservation and small farm crop production programs. He has also

been very active in programs supporting the growth and development of urban/rural youth. Dr. Rosencrans worked for three years in Yemen where he developed and implemented an instructional farm for technical agricultural assistance at the Ibb Secondary Agricultural Institute. He provided technical in-service training programs for Yemeni staff and faculty and assisted with laboratory practical training and local extension demonstration programs. He also has lifelong experience in both farming and ranching in New Mexico.

Dr. William Gorman – is an agricultural economist with extensive applied agricultural business and marketing experience worldwide. He has served as a consultant for agricultural businesses and agricultural governmental agencies numerous times. He also has experience designing and conducting short-term training programs for foreign nationals focusing on improved marketing and agricultural business practices. Dr. Gorman has over 35 years experience in marketing specialty crops. Much of his research at NMSU has been in doing research on the feasibility of producing, processing and marketing high value crops including Christmas trees, pecans, pistachios, wine grapes and wineries, sweet onions, apples, potatoes and catfish. His current research effort deals with the feasibility of growing and marketing Chinese Medicinal herbs in the Unites States. Dr Gorman is recognized as one of the leading experts in global world food systems. He is one of the founding members of the International Food and Agribusiness Marketing Association (IAMA)and has lectured and conducted research in over 20 countries. He has served as a consultant on specialty crops production and marketing for several government agencies and American Indian tribes. He is a co-author of a text book titled "Introduction to Food and Agribusiness Management.