

Quarterly Report-II
(January 1 – March 31, 2003)

**Sustainable Development of Drylands in Asia and
the Middle East**

A Cooperative Agreement (No. EEE-A-00-02-00050-00)

between

the U.S. Agency for International Development

and

the International Arid Lands Consortium

June 10, 2003

Activities Summary (January 1 – March 31, 2003):

- Sub-contracts for the University of Illinois at Urbana-Champaign and the Badia Research and Development Programme of Jordan have been completed. Based upon execution of the contracts and the successful completion of initial quarterly reports as required, initial payments were made on the sub-contracts.
- Independent contractor agreements with the Technical Advisory Committee members from U.S. member institutions of the IALC have been finalized for the Project. The initial requests for payments were approved and corresponding payments made.
- Travel by the U.S.-based Project team (John Santas, Oval Myers and Robert Freitas) to Pakistan and Afghanistan was not possible during this period because of the travel warning issued by the State Department. Fortunately, however, the University of Illinois at Urbana-Champaign (UIUC) was able to draw upon its previous work and established an on-the-ground presence by hiring Dr. Abdul Qayyum Khan. This enabled UIUC to be able to continue making progress on the Pakistan-Afghanistan component.
- In spite of the difficulties of travel, the field office for the Afghanistan-Pakistan component has been set-up by Dr. Qayyum and is now functioning at the Northwest Frontier Province Agricultural University. The field office has been set up as an office of the University of Illinois, appropriate for a university-to-university relationship. This relationship derives from the extensive work that was performed under USAID contract a decade previous. Additionally, the establishment of the office was made possible given a Memorandum of Agreement which had been executed at the conclusion (1994) of the previous USAID contract). It should be noted that the Memorandum of Agreement will need to be renewed for the current Project.
- A capability training document has been completed by Dr. Qayyum for the NWFP-Agricultural University which provides details on the faculty, staff and facilities available at AU. Dr. Qayyum identified six initial training courses through discussions and meetings with the AU faculty. Outlines of these courses are provided, as well. This document will serve as the basis for the creation of the sequence of training courses to be offered to agricultural leaders from Afghanistan
- A document detailing the initial needs for technical assistance for Jordan in wastewater and bio-solids responding to the needs expressed by the Badia Research and Development Programme (BRDP), the Jordan University of Science and Technology, and USAID-Amman was completed by Project Director, Robert Freitas. The document was presented to the UofA faculty technical assistance team during the meeting on campus in February and extensively discussed.

Individual team members were asked to consider their potential involvement in answering the call to address specific needs in Jordan as expressed in the document.

- The identification of faculty willing to travel to Jordan and/or work with Jordanian counterparts to provide technical assistance has been a success. At this point sixteen faculty members have been identified with the necessary skills and desire to contribute to this Project. Although travel to the region by U.S. citizens has been severely restricted during this quarter, discussions with the faculty continued on providing workshops, instruction, guidance and hosting for Jordanian study tour participants.
- USAID Cognizant Technical Officer for the Project, John Wilson, met with Technical Advisory Committee in Washington, DC on March 5th. A meeting packet had been prepared by the Project Director (PD). Frank discussions of the progress and problems encountered by the Project ensued. In particular, difficulties of travel were discussed. Dr. John Santas, UIUC, presented the NWFP-AU capability statement document. A status update for Jordan was provided. Dr. Kellogg also stated 3 goals for the TAC which are: review and evaluate the components, provide linkage to other IALC members and provide USAID and other funders expertise for this and other projects. USAID indicated that given the difficulties in the region, the Project is making good headway in meeting its objectives.
- The Project funded the non-travel expenses for Ms. Dima Kayed, a PhD candidate supervised by faculty technical assistance team member, Dr. Charles Gerba, University of Arizona. Ms. Kayed was contracted to perform a Laboratories Capability Study, Phase I, while she was in Jordan for personal family reasons. The objective of the study was to assess the capabilities of the key laboratories in Jordan. These are the labs that will most likely be involved in wastewater and bio-solids sample analysis which come from studies related to this Project.

Activities Summary for the following period (April 1, 2003 – June 30, 2003):

- Travel to Jordan. A trip is in the planning stages for Dr. Akrum Tamimi, visiting Assistant Professor, Department of Agricultural and Biosystems Engineering, UofA, to travel to Jordan in the late Spring. Dr. Tamimi will assist in the start-up phase of the bio-solids study led by the Royal Scientific Society (RSS) of Jordan. Additionally, he plans to assist the BRDP in the coordination of the various institutions involved in bio-solids and wastewater pilot projects. Ms. Dima Kayed is planning to continue Part II of the laboratory assessment study during this period. Additionally, the Project Director, Mr. Freitas, may travel to Jordan in the latter part of this period or early following to assist in arranging visits to the U.S. by Jordanian faculty and professionals.

- Travel to Pakistan. If the travel warning is lifted, travel to Islamabad by team members will be accomplished. However, if restrictions on travel remain in effect, the primary field activities will continue to be carried out by Dr. Abdul Qayyum. It is anticipated that during this next period coordination will involve contacts with counter-parts in Afghanistan, as well as with USAID-Islamabad and Kabul officials.
- Visits to the U.S. One of the goals for Dr. Tamimi's visit and the follow-on visit by the Project Director is to assist the Badia Programme to prepare for visits by faculty and professionals from the key Jordanian institutions working in wastewater and bio-solids re-use projects. Individual faculty members from the Technical Assistance Team for Jordan will be preparing definitions of involvement and commitment of time, laboratories, and personnel. The visits are projected to take place in the fourth quarter.
- Reports anticipated. Ms. Dima Kayed's Laboratory Assessment Study, Part I, for Jordan will be completed during this period. Dr. Akrum Tamimi will complete his trip report on his findings in Jordan. Dr. Abdul Qayyum will complete the initial short-course descriptions following a needs assessment. Formal needs assessment materials have been provided by Technical Assistance Committee member, Dr. Peter Ffolliott.
- Initiation of bio-solids study. A bio-solids characterization study led by RSS in Jordan will be funded by the Project during this period. Faculty from the UofA Technical Assistance Team for Jordan will comprise the panel for the review of the proposal. It is anticipated that the Badia Programme will provide a pass-through mechanism with its sub-contract for transmission of funds to RSS and for the maintenance of contract supervision by BRDP on behalf of the project.
- The project web site is anticipated to go "live" during this quarter. The site will be designed so that content will become increasingly rich as the project progresses in its various goals. The site will serve as a source of technical information with reports and publications being provided through the site, a source of related links (including that of the IALC site to its member institutions), and a source of news on the latest events undertaken by the project.

Following are sections of the report submitted by the two primary Project components, for Afghanistan-Pakistan, by UIUC, and for Jordan by the Badia Programme with UofA participation.

Afghanistan-Pakistan Activities
Quarterly Report-II
Sustainable Development of Drylands Project
IALC-UIUC

Introduction:

February 2003 travel to Pakistan and Afghanistan by the Survey/Planning Team, as mentioned in the previous quarterly report, did not materialize due to travel warnings. It was nonetheless a productive quarter for this component of our Project, especially for the Field Office in Peshawar, Pakistan.

Dr. Abdul Qayyum Khan, Director of the Illinois Field Office, made significant progress on a number of fronts. Office space on the NWFP-AU campus was committed to our Project by the University's Vice Chancellor, Dr. Syed Iqbal Shah. At the close of the quarter, we had neared completion in the process of establishing an account at Standard Chartered Bank in Peshawar. This account will give Dr. Khan a source of funds to cover field office operations. These physical and logistical arrangements that are now in place will provide valuable support to students and trainees from Afghanistan when they begin to arrive in Peshawar, as well as to Home Office personnel when they are in Pakistan on TDY assignments.

Activities of this period (January 1, 2003 – March 31, 2003):

During this quarter, Dr. Khan delivered two documents representing considerable time spent in discussions with faculty and staff of the NWFP-AU. These documents are designed to meet critical information needs during the immediate period ahead. Those two pieces of work are:

1. The "Capability Statement of the NWFP Agricultural University – Peshawar", a 23-page document which was prepared specifically for the IALC Sustainable Development of Drylands in Asia and the Middle East Project. This describes in considerable detail the training opportunities that are available to agricultural personnel from Afghanistan. This statement presents the training programs that are available both on campus and at the network of 12 commodity-oriented off-campus research stations. The opportunities that are detailed in this report cover the full range of specialized, short-term, hands-on programs at research stations, continuing through the gamut to doctoral programs; all of which deal with a wide assortment of agricultural disciplines. Delivery of this Capability Statement coincided with the March 5-6 meetings of the IALC Technical Advisory Committee (TAC) and the Board of Directors which was reviewed and discussed. When the final version of the Capability Statement is ready, this will also be made available on the project web site.

2. The second document came in response to a request from the Technical Advisory Committee. At their March 5 meeting, while reviewing the Capability Statement, that committee requested detailed cost information on the short-term training courses that were suggested and presented. Dr. Khan responded by undertaking further discussions with the NWFP-AU faculty and staff. He then produced a detailed budget for each of the seven short courses that were described in the Capability Statement. Along with this, he gave his recommendations on priorities in short term training. Dr. Khan also provided Terms of Reference (TOR) or brief outline of the topics for each course. The TOR will be put in the hands of each short course instructor, to give them a clear description of the subject matter to be covered, evaluation procedures to be used, reports to be delivered, training manuals and other items to be carried back to Afghanistan by short course participants. Both Dr. John Santas and Project Director, Bob Freitas, have provided input to this document. Additionally this information has been shared with TAC members, so they know that Dr. Khan and the UIUC based project personnel have responded to their requests and questions.

An important part of this project is the outreach effort of explaining project goals and objectives. Some time this quarter was given to informing key individuals and organizations, so they will be aware of the IALC and UIUC role in the rebuilding of Afghanistan's agriculture. This effort can also reap benefits of becoming more aware of the local situations in both Afghanistan and Pakistan -- which will have a strong bearing upon the success of this project. A few illustrative examples of these types of communications would be the following:

- Ishaq Shahryar, Ambassador of Afghanistan to the U.S., was briefed on our training project during a meeting in Washington in late January.
- At that same time, Asaf Khan, Attache for Educational Affairs at the Embassy of Pakistan was briefed on this Project and its historical evolution.
- During his March 6 visit to the University of Illinois, Ashraf Jehangir Qazi, Ambassador of Pakistan to the U.S., was briefed on our Project.
- Hiram Larew, Director of International Programs in CSREES/USDA, was given information to add to his database and summary on Land Grant University activities in Afghanistan.
- Information has been shared with selected Illinois faculty who served long term assignments in Pakistan during the life of the TIPAN Project. The counsel of these seasoned technical assistance personnel has been helpful.
- Contact has been made with Larry Morgan, who provides leadership for Chemonics International activities in Afghanistan and has a great deal of experience in this country. This will foster coordination of project efforts.

Activities Planned for the following period (April 1, 2003 - June 30, 2003)

If travel warnings remain in place for U.S. personnel during the upcoming quarter, we will ask Dr. Khan to travel to Kabul; where he could present the above-mentioned documents to the AID Mission. This would lead to decisions on who will be selected for training in the NWFP and what types of training will be delivered. This would allow Dr. Khan to begin work on a formal Training Needs Assessment. A training needs assessment was suggested by members of the TAC during the March 5th meeting and followed up with provision of training needs materials by TAC member, Dr. Peter Ffolliott. These materials were developed under a Foreign Agricultural Assistance grant to the University of Illinois and the University of Arizona in the early to mid-nineties.

Because we are in the fortunate position of having a Field Office in Pakistan and a representative in the field, we can be more proactive at a time when regional events would otherwise cause serious delays. Dr. Khan deserves our gratitude for his contributions to our Project and our support as he continues to represent us.

Looking ahead to the next quarter or the next six months, we need to work on filling the void in the area of a Training Needs Assessment. This void was pointed out by Dr. Khan in the Capability Statement, then reinforced by TAC members at their March 5 meeting. Questions about “Target Groups”, and “What kind of training is needed and who will receive that training” will continue to surface and must be answered. Hopefully, the Planning/Survey Team can address that question as a foursome, on the ground in Pakistan and Afghanistan in the near future.

Planning for training courses will move forward in the third quarter, while actual training is anticipated to begin in the fourth project quarter. It is expected that the training courses to be offered will be based in large part upon the Capability Statement document prepared by Dr. Qayyum and Dr. Santas.

Jordan Activities
Quarterly Report-II
Sustainable Development of Drylands Project
IALC-BRDP

Introduction:

Jordan faced considerable difficulties during this period. Jordan is a neighboring country of Iraq and considerable stress was imposed upon project activities in the prelude to the war and during the first half of the conflict. All U.S. based contractors were ordered to leave, including PA Consulting, with whom the BRDP was implementing various project components which include reclaimed water re-use at Wadi Musa. This has had direct bearing upon the IALC Drylands project's intention to coordinate activities with BRDP and PA consulting.

Activities of this period (January 1, 2003 – March 31, 2003):

1. The Wadi Musa reclaimed water reuse sub-contract was signed in January with PA consulting (USAID-Amman funded). A separate sub-contract with the IALC (USAID-Washington funded) was signed that will facilitate support for the additional studies required within the dry lands sustainable development Project. Presently, the Wadi Musa site is under-going vegetation and socio-economic surveys. Reports of these surveys have been brought close to completion during this period. The surveys will provide direction for the expected activities on the Wadi Musa site, particularly the integration of the local community in the reclaimed water reuse. Plans are being made to start work on the 5 ha. demonstration site which has had the topographic survey completed. The demonstration site will house the project personnel who will serve to carry out activities such as: training, extension, and monitoring of the local people attitudes towards using reclaimed water and of their cropping activities.
2. Regarding the Sustainable Development of Drylands (SDD) Project, a technical team has been designated to formulate and execute activities related to the SDD objectives. This team will be composed of BRDP staff and academia with one of the tasks being the coordination at national and international levels of on-going activities. It is important to note that a set of priority areas to work with the IALC technical assistance teams in Jordan has been identified through efforts by the BRDP and USAID-Amman. There is a need to coordinate with the Reclaimed Water Reuse managers at the three pilot areas chosen in Jordan, which are: Wadi Musa; Irbid/JUST, led by Dr. Ziad Al-Ghazawi; and the Aqaba Special Economic Zone Authority (ASEZA), led by Dr. Billal Bashir. Efforts are being made to avoid overlap and inconsistencies, as well as to maximize benefits through a common approach. It should be recognized, however,

that each site has its own specific climatic, geographic, soils, and cultural characteristics which require tailoring to match the specific demonstration sites.

3. SDD technical assistance for the Wadi Musa Project:
The technical assistance provided by BRDP is in process. Through various discussions, it was found that there is a lot in common with the demonstration site objectives at Irbid/JUST of:
 - a. Crop marketing studies and techniques,
 - b. Networking with a similar models,
 - c. Trials of new cash crops,
 - d. Trials of some ornamental/non-food plants
 - e. Trials of flower cropping.

In view of the linkage that has been created between this Project and the Reclaimed Water Reuse (RWR) Project in Jordan, which are both financially supported by the USAID, the initial phase of this Project has been dedicated to the complementary activities with RWR.

Many of those activities have been synchronized so far to achieve maximum benefits of utilization of staff and materials. The coordination role of the BRDP between the parties involved has been very successful, starting with the PA Consulting that has been awarded the contract for RWR, the IALC which was awarded the contract for SDD, the subcontractors: BRDP, JUST and Aqaba/ASEZA.

Activities Planned for the following period (April 1, 2003 – June 30, 2003):

The following activities have begun in the current period and will be completed during the following period:

1. Jordanian Laboratory Capabilities: A visit by Ms Dima Kayed to Jordan from U of A was planned and facilitated towards the end of the current quarter by the BRDP. Dima visited the RSS; WERSC; and NCARTT laboratories in Jordan to assess the laboratories capabilities in providing sample analysis for the the technical work proposed for the Biosolids proposal and other follow-on studies. The formal report will be submitted by Ms. Kayed in support of this activity in the following period.
2. SOW for the SDD Project: A suitable SOW for the SDD Project was developed in close coordination with Dr Amal Hjazi from the USAID mission in Amman. This scope of work outlines the necessary priorities to operate in Jordan linking the three pilot sites: JUST; Wadi Musa and Aqaba/ASEZA. The SOW lays an outline for the future road map for the Project in an abstract form, identifying priority steps in each site, and the partners that will implement various activities. The IALC project will

respond to this framework with details of its capacity to accomplish and address these priority activities.

3. **Biosolids:** The Environmental Research Centre at the Royal Scientific Society (ERC/RSS) presented a proposal to the Ministry of Water and Irrigation of Jordan (MWI) during the year 2002. This proposal reached PA Consulting in late 2002 as a draft to look into the possibility of integrating and financing through the RWR. A copy was passed on to the director of BRDP with a remark that it can not be financed by the present contract of RWR, hence the concept of biosolids characterization treatment and application was introduced to the SDD Project as a complementary activity. The IALC undertook a review of the proposal and submitted a number of suggestions from the review panel for substantive changes. Subsequently, a meeting took place in San Antonio, Texas, USA, during the IALC-RADAC meetings, between Prof. Shatanawi and Project Director Freitas which started an initiative on a technical level to seek a means to fund a study on biosolids. The ERC director Dr Bassam Hayek and his staff worked on a suitable proposal, changing the scope and the size to fit the SDD Project funding capability. Recently in a meeting with Dr Hayek of RSS, BRDP Director Shahbaz recommended to the IALC Project Director that start-up of this component be pursued without delay, once final approval is given of the proposal. As a result of these efforts, during the follow-on period, the IALC SDD project expects to fund this project.

Generally, if properly done, biosolids recycling in certain crops can tend to enhance pilot activities in RWR. If done with the proper controls, biosolids can be applied advantageously to crops and serve as another alternative resource, rather than be considered a waste and only as a by-product of the wastewater treatment process.

4. **Design the visitors centre at Wadi Musa pilot site:** In a late development with regards to the coordination that is on going with the USAID Mission in Amman, it has been suggested that the SDD project management group to be asked to provide a concept and plans for a visitors centre at the RWR Wadi Musa site. The visitors centre will serve as an extension and product display point for the site. The centre will likely include a tourism component matching the prevailing potential of the ancient city of Petra which is in the nearby vicinity. It is believed that the funding of this initiative will come from USAID. Additional development of this concept is needed and will be undertaken in the follow-on period.
5. **TEEAL Library:** Project Director suggested to the WERSC and JUST the benefits of the acquisition of two sets of The Essential Electronic Agricultural Library, one for each cooperating university. The purpose of acquiring TEEAL is to allow both institutions to compete more

successfully for a broad range of grants, and especially those dealing with wastewater re-use and bio-solids. Neither institution has been able to compete previously with other comparable regional institutions, so this should help in the research effort to improve the literature reviews and methodologies proposed for studies of wastewater and bio-solids re-use. Although there is justifiable concern about the cost of these sets (\$30,000), the value of the information is unquestionable. Further discussions will continue during the follow-on quarter, especially with regards to ascertaining if the sets are networkable. If the sets are able to be networked, fewer sets may need to be purchased and the resource more effectively shared.

6. Dr Akrum Tamimi's visit to Jordan: Regarding the start up of the biosolids component it has been suggest by the IALC SDD Project Director to involve Dr Tamimi from UofA to advise and assist in the biosolids proposal development, as well as review of the other project components during his time in Jordan. Another objective will be to initiate discussion on project proposal ideas from the various cooperating institutions. The BRDP's view is that Dr Tamimi's visit during the upcoming period will be very useful if he can assist in the realization of the SOW topics, starting with the formulation of a suitable framework and follow this by working on a plan of action with the parties involved. Dr Tamimi's visit to Jordan will be facilitated by the BRDP and a suitable schedule will be structured, particularly allowing sufficient time for assistance in the biosolids study.