

Sustainable Development of Drylands
in Asia and the Middle East:
Jordan Component

Visit Report
December 15 to 19, 2003
Prepared

by

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Table of Contents

Table of Contents 2

I. Introduction 3

II. Wadi Mousa Visitor’s Center 3

III. The Essential Electronic Agricultural Library, TEEAL 5

IV. Proposal for Characterization of Effluent 6

V. Rusayfeh Cleanup Project 6

VI. Mafraq WWTP Reuse Demo Site 7

VII. Recycle Water Balance Study at Aqaba 7

VIII. Conclusion 7

Appendix A

I. Introduction

As project coordinator, Dr. Tamimi visited Jordan during the period of December 15, 2003 and December 19, 2003. While in Jordan two members of the Technical Assistant Team: Dr. Peter Waller and Dr. Ramzi Touchan were present in Jordan. In addition, the landscape graduate student, Dr. Erin Addison, was present to work on Wadi Mousa Visitor's Center project.

Dr. Tamimi's visit had the following objectives:

- 0) Discuss the Visitor's Center at Wadi Mousa with Engr. Mohammed Shahbaz and graduate student Dr. Erin Addison and prepare an action plan.
- 0) Work closely with Engr. Shahbaz and Dr. Saad Al-Ayyash to complete project reports: July 1 to September 30 quarterly report; a short report for October and another for November.
- 0) Discuss new sub-contract with Engr. Shahbaz so as to get it finalized
- 0) Visit U of Jordan or JUST to check TEEAL and give requested training to librarian at JUST. Also prepare a report on the issue.
- 0) Meet with WERSC at U of Jordan: Dr. Shatanawi and Dr. Fayyad, to initiate a proposal for the characterization and utilization of the recycled effluent at Wadi Mousa, Aqaba, and later for Mafraq WWTPs and having split sampling tested at JUST.
- 0) Meet with Engr Shahbaz and Dr. Hijazi to discuss Rusayfeh project
- 0) Report on activities and project status to Dr. Amal Hijazi at USAID/Amman
- 0) In cooperation with Dr. Pete Waller, initiate Mafraq integrated reuse of recycled water and biosolids, investigate reuse site and prepare a proposal for funding.
- 0) In cooperation with Dr. Pete Waller, initiate recycled water balance and reuse study at Aqaba in conjunction with the Aqaba reuse master plan.
- 0) Meet with Dr. Ramzi Touchan and facilitate his contacts in Jordan with the different ministries and research centers to collect as much instrumental and historical data as possible to be used for predicting extreme drought events.

I. Wadi Mousa Visitor's Center

The approval from Petra Regional Authority, PRA, was discussed and Mr. Shahbaz indicated that the subject was referred to Dr. Abu Hudaib from PRA and he is expecting a letter from the

Ministry of Antiquity to be provided for the approval of the use of the designated site to construct a Visitor's Center in that location.

A profile of the architect, Mr. Shahel Al-Hiyari was discussed. In addition a scope of work was assigned to Dr. Addison to complete and pass along to Mr. Al-Hiyari for pricing purposes. The Scope of Work was completed and Mr. Al-Hiyari submitted a price for the services requested in the Scope of Work that was discussed and approved by Mr. Shahbaz and Dr. Tamimi.

The Scope of Work specifically requested pricing for the following three tasks:

- Site analysis and initial design sufficient on which to base Engineering contractors' bids
- Final architectural plans.
- Site visits and supervision to assure delivery of the designed structure

Mr. Al-Hiyari provided pricing for more tasks than requested. This was discussed by Mr. Al-Hiyari and a request to lower his fees was requested by Dr. Tamimi.

Maps with different scales for the Wadi Mousa Visitor's Center site and surrounding areas were obtained by Dr. Addison from the Royal Geographic Society with the help of Dr. Saad Al-Ayyash from BRDP.

A presentation by Dr. Addison was given for the project and Engr. Shahbaz and Dr. Addison drew a timeline for the execution of the different tasks. This will be provided by Dr. Addison in her exit report.

The preparation of the tender documents for the Visitor's Center was discussed and it was recommended that BRDP will solicit prices for providing such a service. One of the organizations that will be invited to bid will be the Royal Scientific Society, RSS: Building Center.

The work of the architect and tender documents preparation will be funded by IALC/The University of Arizona through a subcontract to BRDP who will subcontract these services to the architect and to RSS Building Center.

It should be mentioned here that an environmental impact assessment was completed for Wadi Mousa WWTP and the demo site. The same environmental impact assessment can be used for the construction of the Visitor's Center at Wadi Mousa that might be requested by USAID for the actual construction of the this center. A copy of the study is at BRDP and a copy should be given to Dr. Tamimi. BRDP is still looking for the study.

III. The Essential Electronic Agricultural Library, TEEAL

Dr. Tamimi visited the University of Jordan to check on TEEAL and see if they have any problems using it. It was discovered that TEEAL has been installed on a PC and located in an office close to the Water and Environmental Research and Study Center, WERSC. Students and faculty members can access the library by request where they can search and obtain abstracts of published research. Then the researcher can select specific articles in the journals and print their full text. No logging book for usage was being used and Dr. Tamimi requested from Dr. Mannar Fayyad, the Head of WERSC, to start a logging book to gather usage information. Dr. Fayyad indicated that TEEAL has been an excellent resource for students and researchers at the College of Agriculture and she thanked Dr. Tamimi for providing such an important source of published research papers.

Dr. Tamimi visited Dr. Ziad Ghazawi at Jordan University for Science and Technology, JUST to investigate the use and utilization of TEEAL. Dr. Ghazawi accompanied Dr. Tamimi to the University Medical Library and introduced him to Mr. Issa Lallo, the Library Director and to Mr. Mahmoud Ali Othmanneh, the Head of Databases Department.

The data base department assists in the use of full text databases on the internet. TEEAL has been stored in the shipping boxes and was never used. Dr. Tamimi installed the engine program on one of the computers at the database department and demonstrated to the staff the use of the software and conducted different searches on the topic of wastewater and reuse and printed about 12 published papers for demonstrations purposes.

Manny issues were raised by the database head. One of which is the loss of one or more of the CD's during the use by a student or a researcher. In addition, the location and the order of the 200+ CD's that contain the full text articles. If TEEAL is going to be used by all students and researchers who visit the database department for searching full text journals a loss of significant number of CDs will occur.

Dr. Tamimi promised to ask TEEAL at Cornell, through Mr. Freitas at IALC/The University of Arizona if it is possible to make one copy of the CDs for backup purposes. Another question for TEEAL is if it is possible to put the CDs on a hard disk on one computer for an easier access to the journals instead of shoveling back and forth the different CDs requested to be inserted by the search software.

Dr. Tamimi promised JUST librarian to recommend a method of usage for the TEEAL at the library based on the answers of the two questions listed above for Mr. Freitas.

IV. Proposal for Characterization of Effluent

Dr. Tamimi met with Dr. Mannar Fayyad at WERSC, U of Jordan. Dr. Shatanawi was out of the country at that time. The idea of initiating a proposal for the characterization and utilization of the recycled effluent at Wadi Mousa, Aqaba and later for Mafraq WWTPs and having split sampling tested at JUST were discussed with Dr. Fayyad.

During the meeting an outline for the proposal was put together and a copy of the outline is provided in appendix A of this document.

When this proposal was presented to Dr. Amal Hijazi at a later date, it was indicated by Dr. Hijazi that there is no need for such a proposal and she will not approve of such an activity. Dr. Tamimi indicated to Dr. Hijazi that this activity is item 4 of the Cooperative Agreement, CA, for year 1 of 4 years the life of the Sustainable Development of Drylands project. It was also indicated to her by Dr. Tamimi that this CA was presented to her and to Mr. James Franckiewicz by Mr. Freitas. Dr. Hijazi requested a copy of the CA and was provided with one.

The reason given by Dr. Hijazi for not supporting such an activity is that Water Authority of Jordan, WAJ, labs are conducting such characterization on regular basis.

It is the author's belief that this activity is essential for the success of the reuse activities in Jordan. WAJ is the owner and the operator of all the WWTPs in Jordan and an independent organization needs to assess the characteristics of the effluent at the WWTPs in Jordan and especially the ones IALC/The University of Arizona and its Jordanian partners are conducting activities in them.

The split sample testing at JUST was discussed with Dr. Ziad Ghazawi. Dr. Tamimi indicated to him that it is essential that all testing of samples be performed at JUST. Dr. Tamimi requested from Dr. Ghazawi to indicate if JUST is capable of performing the characterization tests.

The next step for IALC/The University of Arizona is to provide JUST with a list of the tests that will be performed to determine if they can perform such tests. The proposal outline presented in Appendix A needs to be approved by IALC/The University of Arizona for further development of the proposal by Dr. Tamimi and in cooperation with WERSC.

I. Rusayfeh Cleanup Project

During the meeting between Dr. Tamimi, Dr. Hijazi and Engr. Shahbaz, the Rusayfeh clean up project was discussed and the report provided by the Mayor of Rusayfeh was presented and discussed. In the middle of the discussion, Dr. Hijazi requested to postpone working on this project. Both Dr. Tamimi and Engineer Shahbaz agreed to postpone this project for a later time.

I. Mafraq WWTP Reuse Demo Site

Dr. Tamimi and Dr. Waller visited Mafraq WWTP and spent a few hours touring the proposed demo site. For further information on the Mafraq WWTP, please consult “Mafraq Wastewater Treatment Plant and Reuse Report”, prepared by Dr. Akrum Tamimi on July 18, 2003.

A proposal to implement a demo site at the reuse area of the WWTP was completed by Dr. Tamimi and Dr. Waller. This proposal will be provided by Dr. Waller as part of his report for his visit during December, 2003.

Dr. Tamimi requested updated information on the Mafraq WWTP from Dr. Ramzi Sabbella, USAID mission in Amman. Dr. Hijazi called Dr. Tamimi and requested that all visits to Mafraq WWTP be cancelled due to the fact that construction of the new WWTP is under bidding. The bidding process will be finished sometime around April 2004. Dr. Hijazi does not want to give any signals or impressions to any of the contractors that the reuse project will be given to BRDP or to IALC/The University of Arizona or anyone else.

It is believed that the proposal started by Dr. Tamimi and Dr. Waller will be finalized and completed and submitted for funding.

All scheduled visits to Mafraq WWTP scheduled for Dr. Erin Addison, Ms. Karen Vitkay and Ms. Susan O'Shaughnessy were cancelled by Dr. Tamimi.

I. Recycle Water Balance Study at Aqaba

In cooperation with Dr. Pete Waller Dr. Tamimi initiated an outline for recycled water balance and reuse study at Aqaba in conjunction with the Aqaba reuse master plan. This study will be provided by Dr. Waller and his visit to Aqaba was based on the outline prepared before Dr. Waller traveled to Aqaba.

I. Conclusion

Most of the objectives indicated at the beginning of this report were met. However, working with BRDP on getting the 3rd quarterly report was not accomplished.

Appendix A

Proposal Outline

Effluent Monitoring at
Wadi Mousa and Other Wastewater
Treatment Plants
In Jordan

Draft Proposal

Effluent Monitoring at Wadi Mousa Wastewater Treatment Plant and Other
Wastewater Treatment Plants

I. Introduction

II. Background

- 0. Sustainable Development of Drylands in Asia and the Middle East: Jordan Component**
- 0. Wastewater Treatment Plants Proposed for testing**
 - . Design Criteria
 - . Treatment methods and processes
- 0. USAID Reuse Implementation Project**

III. Participating Jordanian Institutions

- 0. Water and Environmental Research and Study Center, WERSC**
 - . Equipment
 - . Previous Experiences
 - . Staff
- 0. Jordan University for Science and Technology, JUST**
 - . Equipment
 - . Previous Experiences
 - . Staff

IV. Objectives

- 0. Capacity Building for WERSC and JUST for such monitoring program**
- 0. Create a database to be used for Standards Revision**

V. Methodology

- 0. Sampling and Analysis**
- 0. Split Samples**
- 0. Standard Tests Used**
- 0. Monitored Parameters**
 - . Physical**
 - . Chemical**
 - . Biological**
- 0. Sampling Frequency**
- 0. Data Evaluation and Presentation**
- 0. Data Storage and Dissemination**
 - . IALC / The University of Arizona Website**
 -) Password Protected**
 -) Accessible to Jordanian Partners**

VI. Budget

0. Price List for Sampling

1. Price List for testing the different parameters