



THE HASHEMITE KINGDOM OF JORDAN



MINISTRY OF WATER & IRRIGATION

JORDAN VALLEY AUTHORITY



**UNITED STATES AGENCY
FOR INTERNATIONAL DEVELOPMENT (USAID)**

Jordan Valley Preliminary Land Use Master Plan Project

Planning Process and Architectural Design Guidelines

Volume 2 of 5

Contract No.:	278-O-00-04-00212-00
Contractor Name:	USAID/Jordan
USAID Cognizant Technical Office:	Office of Water Resources & Environment USAID/Jordan
Date of Report:	August 2004
Document Title:	<i>Jordan Valley Preliminary Land Use Master Plan Project Planning Process and Architectural Design Guidelines - Volume 2 of 5</i>
Author's Name:	<i>Consolidated Consultants Engineering and Environment</i>
Project Manager:	<i>Ramzi Kawar</i>

This report was prepared by Consolidated Consultants Engineering and Environment, with project management by Ramzi Kavar, contractor to the U.S. Agency for International Development in Jordan.

Table of Contents

Table of Contents	i
Annexes	v
List of Tables.....	v
List of Figures	v
Acronyms	vi

Final Land Use Report - Volume 1 of 5

Executive Summary.....	1
1.0 Introduction	13
1.1 Organization of the Land Use Report	15
2.0 Project Vision, Goals, and Objectives: Water Conservation and Environmental and Economic Sustainability	16
3.0 Planning Methodology	17
3.1 Participatory Planning Strategy	17
3.2 Technical Scope of Work	18
4.0 Baseline Assessment of Existing Conditions	20
4.1 People and Communities – Participation and Socioeconomic Characteristics	20
4.2 Environmental Resources	33
4.3 Cultural Resources	57
4.4 Water Resources	65
4.5 Agriculture	87
4.6 Industry	93
4.7 Tourism Resources	98
4.8 Public Infrastructure	104
5.0 Proposed Preliminary Land Use Recommendations.....	125
5.1 Legend	126
5.2 Functional Relationships Analysis	128
5.3 Land Use Selection Criteria	146
5.4 Sustainable Environment and Economy	148
6.0 Framework for a Fish Farming Pilot Project	158
6.1 Global Aquaculture	158
6.2 Jordanian Aquaculture	158
6.3 Karamah Fish Farm RFP and Pilot Project	160
7.0 Policy Recommendations	163
7.1 Conservation and Promotion within the Government	163
7.2 Architectural and Design Guidelines	163
8.0 Phase III – JVA Recommended Action Items	167

Planning Process and Architectural Design Guidelines - Volume 2 of 5

1	Project Goals and Objectives.....	1
1.1	Organization of the Land Use Report	2
2	Planning Process And Participatory Analysis	3
2.1	Planning Strategy	3
2.2	Performance Indicators in Support of Proposed Land Uses	10
2.3	Participatory Analysis	18
3	Architectural Design Guidelines.....	34
3.1	Introduction	34
3.2	Key Characteristics of Architectural Character	35
3.3	Building Scale and Massing	36
3.4	Design Details	36
3.5	Secondary Structures	37
3.6	Exterior Colors	37
3.7	Exterior Materials	37
3.8	Courtyards	38
3.9	Roofs	38
3.10	Windows	39
3.11	Doors	40
3.12	Building Facades	41
3.13	Side and Rear perimeter Walls and Fences	41
3.14	Retaining Walls	41
3.15	Building Setback	42
3.16	Service Areas	43
3.17	Development Intensity	43
3.18	Cultural Heritage Protected Zones	45
3.19	Touristic Roads	46
4	References	47
4.1	References of Architectural Design Guidelines	47

Social, Transportation, and Economic Assessment - Volume 3 of 5

1	Project Goals and Objectives.....	1
1.1	Organization of the Land Use Report	2
2	Social Assessment	3
2.1	Population	3
2.2	Focus Groups	5
2.3	Summary of Focus Group Discussions	8
2.4	Summary of Land Use Requirements	10
2.5	Analysis of Questionnaire	10
2.6	Needed Projects	13
2.7	Training Needs	13
2.8	Analysis of Focus Group Discussions in the South, Middle and North Ghor	13
3	Transportation.....	15
3.1	Roads	15
3.2	Public Transport	30

4	Economic Conditions	34
4.1	Agricultural Sector	34
4.2	Tourism Sector	38
4.3	Water Competition between Agriculture and Tourism	41
4.4	Industrial Sector	42
5	Fish Farming in Jordan	46
5.1	The Jordan Valley “Taloubi” Fish Farm	46
5.2	Small Farmers and Fish Farming	47
6	References	48
6.1	References of Social Assessment	48
6.2	References of Transportation	48
6.3	References of Economic Section and Fish Farming in Jordan	48

Environmental Assessment, Dead Sea Carrying Capacity and Archaeological Assessment - Volume 4 of 5

1	Project Goals and Objectives.....	1
1.1	Organization of the Land Use Report	2
2	Environmental Assessment.....	3
2.1	Introduction	3
2.2	The Biological Environment	4
2.3	Grazing in the Valley	31
2.4	Woodcutting in the Valley	32
2.5	Planned Conservation Projects	33
2.6	Comments on the Fish Farming Pilot Project in the Valley	34
2.7	Environmental Threats	34
2.8	Recommendations	36
2.9	Laws	38
2.10	Policies	38
3	Dead Sea Carrying Capacity.....	39
3.1	Introduction	39
3.2	Estimation Methodology	39
3.3	Results	45
3.4	Conclusion	45
4	Archaeology.....	47
4.1	Salient Archaeological and Cultural Heritage Sites in the Valley	47
4.2	Threats and Challenges	50
4.3	Recommended Conservation Measures	50
5	References	54
5.1	References of Environmental Assessment	54

Geologic Assessment, Water Resources and Agricultural Resources - Volume 5 of 5

1	Project Goals and Objectives.....	1
1.1	Organization of the Land Use Report	2
2	Geology of the Jordan Valley and Geotechnical Considerations	3
2.1	General Geology for the Study Area	3
2.2	Soils of the Jordan Valley	9
2.3	Geotechnical Consideration	9
3	Water Resources	12
3.1	Water Resources Analysis	12
4	Agricultural Assessment.....	34
4.1	Introduction	34
4.2	Jordan Water Resources	35
4.3	The Study Area	36
4.4	Justification For Land Use Planning	36
4.5	Methodology Of Land Use Planning	37
4.6	Land Use Plan	38
4.7	Soil and Groundwater Pollution	78
4.8	Summary	80
5	References	86
5.1	References of Geological Assessment	86
5.2	References of Water Resources	86
5.3	References of Agricultural Resources	86

Annexes of Volume 2 of 5

Annex 1	Project Information Management (Collected Bibliography and Data)
Annex 2	Interview Records
Annex 3	Record of Minutes of Meeting
Annex 4	Land Use Matrix
Annex 5	List of Invitees, Invitation Letter and Focus Groups Questionnaire
Annex 6	List of Participants and Conclusions at the Three Focus Groups Sessions

List of Tables of Volume 2 of 5

Table 1: Proposed Land Use Activities	8
Table 2: Criteria and Weighting Scores for a Land Use Evaluation System for a Sustainable Jordan Valley Preliminary Land Use Matser Plan.....	10
Table 3: Jordan Valley South Focus Group List Of Participants	20
Table 4: Jordan Valley Middle Focus Group List Of Participants	23
Table 5: Jordan valley north focus group list of participants	29
Table 6: Architectural Design Guidelines – Jordan Valley	45

List of Figures of Volume 2 of 5

Figure 1: Sample pictures from the photo survey.....	4
--	---

Acronyms Or Abbreviations

AMIR	Achievement of Market Friendly Initiatives and Results Program
a.s.l	Above Sea Level
b.s.l	Below Sea Level
BMPs	Best Management Practices
CC	Consolidated Consultants Engineering & Environment
CDG	Community Development Group
CIDA	Canadian International Development Agency
CMI	Chesrown Metzger International
CSBE	Center for the Study of the Built Environment
DOA	Department of Antiquities
DOS	Department of Statistics
EA	Environmental Assessment
EIS	Environmental Impact Statement
EU	European Union
FOE	Friends of the Environment
FoEME	Friends of the Earth Middle East
FTA	Free Tourism Area
GIS	Geographic Information System
GTZ	German Aid Agency
IBA	Important Bird Area
IUCN	International Union for the Conservation of Nature
JEPAFV	Jordan Exporters and Producers Association for Fruits and Vegetables
JES	Jordan Environment Society
JIB	Jordan Investment Board
JSDCBD	Jordan Society for Desertification Control and Badia Development
JTB	Jordan Tourism Board
JVA	Jordan Valley Authority
JVA IAS	Jordan Valley Authority Irrigation Advisory Service Unit
KAC	King Abdullah Canal
KAFA'A	Knowledge and Action Fostering Advances in Agriculture
KTD	King Talal Dam
LRD	Department for Lands and Rural Development
MCM	Million Cubic Meters (water)
MJVSA	Middle Jordan Valley Study Area
MOA	Ministry of Agriculture
MOE	Ministry of Environment
MOP	Ministry of Planning
MOT	Ministry of Transport
MOTA	Ministry of Tourism and Antiquities

MPWH	Ministry of Public Works and Housing
MWI	Ministry of Water and Irrigation
NCARTT	National Center for Agricultural Research and Technology Transfer
NTSI	National Tourism Strategy Initiative
NEAP	National Environmental Action Plan
NEF	Near East Foundation
NGO	Non-governmental Organization
NJVSA	Northern Jordan Valley Study Area
QIZ	Qualified Industrial Zone
RSCN	Royal Society for the Conservation of Nature
RSDS	Red Sea to Dead Sea Canal or Pipeline Project
SJVSA	Southern Jordan Valley Study Area
SWOT	Strengths, Weaknesses, Opportunities and Threats
TFR	Total Fertility Rate
UFW	Unaccounted for Water
USAID	United States Agency for International Development
WAJ	Water Authority of Jordan
WCA	Water Conservation Association
WTO	World Tourism Organization

1 PROJECT GOALS AND OBJECTIVES

The Jordan Valley is Jordan's premier agricultural production area. The mild winters in the valley, which are due to the predominant below-sea-level (b.s.l.) elevations, provide great potential as a natural greenhouse for the production of high-value off-season fruits and vegetables. In addition to the significant agriculture, the Jordan Valley, including the Dead Sea, contains environmentally sensitive ecosystems and coastline, industrial areas, human settlements, and important cultural and natural sites which should be protected and linked for tourism development. These geographic areas are important to the creation of sustainable economic opportunities for Jordan and the region.

The Jordan Valley Authority (JVA) requested assistance to undertake work identified in the Regional Land Use Planning and Land Management Strategy for the Jordan Valley Authority. The United States Agency for International Development (USAID)/Jordan Water SO Office has indicated that it will assist the JVA in the development of a preliminary land use master plan for tourism and commercial/industrial purposes.

The main objectives of the project include:

- 1- Assisting Jordan Valley Authority in physical land use planning needs for the 3 identified zones in the project area; Zone 1: Yarmouk River to the Baptism Site, Zone 2: the Dead Sea area, and Zone 3: the Southern Ghors and Wadi Araba;
- 2- Analyzing the existing land uses including agricultural, industrial, natural and cultural sites; and
- 3- Providing recommendations for appropriate land uses that will allow increasing economic opportunities.

The project area covers the whole mandate of the Jordan Valley Authority, which extends from Yarmouk River in the North to Qater in the South (Wadi Araba); the eastern boundaries are contours 300 and 500 in the area north and south of the Dead Sea, respectively. It should be noted that Umm Qais, which is not within Jordan Valley Authority mandate, has been included in the study due to its importance in establishing the tourism linkages in the area.

On the 19th of February 2004, the United States Agency for International Development (USAID) retained the services of Consolidated Consultants for the Jordan Valley Preliminary Land Use Master Plan Project. The Kick off meeting was held on the 29th of February 2004.

The objective of the Consultant's services as mentioned above is to assess the existing land uses in the project area. The assignment was carried out in three phases. These project phases have been modified from those described in the scope of work so that Phase 1 represents data collection, Phase 2 analysis of existing conditions and establishment of the land use planning, and Phase 3 is related to production of final land use maps for the three zones. Thus, the three phases are as follows:

- **Phase 1** which includes:
 - collecting and disseminating background information and baseline data
 - cross referencing of existing Geographic Information System (GIS) data
 - completing photo survey of the study areas
 - conducting three Focus Groups
 - creating of draft overlay maps of baseline conditions
 - completing interviews
 - participating in the land use planning team workshop
 - presenting baseline findings to client for discussion

- **Phase 2** which includes:
 - analysing the existing conditions in the Jordan Valley
 - creating preliminary drawings (18 A-0)
 - developing design guidelines
 - preparing bibliography of data used for report
 - completing preliminary report text and send copy to project manager and land use planner for editing
- **Phase 3** which includes:
 - informing the team and clients throughout the duration of the project
 - revising text and prepare draft final report with drawings
 - presenting draft final to client
 - revising drawings/ text as necessary layout, printing, binding copies
 - producing the Final Report with overlay land use maps
 - submitting the Final Report to client

1.1 Organization of the Land Use Report

The purpose of the Final Report is to provide the complete details of all work performed, analyses made, and justification of options and recommendations proposed. The Final Report is submitted in five separate volumes which comprise the Land Use Report and the four volumes on the reports by the specialist in the fields of architecture, sociology, transportation, economy, environment, archaeology, geology, and water and agricultural resources. These five volumes are as follows:

- **Volume 1 of 5:** Land Use Report, which is prepared in both Arabic and English languages.
- **Volume 2 of 5:** Planning Process and Architectural Design Guidelines.
- **Volume 3 of 5:** Social, Transportation, and Economic Assessment. This volume also presents a preliminary framework for establishment of fish farms in the study area.
- **Volume 4 of 5:** Environmental Assessment, Dead Sea Carrying Capacity and Archaeological Assessment.
- **Volume 5 of 5:** Geologic Assessment, Water Resources and Agricultural Resources.

2 PLANNING PROCESS AND PARTICIPATORY ANALYSIS

2.1 Planning Strategy

The Preliminary Land Use Master Plan is an interdisciplinary project that draws from a variety of fields such as water resources, agriculture, geology, sociology, environment, economy, transportation, and architecture. Thus, the project's team was made up from a land use planner and a variety of specialists representing the fields to be studied and analysed. The approach followed in this project was as follows:

- 1- Collected background information from all parties who have worked or are still working on the development of the Jordan Valley area and reviewed all planning documents for the JV region as well as interviewed involved parties. Afterwards, the team members analysed existing conditions in the JV in order to define and address the problems, shortages and defects facing the study area.
- 2- Completed a photo survey of the study area, linked the digital photos to the GIS, and cross referenced existing GIS data obtained from the GIS division of JVA.
- 3- Conducted focus groups sessions.
- 4- Held regular meetings with the Client and internal meetings among the team members.
- 5- Held a team charette to discuss land use activities suggested by the Land Use planner and a subsequent meeting among team members to propose additional land use activities.
- 6- Collected and organized existing conditions on assessment maps that includes all zoning information and infrastructure in the study area.

JVA provided the Consultant with background information that was disseminated to all team members. In addition, the team members requested further references and data. The available bibliography from JVA was accordingly updated and is presented in **Annex 1**.

The scheduled interviews were completed and a record of those interviews conducted by the team members is presented in **Annex 2**.

Three focus groups were conducted in the three zones of the project area. Representatives of ministries, municipalities, farmers' cooperation, industries, non-governmental organizations (NGOs), hotels and handicrafts were invited to the focus groups sessions. Participants were divided into three sub-focus groups; tourism and environment, social issues, and water and agriculture group. Each group discussed their concerns regarding the previously mentioned issues. Moreover, questionnaires regarding the social assessment for the Jordan Valley were distributed during the focus groups. Questionnaires were analyzed and the results of the focus groups were presented in the form of a SWOT analysis (i.e., strengths, weaknesses, opportunities and threats) in **Section 2** of this report.

After reviewing the available bibliography, conducting the focus groups sessions and carrying out the requested interviews, the analyses of social, geologic, agricultural, water resources, environmental, economic and transportation conditions in the Jordan Valley were carried out and are presented in the following sections of this draft report.

A preliminary field trip to the Jordan Valley was carried on the 1st of March 2004 with the Project Manager (PM), the Project Coordinator, and the Land Use/Tourism Planner, and Consolidated Consultants (CC) team with the aim of familiarizing the study team with the Jordan Valley and the approach for conducting the photo survey for the preliminary land use plan. After that, field trips were conducted by the Consultant in order to complete the required photo survey. Photos and coordinates of lands and important sites were taken and linked to the GIS maps. This photo survey covered areas from Umm Qais in the north to Qater in the south. It should be noted that Umm Qais, which is not within Jordan Valley Authority

mandate, has been included in the study due to its importance in establishing the tourism linkages in the area. Sample pictures are presented in **Figure 1**.



Figure 1: Sample pictures from the photo survey



Figure 1: Sample pictures from the photo survey (contd.)



Figure 1: Sample pictures from the photo survey (contd.)



Figure 1: Sample pictures from the photo survey (contd.)



Figure 1: Sample pictures from the photo survey (contd.)

Throughout the project, weekly meetings among the JVA Project Coordinator, the PM and CC were held every Wednesday at 10:00 a.m. Other meetings were held as deemed necessary for the project, and according to the allowable level of effort. A record of the minutes of those meetings is presented in **Annex 3**.

In addition, at the start of the project, meetings were held between the land use planner and the study team members in order to ensure a clear understanding of the project activities and follow up on the progress and issues to be done.

Land use activities were proposed and discussed during the team charette. These land use activities were derived from the needs expressed by the local communities that participated in the three focus groups held in the Jordan valley. Based on focus groups, team charette and the specialists' assessments, specific land use activities that can be applied within the study area were identified. These are presented Table 1.

Table 1: Proposed land use activities

No.	Category	Symbol	Area Needed	Number	Location	Comments
1.	Animal Production Icons (AP)					
1.1	Fish Farming	APF	300 dunums/farm	10	Side wadis	Closed System
1.2	Poultry Farms	APP				Not suitable to have such farms in Jordan Valley due to weather conditions (hot temperatures)
1.3	Animal Farms	APA	3,000 dunums/farm	15	Undeveloped lands with potential for natural vegetation	Include a storage house for supplementary feed
1.4	Veterinary Clinic	APV	5 dunums/clinic	6		Short travelling distance
2	Industrial Activities (IA)					
2.1	Light Activities	IAL	200 dunums/activity		At each major community	

No.	Category	Symbol	Area Needed	Number	Location	Comments
2.2	Medium Activities	IAM	2,500 dunums/activity	3	North, Middle and South Jordan Valley	
2.3	Heavy Activities	IAH	500 dunums/activity	3	South Jordan Valley	
2.4	Free Zone	IAF	3,000 dunums/activity	1	Middle Jordan Valley	
3	Educational Institutes (EI)					
3.1	University or College	EIU	200 dunums/site	2	North and South Jordan Valley	
3.2	Vocational/Training Schools	EIV	20 dunums/site	3 already proposed + additional 3		
3.3	Research Centres	EIR	500 dunums/site	1	South of the Dead Sea	
3.4	Schools	EIS	1 dunum/school	Elementary: 8* Secondary : 8*	North and South Jordan Valley	
4	Health Care (HC)					
4.1	General Hospital	HCH	50 dunums/hospital	3	North, Middle and South Jordan Valley	
4.2	Comprehensive Health Centre	HCS	20dunums/centre	6	Two at each of North, Middle and South Jordan Valley	
5	Community Facilities (CF)					
5.1	Landfills and Composting	CFL	500 dunums/site	4	North, Middle and South Jordan Valley and Southern Ghors	
5.2	Treatment Plants	CFT				Already Proposed
5.3	Cemeteries	CFC	1,000 dunum/site	2	North and Middle Jordan Valley	
5.4	Sports Centre	CFS	30 dunums/centre		At each municipality	
5.5	Commercial Zones	CFZ	50 dunums/zone		At each municipality	
5.6	Bus Terminal	CFB	50 dunums/terminal		At each municipality	
5.7	Housing	CFH	500 dunums/comple x	Maybe 4-5	At each municipality	

No.	Category	Symbol	Area Needed	Number	Location	Comments
6	Touristic and Archaeological Parcels (TA)					
6.1	Archaeological Parks and Museums	TAA				
6.1.1	Pella-Tabqat Fahel		1,000 dunums to the North			
6.1.2	Zara		100 dunums			
6.1.3	Naqa' Cemetery		1,000 dunums			To the south
6.1.4	Bab Ed-Dhra		1,000 dunums			Between north border of wadi Karak and the area south of the road till the police station
6.1.5	Baptism Site					To be modified for eco-tourism
6.2	Recreational Touristic Facilities (hotels, camping areas, restaurants, shops-markets, games-boating and glass boats)	TAR	200 dunums/village	5		
6.3	Eco-tourism	TAE				

* South Ghor: Qurayqera to Qater needs 3 elementary schools and 3 secondary schools. Especially Qater needs 1 elementary school and 2 secondary schools.

North Ghor: Kreymeh to Adassiya needs 3 elementary schools and 3 secondary schools, and Khazma and Umm Ayyash need 2 elementary schools and 2 secondary schools (or emphasize continuation of construction of existing school buildings).

2.2 Performace Indcaitors in Support of Proposed Land Uses

Land use criteria presented in **Table 2** were discussed and agreed upon between the study team members and the Land Use/Tourism Planner. These criteria were submitted to the Jordan Valley Authority for their review and were tested by evaluating the activities proposed during the team charette. This evaluation matrix is presented in **Annex 4**.

Table 2: Criteria and Weighting Scores for a Land Use Evaluation System for a Sustainable Jordan Valley Preliminary Land Use Matser Plan

Category	Criteria	Scoring	Impact Score
1. Economic Development Benefit to Community	1.1 Creation of Jobs	* High	+3
		* Moderate	+2
		* Low	+1
		* None	0
		* Low	-1
		* Moderate	-2
		* High	-3
	1.2 Generation of Income	* High	+3
		* Moderate	+2
		* Low	+1
		* None	0
		* Low	-1
		* Moderate	-2
		* High	-3

Category	Criteria	Scoring	Impact Score
	1.3 Development of New Economic Opportunities for Women and Youth	* High * Moderate * Low * None * Low * Moderate * High	+3 +2 +1 0 -1 -2 -3
	1.4 Development Infrastructure	* High * Moderate * Low * None * Low * Moderate * High	+3 +2 +1 0 -1 -2 -3
2. Social Development Benefit to Community	2.1 Poverty Alleviation	* High * Moderate * Low * None * Low * Moderate * High	+3 +2 +1 0 -1 -2 -3
	2.2 Strengthening of Cultural Heritage and Values	* High * Moderate * Low * None * Low * Moderate * High	+3 +2 +1 0 -1 -2 -3
3. Environmental Preservation	3.1 Improvement to Existing Conditions	* High * Moderate * Low * None * Low * Moderate * High	+3 +2 +1 0 -1 -2 -3
	3.2 Environmental Awareness and Promotion Community Stewardship	* High * Moderate * Low * None * Low * Moderate * High	+3 +2 +1 0 -1 -2 -3
4. Historic Conservation	4.1 Site Protection	* High * Moderate * Low * None * Low * Moderate * High	+3 +2 +1 0 -1 -2 -3

Category	Criteria	Scoring	Impact Score
	4.2 Improved Conservation Management	* High * Moderate * Low * None * Low * Moderate * High	+3 +2 +1 0 -1 -2 -3
5. Tourism Development	5.1 Infrastructure Enhanced	* High * Moderate * Low * None * Low * Moderate * High	+3 +2 +1 0 -1 -2 -3
	5.2 Sustainable Tourism Promoted	* High * Moderate * Low * None * Low * Moderate * High	+3 +2 +1 0 -1 -2 -3
6. JVA Benefited	6.1 Improved Land Use Planning	* High * Moderate * Low * None * Low * Moderate * High	+3 +2 +1 0 -1 -2 -3
	6.2 Revenue Generated for Operations	* High * Moderate * Low * None * Low * Moderate * High	+3 +2 +1 0 -1 -2 -3
7. Water Constraints	7.1 Return per cubic meter	* High * Moderate * Low * None * Low * Moderate * High	+3 +2 +1 0 -1 -2 -3
	7.2 Marginal Water Used	* High * Moderate * Low * None * Low * Moderate * High	+3 +2 +1 0 -1 -2 -3

Category	Criteria	Scoring	Impact Score
	7.3 Conveyance System Availability	* High * Moderate * Low * None * Low * Moderate * High	+3 +2 +1 0 -1 -2 -3

Explanation of Weighting Scores:

* High Positive Impact	+3
* Moderate Positive Impact	+2
* Low Positive Impact	+1
* No Impact	0
* Low Negative Impact	- 1
* Moderate Negative Impact	- 2
* High Negative Impact	- 3

Further explanation of the above mentioned weighing scores is presented in the following sub-sections.

2.2.1 Economic Development Benefit to Community

- Creation of Jobs**

Any land use activity that creates high job opportunities was given +3.
 Any land use activity that creates moderate job opportunities was given +2.
 Any land use activity that creates low job opportunities was given +1.
 Any land use activity that has no effect on creating job opportunities was given 0.

- Generation of Income**

Any land use activity that generates high-income was given +3.
 Any land use activity that generates moderate-income was given +2.
 Any land use activity that generates low-income was given +1.
 Any land use activity that has no effect on generation of income was given 0.

- Development of New Economic Opportunities for Women and Youth**

Any land use activity that creates high potential of development of new economic opportunities for women and youth was given +3.
 Any land use activity that creates moderate potential of development of new economic opportunities for women and youth was given +2.
 Any land use activity that creates low potential of development of new economic opportunities for women and youth was given +1.
 Any land use activity that has no effect on development of new economic opportunities for women and youth was given 0.

- Development of Infrastructure**

Any land use activity that creates high potential of development of infrastructure was given +3.
 Any land use activity that creates moderate potential of development of infrastructure was given +2.
 Any land use activity that creates low potential of development of infrastructure was given +1.
 Any land use activity that has no effect on development of infrastructure was given 0.

Note: No proposed land use activity has negative impact on “economic development benefit to community”.

2.2.2 Social Development Benefit to Community

- **Poverty Alleviation**

The simple definition of poverty is **(a state of material deprivation)** caused by lack of job opportunities, financial resources, and lack of qualified manpower especially for college and university graduates.

Poverty alleviation (**positive impacts**) can be achieved through implementing projects which creates job opportunities or through education which provides academically qualified individuals.

So, any land use activity which creates a job opportunity, was given a moderate or low degree because it is not easy for one project to alleviate poverty in a high degree. Training centers or vocational education contributes in a low degree in an indirect way.

On the other hand, no land use activity increases poverty (**negative impacts**).

- **Strengthening the Cultural and Heritage Values**

Strengthening the cultural and heritage values (**positive impacts**) takes place through individual effort with a historical or religious place.

It is noticed that most land use activities do not achieve strengthening of the cultural and heritage values except some tourist projects (near the tombs). So these projects were given only a moderate or low degree.

There were no land use activities which strengthen the cultural and heritage values for the respondents in a high degree.

What weakened the cultural and heritage values (**negative impacts**) is the land use activity which might take place in the border areas between Jordan and Israel which is against the cultural and heritage values for Jordanians at least at the current time.

2.2.3 Environmental Preservation

One of the focal goals for sustainable land use planning is the preservation of environmental resources side by side with the development of economical opportunities. Two main evaluation criteria were identified to judge anticipated environmental effects of the proposed land use activities and those are improvements to the existing conditions, and the environmental awareness and promotion of community stewardship.

- **Improvement to Existing Conditions**

Several environmental settings would be taken into account while judging improvement/deterioration to the existing environmental conditions by any proposed land use activity, including biodiversity, pollution, and physical environmental settings.

Enforcing certain land use activity would either result in improvement to the existing conditions (**positive impact**), or could cause deterioration or risk of deterioration (**negative impact**). Improvements can be achieved through conserving biological habitats, controlling expansion of urban, agricultural and industrial activities over sensitive natural habitat, preventing or controlling sources of pollution (for example, improving waste management and treatment), restoring or rehabilitating deteriorated environment, reducing demand on water resources, reducing public accessibility to

remote areas, and improving the public health and safety measures (for example improving the sanitary and road services).

Deterioration may be witnessed due to the introduction of new sources of pollution (like industries), disposal of solid and liquid waste in non-sanitary conditions, increased demand on water resources and through escalating water harvesting and pumping above the safe-minimum limits which would result in severe deterioration of water quality, change in local geomorphological settings, soil erosion, deterioration of biological habitats, reduced biodiversity, increased accessibility to remote areas, and jeopardizing public health and safety.

It is possible to have the improvement or the deterioration occurring directly or indirectly consequent to the proposed development. The magnitude of change can be high, moderate or low. This magnitude has been judged in a scale from zero to three, where those activities considered to cause high change level were given the highest mark of three out of three, activities anticipated to cause moderate change level were given a mark of two out of three, while low level of change is anticipated, the activity was given a mark of one out of three.

Whenever a land use activity is considered to have no change to the environmental condition, neither improvement (**positive**) nor deterioration (**negative**), this activity was given a mark of zero indicating neutral impact.

In order to differentiate between deterioration and improvement impacts while using the same scale under the same "Improvement to Existing Conditions" parameter (**criteria**), the deterioration is given a value in negative measure.

Since both improvements to some conditions and deterioration to others can occur consequent to one activity, both values were balanced together to end up with one collective evaluation figure.

- **Environmental Awareness and Promotion of Community Stewardship**

The second environmental criterion is the environmental awareness and community stewardship. It is understood that some land use activities would result in either raising the local community environmental awareness level, promoting more community participation and stewardship in managing related environmental settings (**positive impact**), or would negatively result in more neglectance to environmental issues (**negative impact**).

Whenever the proposed land use activity is understood to have environmental awareness themes, to require community involvement, to revolve about training or education, or provides better opportunity for conveying environmental message, the land use activity is considered to have positive impact. While, whenever community participation is neglected, and/or the activity lack environmental themes and do not have any environmental messages to be conveyed or tools for convening it, it is considered to have negative impact.

The magnitude of impact can be high, moderate or low. This magnitude has been judged on a scale from zero to three. If those activities were considered to cause high positive impact level, they were given the highest mark of three out of three. If low positive magnitude impacts were anticipated, they were given a mark of one out of three. Negative impacts were given negative values ranging from minus one to minus three thereto indicating negative effects.

2.2.4 Historic Conservation

Historic conservation refers to the conservation of archaeological and cultural heritage resources. Two criteria were identified under this category; those are the site protection criterion and the improved conservation management criterion.

The scale used in judging the magnitude of effect under both criteria is out of three and minuse values were given to indicate negative impacts.

- **Site Protection**

The protection of archaeological and cultural heritage sites can be achieved if certain land use regulations are enforced; for example, if the land use pattern suggested for an area that hosts sensitive archaeological site is tourism (National Park), then the associated land use activities would shift sources of threat away from the site and would provide with at least minimum protection and observation (**Positive Impact**). As well, local communities would appreciate more the economical value of protecting such sites, consequently more local participation in protecting theses sites can be achieved (**Positive Impact**).

On the other hand, some land use activities might cause additional threat (**Negative Impact**); for example, the expansion of agricultural land over cemeteries.

- **Improved Conservation Management**

Managing the conservation of archaeological and cultural heritage resources can be either improved or made worse depending on the nature of the enforced land use activities. For example, establishing archaeological or cultural heritage parks (reserves) would enhance different levels of conservation activities (**Positive Impact**) ranging between site protection, signage systems, and site restoration up to the implementation of complete set of Cultural Resources Management (CRM) projects. The same positive impact can be achieved by tourism development and the establishment of nature reserves.

On the other hand, worse conservation management may occur consequent to reduced site significance whenever the site is severely deteriorated by construction activities (roads, hotels, residential areas, and dams) (**Negative Impact**), or if industrial and agricultural activities became closer to the archaeological site, forming continuous direct impact to these sites such as increased vibration.

2.2.5 Tourism Development

- **Enhancement of Infrastructure**

Any land use activity that highly enhances tourism infrastructure was given +3.

Any land use activity that moderately enhances tourism infrastructure was given +2.

Any land use activity that poorly enhances tourism infrastructure was given +1.

Any land use activity that does not enhance tourism infrastructure was given 0.

Any land use activity that has low negative impact on enhancement of tourism infrastructure was given -1.

Any land use activity that has moderate negative impact on enhancement of tourism infrastructure was given -2.

Any land use activity that has high negative impact on enhancement of tourism infrastructure was given -3.

- **Promotion of Sustainable Tourism**

Any land use activity that highly promotes sustainable tourism was given +3.

Any land use activity that moderately promotes sustainable tourism was given +2.

Any land use activity that poorly promotes sustainable tourism was given +1.

Any land use activity that does not promote sustainable tourism was given 0.

Any land use activity that has low negative impact on promotion of sustainable tourism was given -1.

Any land use activity that has moderate negative impact on promotion of sustainable tourism was given -2.

Any land use activity that has high negative impact on promotion of sustainable tourism was given -3.

2.2.6 Sustainable Land Use for Environmental Preservation

- **+3 = High Positive**

The land use activity would result in positive effect on preserving the environmental components such as water quality, quality, farming and agro-ecosystem, soil productivity and biodiversity.

- **-3 = High Negative**

The land use activity would cause a destructive effect on the existing environmental conditions and create a change/shift in the existing agro-ecosystem that would reflect negatively on the sustainability and preservation of water resources quantitatively and qualitatively, on soil productivity and quality resulting in soil degradation and on plant, animal and microbial biodiversity.

- **0 = No Impact**

No significant (neither positive nor negative) impact on the existing environmental system.

2.2.7 Benefit to JVA

This criteria evaluates the potential of the proposed land use activity in creating a sustainable future for the Jordan Valley Authority by providing income and revenue to JVA and jobs for JVA staff.

2.2.8 Water Constraints

Jordan Valley could be the most sensitive geographical part of Jordan regarding water. The water resources in Jordan Valley are limited to:

- 1- Surface water: Yarmouk water, Jordan River, and dams on side wadis and runoff
- 2- Groundwater: Well fields, baseflow and springs
- 3- Treated wastewater: mainly As-Samra Wastewater Treatment Plant

Water demand could be divided to main two parts:

- 1- Large waters for irrigation and heavy industrial activities
- 2- Small waters for domestic, light industrial activities, and touristic

The water resources cannot satisfy the demand, which leads to a recognized deficit in water supply. The Ministry of Water and Irrigation handles the deficit in a way to reduce the damage of the water shortages. The domestic water to Amman through Deir Alla to Zai water treatment plant is assured and at the same time domestic consumption at the Valley must be satisfied. The touristic and industrial water have a priority on the irrigation water.

Therefore, the first demand sector to be satisfied should be the domestic sector and then the rest must be prioritised according to agreed criteria. The main important part could be the benefit of each cubic meter consumed, which constrain the proposed land use to be efficient in water consumption. The other important issue is replacing the consumed fresh water with less quality water such as marginal water. Finally, the availability of infrastructure must be discussed. Consequently, The criteria of water constrains can be summarized by the following:

- **Return Per Cubic Meter**
This can control the proposed projects and landuse parcels to be water efficient regarding the consumption and high return per consumed cubic meter of water.
- **Marginal Water Used**
This can encourage to propose projects of marginal water consumption over projects requiring fresh water. The marginal water is available and can be consumed with less constrains if compared with the fresh water.
- **Conveyance System Availability**
This item is important to supply the proposed project with water of low requirements for water supply infrastructures. This will consider the existing infrastructure or the proposed infrastructure according to the investment plan of the Ministry of Water and Irrigation.

2.3 Participatory Analysis

The Consultant organized three stakeholder focus groups, one in each study zone, in order to help indicating the issues that are of concern to the local community and suggest income generating and development projects that can be implemented and that are more sustainable for land use. Thus, three focus groups sessions were conducted- one in Ghor Safi and two at Jordan Valley Authority (JVA) Rest House near Deir Alla. Ghor Safi session targeted the local community of Zone 3 that covers the southern Jordan Valley till Qater in the south. The two focus groups sessions at JVA Rest House targeted the communities of Zone 2 (Dead Sea Area) and Zone 1 (from Yarmouk River to Baptism Site).

The preparations for the sessions involved activities that assist in formulating a comprehensive framework for developing the scope of the focus sessions. These activities included site visits, determination of the list of participants in the sessions, and preparation of a description of the project and a questionnaire (see **Annex 5**) that consists of several sections on participants' issues of concern, and economic, environmental, education, health, housing, and transportation conditions.

Formal invitation letters were circulated to the potentially concerned agencies, NGOs, and community representatives (see **Annex 5**). The dates and the number of invitees to each session was as follows:

- Focus Group #1 - Ghor Safi: March 18th with 56 invitees of which 32 participated
- Focus Group #2 - JVA Rest House (near Deir Alla): March 20th with 49 invitees of which 17 participated

- Focus Group #3 - JVA Rest House: March 24th with 74 invitees of which 38 participated

The three sessions were held on the scheduled dates at 10:30 a.m.. Registration of participants was followed by an opening statement and the project presentation by Dr. Sawsan Himmo. The statement included appreciation to JVA and USAID for their support. The power point presentation on the Jordan Valley Master Plan Project was presented in Arabic and covered a summary of the project purpose and activity as follows:

- USAID supported JVA project which started February 29th until May 31st, 2004
- Project requirements: Baseline assessment and land use planning for 3 zones.
- The project is divided into 3 zones: Yarmouk River to Baptism Site; Dead Sea area; Southern Ghors to Qatar in Wadi Araba.
- The purpose of the Focus Groups is to identify existing land uses and community issues and concerns.
- Provide recommendations to lead to increased preservation and economic opportunities.
- Technical on-going work includes photo surveys and mapping of existing land use.
- Holding 3 focus groups in the three project zones with local people, agricultural cooperations, ministries, NGOs, hotels, industry, etc.
- Strategy for focus groups: survey, discussion, collect results, conclusions presented
- Request for filling in questionnaire.
- Division of the focus group into three sub-groups: environmental/tourism, social, water/agricultural.

The introductory presentation was followed by a request to participants to fill in the questionnaire. The questionnaire consists of several sections on participants' issues of concern, and economic, environmental, education, health, housing, and transportation conditions. The questionnaire was explained to the participants by Dr. Fouzi Sahawneh.

Then, the participants were divided into three sub-groups who then discussed a wide variety of community needs, problems, and potential opportunities. These sub-groups were as follows:

- Group 1: Water and Agricultural Resources Focus Group
- Group 2: Social and Transportation Focus Group
- Group 3: Tourism/Economy and Environment Focus Group

In each focus group, discussions started by having each participating member introduce him/herself and describe their interest in the project. Then, a representative from each focus group did a 10 minutes presentation about the conclusions and recommendations of the concerned focus group.

A list of the focus groups and their members along with the discussions and conclusions of each group in each session are presented in **Annex 6**. The questionnaire responses were then compiled and a summary of the results was produced.

The participants' responses are summarized in the following meeting conclusions and SWOT (strengths, weaknesses, opportunities, threats) analysis. The community SWOT has been translated into proposed land uses on the preliminary baseline maps.

2.3.1 Focus Group #1 – Jordan Valley South (Met in Ghor As-Safi) - March 18, 2004

The names of the participants at the first focus groups session that was held in Ghor As-Safi on March 18th, 2004 are presented in **Table 3**.

Table 3: Jordan Valley South Focus Group List Of Participants

No.	Participants Name	Institution
1.	Yousef Ramadan Khleifat	Al-Dustour Newspaper
2.	Emad Al-Qarsa	Antiquities of South Jordan Valley
3.	Darwish Taylouni	Awqaf
4.	Eng. Sahem Al-Tarawneh	Center for Advancement of Production - ARADA
5.	Dr. Nasser Al-Masarweh	Center for Advancement of Production - ARADA
6.	Abed Alsamee Ali Abu-Dieh	Department of Antiquities
7.	Nawras Al-Majali	Farmer and Head of the Cooperative Organization
8.	Nayfeh Ali Al-Nawara	Ghor As-Safi Women Organization
9.	Saleh Al-Ghawat	Head of Islamic Center
10.	Falah Al-Talaleh	Head of Karak Awqaf
11.	Salman Al-Dugheimat	Jordan Environment Society
12.	Yehya Khalil Mohammad	Jordan Valley Authority- South Jordan Valley
13.	Suleiman Al-Marwat	Jordanian Hashemite Fund
14.	Suleiman Al-Bawaq	Journalist
15.	Fathi Al-Huwaymel	Journalist and Head of the Local Committee for the Rehabilitation Program and Member of the Ghor Mazra'a Social Development Organization
16.	Eng. Malek Yasin Al-Darawsheh	Karak Water Authority
17.	Eng. Yousef Ahmad Mustafa A'babneh	Ministry of Education- Aqaba Directorate
18.	Eng. Aktham Madanat	Ministry of Agriculture
19.	Mohammad Khaled Al-A'badeh	Ministry of Agriculture
20.	Dr. Reem Kharouf	Ministry of Education
21.	Abdullah Sayal Al-Oune	Ministry of Interior- administrative office of the South Jordan Valley
22.	Eng. Samir Jaradat	Ministry of Tourism and Antiquities
23.	Eng. Marah Al-Khayat	Project Manager at the Ministry of Tourism and Antiquities
24.	Salem Suleiman Al-Kutayeb	Qatar - Wadi Araba
25.	Oudeh Salameh Al-Kutayeb	Qatar - Wadi Araba
26.	Faraj Hamed Suleiman Al-Kyees	Qatar - Wadi Araba
27.	Dr. Laith Al-Moghrabi	Royal Society for Conservation of Nature (RSCN)
28.	Mohammad Yousef	Royal Society for Conservation of Nature (RSCN)
29.	Eng. Hamad Al-Maska	South Ghor Municipality- Head of Municipality
30.	Barq Al-Majali	South Ghor Municipality-Member
31.	Eng. Issam Al-Adayla	South Jordan Valley Education Directorate
32.	Eng. Jihad Al-Sakar	Water Authority
33.	Sandi Chesrown	AMIR Program
34.	Eng. Khaled Murad	Consolidated Consultant
35.	Dr. Sawsan Himmo	Consolidated Consultant
36.	Dr. Adnan Al-Salihi	Consolidated Consultant
37.	Dr. Raoul Nasr	Consolidated Consultant
38.	Dr. Fouzi Sahawneh	Consolidated Consultant
39.	Dr. Munir Rusan	Consolidated Consultant
40.	Majdi Salameh	Consolidated Consultant
41.	Mahmoud Hishmeh	Consolidated Consultant
42.	Rola Quba'a	Consolidated Consultant
43.	Majd Toukan	Consolidated Consultant
44.	Abdel Rahman Jaber	Consolidated Consultant
45.	Lama Awad	Consolidated Consultant

2.3.1.1 Tourism/Economy and Environment Sub-Group (Mr. Majdi Salameh, Facilitator)

The following issues were discussed within the tourism and environment focus group:

Strengths:

- Pillars of tourism – JV has it all: archaeological, historical, recreational, and natural sites
- Dead Sea Basin – Ministry of Tourism is completing the Lowest Point on Earth Museum
- Ghor As-Safi – Ministry of Tourism is building Lut's Museum at Lut's (Lot's) Cave
- There are 50 other sites in the southern Ghor such as Tel El-Sukar
- Tawheen Al-Sukar (Sugar Mills) – not sure whether project has begun
- Fenan and Fidan areas are very important areas; natural reserves in the area have played a major role in protecting those archaeological sites
- Eight important bird areas: Yarmouk River, North Ghor, Suweimah and Baptism site, Mujib reserve, Ghor Fifa, Dana, wadi Ibn Hammad-Haditha. (Jordan Rift Valley as part of the African Rift along which birds migrate between the African Continent and Europe)
- Fifa has a unique habitat for ecotourism; issue of local stewards is very important.
- Wadi Araba – important natural habitat for many plants and animals. Nature areas are more cost effective than mining.
- Water Desalination Project – Ghor As-Safi
- Awqaf or Religious Sites – Companions of the Prophet

(CC requested lists of sites from Department of Antiquities -Abd Sameea Abu Dieh re site location and documentation and from the Ministry of Awqaf.)

Weaknesses:

- Lack of tourist facilities – Ministry of Tourism's interest is in providing limited services, not lodging.
- Lack of site protection and illegal digging related to local unemployment
- Lack of site preservation and presentation
- Lacks of buffer zones - building near the sites, such as near Lut's Cave (to be constructed soon); the Department of Antiquities wants jurisdiction to provide adequate buffers.
- Lack of practical and affordable agricultural solutions for farmers

Opportunities:

- Reduce use of high water crops like bananas and conserve for domestic use
- Encourage more water conserving drip irrigation

Threats:

- Water Availability - The Red-Dead Sea Canal project has an immense impact and cost but potential return in water availability and jobs. Large irrigation needs from water intensive crops like bananas. Illegal water wells. In Suweimah, there is a problem of draw down due to pumping by two of three primary industrial users in the JV: the Arab Potash and the Magnesia Companies (third is Bromine company)

- Dead Sea Carrying Capacity – Carrying capacity is related to availability of services and if services were available then the carrying capacity would be increased. However, services should not negatively impact the environment.
- Sinkholes - Mud factory project at the southern shore of the Dead Sea was stopped due to sinkholes.

Miscellaneous Comments:

- The Ministry of Tourism mentioned that the Southern Jordan Valley has been provided with complete infrastructure in areas that do not have communities; it was questioned whether the country is investing resources in the most appropriate way.

2.3.1.2 Water and Agriculture Sub-Group (Dr. Adnan Al-Salihi, Facilitator)

No strengths were listed.

Weaknesses:

- Lack of water recycling by industry, especially the potash industry which is a big user
- Lack of water management - 60% water inefficiency or loss
- Water quality is brackish (noticed salinity increase about 7-8 years ago)
- Ministry of Agriculture waters forests with waste of fresh water. However, they should use Grey water.
- Seasonal changes to salinity levels (higher in summer) make water distribution difficult
- Irrigation networks work improperly
- Kefaya Treatment Plant works improperly
- Insufficient and improper marketing for agricultural products
- Lack of public awareness about pesticides
- Need for research centres

Opportunities:

- Grey water could be used for alfalfa and animal feed, which is not directly consumed by humans
- Mineral production including shale and marble – large employee base could work in this type of industry rather than agriculture

Threats:

- Quality of groundwater is being polluted by cesspools and septic systems; need high quality fresh water for human consumption and export products
- Mineral water high in temperature and sulphur content is negatively affecting land
- High use of pesticides (73 tons of bromide used in the JV)

Miscellaneous Comments:

- Misperceptions about untreated water from King Talal Dam need to be corrected in export markets.

2.3.1.3 Social Development Sub-Group (Dr. Fouzi Sahawneh and Mahmoud Hishmeh, Facilitators)

No strengths were mentioned.

Weaknesses:

- Lack of connectivity between educational facilities and teachers' residences
- Lack of upkeep of play areas due to lack of water
- Lack of schools which causes classes to be crowded and thus reduce the educational level and leads to student drop off from schools.
- Lack of air-conditioned schools, which makes teaching and learning difficult due to the very hot weather in the area.
- Lack of close secondary schools to villages, which creates an obstacle for girls to go to schools.
- Lack of training centres for best management practices in agriculture (including more appropriate crops) and computer training
- Lack of an efficient transportation system including limited bus service that doesn't run on schedule and discourages women from taking the bus
- Lack of good regional health centres

Opportunities:

- Allocate lands for building schools, hospital, industries for agricultural products and organic fertilizer production, handicrafts, slaughterhouse, bridge between Naq'a and Safi and land for recreational activities.

Threats:

- Few job opportunities – continued and increasing out-migration
- Education is not taken as a step to a better job or life, so not taken seriously

2.3.2 Focus Group #2 – Jordan Valley Middle (Met near Deir Alla at JVA Rest House)- March 20, 2004

The names of the participants at the second focus groups session that was held at the Jordan Valley Rest House in Ruwieha on March 20th, 2004 are presented in **Table 4**.

Table 4: Jordan Valley Middle Focus Group List Of Participants

No.	Participants Name	Institution
1.	Eng. Tayseer Ghzawi	Assistant Secretary General-Jordan valley Authority
2.	Mohammad Abdel Hadi Wreikat	Awqaf Directorate of Balqa' Governorate
3.	Nazeer Mohammad Attiat	Awqaf of Balqa'
4.	Eng. Ahmad Al-Abdallat	Deir Alla Education Directorate
5.	Abdel Samee Abu Dieh	Department of Antiquities
6.	Hussein Al-Jarah	Department of Antiquities
7.	Hussni Abu Hashweh	Department of Antiquities
8.	Eng. Issa Ma'abneh	Jordan River Foundation
9.	Ziad Atallah	Jordan Valley Fish Farm
10.	A'asha Ahmad Abu Syam	Khazma Women Cooperative Organization
11.	Eng. Ahmad Khalil Abu-Siam	Khazma Women Cooperative Organization
12.	Samira Mohammad Abu Syam	Khazma Women Cooperative Organization
13.	Sara Mohammad Khater	Khazma Women Cooperative Organization
14.	Dr. Reem Kharouf	Ministry of Education
15.	Eng. Khaled Al-Arabi	South Shuneh Education Directorate
16.	Eng. Adel Al-Khafajeh	Suweimeh Municipality
17.	Najwa Jawdat Sha'sha'a	
18.	Ramzi Kwar	Project Manager
19.	Sandi Chesrown	AMIR Program
20.	Dr. Sawsan Himmo	Consolidated Consultant
21.	Dr. Adnan Al-Salihi	Consolidated Consultant

No.	Participants Name	Institution
22.	Dr. Raoul Nasr	Consolidated Consultant
23.	Dr. Fouzi Sahawneh	Consolidated Consultant
24.	Dr. Munir Rusan	Consolidated Consultant
25.	Majdi Salameh	Consolidated Consultant
26.	Mahmoud Hishmeh	Consolidated Consultant
27.	Lama Awad	Consolidated Consultant
28.	Majd Toukan	Consolidated Consultant
29.	Abdel Rahman Jaber	Consolidated Consultant
30.	Rola Quba'a	Consolidated Consultant

Interview during Break – Sandi Chesrown with a Woman Farmer:

- JVA has divided the land into units of 35 dunums, which is too small for efficient farming. 80% of the original farm families have left the Jordan Valley; their children do not want to work in agriculture.
- The area is very traditional and requires a lot of time to change.
- Although bananas are not water efficient, they are the best crops because they produce a steady income and there is always a market.
- The JVA needs to do the following: open up the buying and selling of land, study the local markets, study export markets, and control plant types through licensing so that over-planting stops. Now farmers can plant whatever they want, and there are always issues of over-planting. For example, the past two years olives were over-planted because there are insufficient markets (not set up for export). Now there will be over planting of date palms, unless the export markets are organized.

2.3.2.1 Tourism/Economy and Environment Sub-Group (Mr. Majdi Salameh, Facilitator)

(Self introductions to encourage participation - mentioned the need to understand who they are and their interests in land use, as well as their skills and resources)

Strengths:

- 150 important archaeological sites and hundreds of others not well documented
- MOT/JICA road linking Madaba/Dead Sea panorama and Dead Sea, on to Wadi Mujib
- Wadi Mujib – Visitor Center and campsite
- Footpath linking Mukawir/Wadi Mujib to encourage nature based tourism
- Jordan Valley migratory bird area
- Khazma Project including dairy plant for agro-tourism with Jordan River Foundation
- Abu Obeidah Religious Shrine/one of the Companions of the Prophet religious sites – record number of tourists/pilgrims as recorded by the Royal Committee for the Development of the Companions Sites, Ministry of Al-Waqf; many mosques in the Jordan Valley
- Decent road network
- Model for grazing at Mujib Reserve (problem of over-grazing is being reduced)
- Water in the Jordan Valley is saline and has an appropriate temperature for fish farming.

Weaknesses:

- Do not know all locations of archaeological sites (Department of Antiquities is currently identifying them with help of British Institute)

- Lack of protection of archaeological sites (recommended fencing sites) and lack of public awareness of importance of protecting them
- Lack of services and facilities to encourage tourism
- No public parkland or play areas for children
- Lack of shade in hot climate
- Lack of efficient public transportation
- Lack of environmental awareness regarding garbage and littering
- Lack of public awareness regarding value of certain types of work
- Shortage of mosques and cemeteries in proximity to residential areas
- Lack of centres for the disabled in Deir Alla area
- Excess agricultural production exceeding plant capacity or market such as the tomato paste industry
- Problem of tree cutting, although reduced with gas ovens
- Problem with stagnant ponds and Subsequent mosquitoes and flies in classrooms

Opportunities:

- Local tourism activities near dam sites
- Fish farms; also encourage people who have irrigation ponds with a capacity of 350m to use for fish production; need public awareness to promote domestic fresh fish consumption to decrease imports of frozen fish
- Nature reserves in areas near borders with West Bank/Israel
- Ecotourism
- Jordan River hopes to build a road adjacent to Dead Sea Panorama/Dead Sea road from Mukawir to Wadi Mujib to provide additional access.
- Encourage drip irrigation and new cropping patterns – environmental awareness for farmers
- Study to implement a Sanctuary at Dames Abu-Alhol
- Establish Al-Zakat fund in one of the residential areas
- Plant shade trees along the road where people are waiting for buses
- Community parks and playgrounds
- Plan to establish centres for the disabled in Karn
- Acacia tree and Arak, used to make traditional tooth brushes (miswak)
- Medicinal plant production.
- Increase animal feed through planting alfalfa fields at Khazma and use recycled water (grey water) for irrigation
- Public awareness of job value to encourage local employment and discourage out-migration
- Public awareness of solid waste dumping
- Improve the bus system – increase routes and follow schedule
- Industry to manufacture equipment for the handicapped
- Centre for physically and mentally disabled people
- Lack of good farm management and agricultural diversification

Threats:

- Unemployment is high at 18%
- Illegal digging and trading of artefacts
- Water consumption by industry

- Facilitating industry without knowing the negative environmental impacts. There is a need for an environmental impact assessment of Red-Dead before it moves too far along.
- Illegal use of wells
- Polluted water at fish farms will pollute fish and affect human consumption
- Landslides in Khazma
- Increasing unemployment and foreign employment – out migration
- Increasing congestion in residential areas; urbanization of land
- Pollution from fertilizers, inappropriate use of pesticides, uncovered or exposed wastewater, stagnant irrigation ponds in agricultural lands

Miscellaneous Recommendations:

- Put archaeological sites in the name of the treasury.
- DOA is in the final stage of modifying the archaeology law, which will require 20-25 meter buffer zone around sites. Industry and quarries should be located at least one km from archaeological sites. For any private or public projects, the tender should request clearance from DOA prior to construction, and this was passed in Parliament on the 19th of March, 2004.

2.3.2.2 Water and Agriculture Sub-Group (Dr. Adnan Al-Salihi, Facilitator)

(Said 60% of water goes towards agriculture)

Strengths:

- Khazma Women's Cooperation have a Dairy Farm and are studying medicinal plant and bee farm project

Weaknesses:

- Lack of a sewage treatment plant
- Lack of use of grey water and water recycling
- Limited agricultural awareness and training on the use of appropriate crops and new crops
- Lack of farm management

Opportunities:

- Medicinal plant production – need to understand market demand
- Animal production
- Introduce new crops; change in cropping pattern to less water intensive crops and to salt resistant crops
- Better use of all water sources, including brackish and treated sewage
- Better irrigation techniques
- Reinvigorate the agricultural extension office and make the guidance programs provided by the Ministry of Agriculture more effective
- Establish marketing centres
- Establish canned food industry
- Establish marble quarries and factories
- Establish sports facilities
- Construct sewer network and treatment plant

Threats:

- Scarce water sources and low quality sources
- The use of fertilizers and pesticides in agriculture

2.3.2.3 Social Development Sub-Group (Dr. Fouzi Sahawneh and Mr. Mahmoud Hishmeh, Facilitators)

Strengths:

- Pleasant winter climate
- Possible job opportunities in tourism for Suweimah residents (5000 population) including 300 at Amman beach area and 500 working in hotels.
- Hot springs in Suweimah
- 36 recently built chalets in Suweimah to encourage local tourism and related activities (32,000 JD/sold first five in one week)
- Raw material and technical knowledge for carpet production
- Area is rich in archaeological sites including Baptism site (280 sites)
- Virtually no unemployment in Suweimah (girls work in teaching, fields, government, administration, Army; 50 work for Potash Factory, and 15 or so work for Safi Salt (closes due to over-production, always reopens)
- Area has active handicrafts/living heritage base - 41 women involved in handicrafts (tablecloths, ceramics, carpets, traditional foods such as labneh, cheese, honey, pickles)
- Sufficient number of public schools (pre-university) that function well; most teachers have BA degrees
- Sufficient number of primary health centres

Weaknesses:

- Biting insects and rodents in October affecting locals and tourists
- Lack of a strong Farmers Association
- Women (80-90% from the ages of 16-45) do 80% of the work on farms; men are idle; only 15% work, some as drivers
- Small parcels of land make effective farming difficult
- Lack of a centre for agricultural research
- Lack of vocational training centres focused on providing future jobs, such as in tourism
- Lack of training in product marketing
- No public beach for Suweimah residents
- Lack of picnicking sites and recreational areas
- Lack of licensing of and training for animal (horse/camel) handlers in dealing with tourists and lack of controlled area to rent animals to tourists
- Lack of handicrafts facilities and associated marketing
- Lack of incentives to work because of limited work opportunities and cultural shame in working in some types of available jobs
- Need for urbanization
- Strong population growth due to lack of awareness
- Lack of good public transit
- Lack of proper landfill area for solid waste
- Lack of sufficient lanes for single road running North to South
- Lack of regional health facilities including hospitals with specialized care such as orthopaedics

- Ownership of productive land under employees of the JVA and the government
- Lack of local stewardship and protection of religious sites

Opportunities:

- Land Use - Along the road from North to South Shuneh – preserve land west of the road for agriculture including greenhouse tomatoes, cucumbers, beans, potatoes, and citrus – (dates don't bring best prices); and east of the road for residential development. (Kraymeh, Deir Alla and Mashara' are good areas for agriculture).
- Road – improve and widen north-south arterial
- Regional public transit centre
- Regional marketing centre for handicrafts
- Construction of proper landfill area
- Agricultural land – need more for wheat and animal feed for camels (alfalfa)
- Agriculture – need less water intensive crops (palm v. banana)
- Allow increased ownership of agricultural land by local people
- Agricultural college with practical training; strengthen research centre in the Jordan Valley Agriculture Department
- Vocational training in tourism such as hotel school including administration/computer skills near Suweimah
- Public beach and picnic area for Suweimah
- Regional veterinary centre for animals
- Construction of employee housing units for hotels inside Suweimah to link tourism opportunities to town.
- Carpet factory – proposal in to Ministry of Planning not funded
- Industries for packaging of agricultural products
- Survey the youth (shabab) to uncover interests and training/employment needs

Threats:

- Foreign workers (65% of labour force, who accept 80 JD per month)
- Males refusal to work in agriculture and lack of other work results in despair, cultural conflict (reliance on females to do the work), and out-migration
- Drinking of alcohol by idle youth
- Urbanization due to high birth rates leads to decreasing land for agricultural production. (The Jordan Valley Authority allocated 224m² of land for each family, however, they are only allowed to build on 60-80m² of that area, and since the sons live with their families, when they get married this area becomes crowded. There is a lack of planning.)
- External land owners (outside Jordan Valley) and social class conflicts
- Expensive water pricing
- Overproduction of certain types of vegetables and underproduction of certain types of citrus, creating need for imports
- Increasing population of stray dogs

2.3.3 Focus Group #3 – Jordan Valley North (Met near Deir Alla at JVA Rest House) -March 24, 2004

The names of the participants at the third focus groups session that was held at the Jordan Valley Rest House in Ruwieha on March 24th, 2004 are presented in **Table 5**.

Table 5: Jordan valley north focus group list of participants

No.	Participants Name	Institution
1.	Eng. Amer Al-Safadi	Agricultural Directorate of Jordan Valley
2.	Eng. Tayseer Ghzawi	Assistant Secretary General- Jordan Valley Authority
3.	Eng. Munther Al-Bekheet	Deir Alla Municipality- Head of Municipality
4.	Hani Al-Hassan	Deir Alla Municipality-Member
5.	Dr. Salem Amarat	Deir Alla Municipality
6.	Hadby Al-Huwarrat	Farmer
7.	Ali Al-Faqeer	Farmer
8.	Abdullah Al-Wa'ae	Farmer
9.	Dr. Atta Ayoub	Jordan Environment Society- Deir Alla
10.	Eng. Anas A'amaira	Jordan River Foundation
11.	Nisreen Araj	Jordan Valley Authority
12.	Eng. Ahmed Saeed	Jordan Valley Authority
13.	Saleem Sobeh Bshara	Jordanian Himmeh
14.	Hatem Mohammad Mari	Jordanian Himmeh - Noor El-Hussein Foundation
15.	Ahmad Al-Salihi	Jordanian Mineral Himmeh Company (A Subsidiary of Zara Investment Group)
16.	Adel Khalil Abu Siam	Khazma Member of Deir Alla Municipality
17.	Ahmad Saleh Al-Dabbas	Kraymeh Municipality
18.	Dr. Reem Kharouf	Ministry of Education
19.	Eng. Faysal Kaseer	Ministry of Education
20.	Lubna A'meira	Ministry of Public Works and Housing
21.	Dana Al-Bekheet	Ministry of Public Works and Housing
22.	Amin Ibrahim Abdallah	Mokheiba Tahta
23.	A'ahed Mursal	Mu'addi Municipality-Member
24.	Eng. Mohammad Al-O'boud	New Deir Alla Municipality
25.	Eng. Yousef Al-Sakran	New Deir Alla Municipality
26.	Ali Abd AlHafez	New Mu'addi Municipality
27.	Ali Ahmad Okla	New Mu'addi Municipality
28.	Eng. AbdKareem Abu Zeina	New Mu'addi Municipality- Head of Municipality
29.	Mohammad Saed Al-A'abedy	North Jordan Valley Awqaf- Head of Municipality
30.	Mousa Ahmad Al-Denyar	North Shuneh Municipality-Member
31.	Eng. Khaled A'nab	Sharhabil Bin Hasnah Municipality
32.	Mansab Mohammad Al-Kuwaisem	Tabqat Fahel Municipality
33.	Khaled Abu Attaih	Tabqat Fahel Municipality
34.	Mohammad Suleiman Khashan	Tabqat Fahel Municipality
35.	Mohammad Falayeh Talaga	Tabqat Fahel Municipality
36.	Eng. Jamal	Water Authority
37.	Eng. Ghazi Abdo Ahmad	Water Authority- Head of Water Treatment Department
38.	Ali Fahed	
39.	Sandi Chesrown	AMIR Program
40.	Eng. Khaled Murad	Consolidated Consultant
41.	Dr. Sawsan Himmo	Consolidated Consultant
42.	Dr. Adnan Al-Salihi	Consolidated Consultant
43.	Dr. Raoul Nasr	Consolidated Consultant
44.	Dr. Fouzi Sahawneh	Consolidated Consultant
45.	Dr. Munir Rusan	Consolidated Consultant
46.	Majdi Salameh	Consolidated Consultant

No.	Participants Name	Institution
47.	Mahmoud Hishmeh	Consolidated Consultant
48.	Rola Quba'a	Consolidated Consultant
49.	Ruba Khoury	Consolidated Consultant
50.	Noura Qudah	Consolidated Consultant
51.	Luba Hamdi	Consolidated Consultant

(Discussion of JVA Rest House as a hotel site)

2.3.3.1 Tourism/Economy and Environment Sub-Group (Mr. Majdi Salameh, Facilitator)

Strengths:

- Successful water harvesting and irrigation of olive trees
- Archaeological sites (such as Umm Qais and Pella)
- Religious sites including Companions of the Prophets sites (50,000 visitors in the spring)
- Establishment of Al Rayyan Centre/Jordan River Foundation; free training for all; currently 20 women employed in handicrafts development and marketing their work; earning 50-70 JD per month; use of leftover raw materials or 'waste' such as banana leaves that were previously throw on roads; exporting products to Gulf, Paris, and Greece; and exhibiting them in the Movenpick and in the new Himmeh Hotel
- Jordanian Mineral Himmeh Company's plan to transform their 1964 hot springs hotel of 10 rooms and 25 chalets (500 tourists last year) into a 4 star hotel and medical spa of 135 rooms (Zara), to employ 150 local residents of Al-Mukheibah (creating "green belt" around hotel area); will provide environmental feasibility information
- Construction training program
- Allocated budget for a technical center at Mashara' (vocational, handicraft)
- Technical centre at Fanoosh for mechanics, carpentry, very successful training model
- Bee keeping training program in North Shuneh
- Olive areas
- Increasing cooperation from the JVA
- Deir Alla sewage plant under Canadian grant; should be model for plants elsewhere.

Weaknesses:

- Lack of playgrounds, parks, and recreational areas in all areas, and lack of a swimming pool at Tabqat Fahel (children have drowned trying to swim in the King Abdullah Canal).
- Lack of proper land use planning and haphazard location of industry (example of Arda Industrial/Tomato Paste bad smell)
- Lack of youth training centres including computers
- Lack of handicrafts centre at Deir Alla – have loan but have not received approval from JVA re location
- Crowded residential areas ("like military camps" at Kraymeh and Sheik Abel) and lack of room for urbanization (extension of small residential areas into road right-of-way at Kraymeh) and space between residential areas and agricultural land (related unhealthy conditions such as impact of farming pesticides on human habitation and air quality)
- Farm units are too small for strong productivity; difficult to consolidate land into larger farms

- Lack of strong work culture as amount similar to Ministry of Social Welfare payments of 160 JD per month
- Lack of efficient transportation system, especially for women; reduced amount of time they can stay at work
- Lack of alternative and paved agricultural roads that give access to farmers (e.g., Mu'ath Bin Jabal and Al Himmeh)
- Water pollution from cesspits and lack of sewer network (will accept using treated water for irrigation); no equipment to empty septic
- Lack of Wadi Arab Dam water for irrigation due to high salinity
- Major problems at Al Deyyat solid waste dump site (smell and insects)
- Lack of protection for religious sites

Opportunities:

- Residential development at Al Mashara', Al Sheikh Hussein, Kraymeh, and Mu'addi
- Plastic recycling factory
- Organic fertilizers
- EIS prior to land use approvals
- Survey of existing facilities in local areas to avoid duplication
- Package sewage treatment plants and production of treated water for certain types of irrigation
- Spring tourism festival
- Handicraft centres (perhaps regional)
- Investment in palm tree production
- Places for feeding and raising cattle
- Biodiversity reserves
- Swimming pools and other recreation for children

Threats:

- Dump sites near water resources (e.g., Al Shuneh Awqaf)
- Cess pits polluting springs
- Biodiversity endangered
- Out-migration of local people

2.3.3.2 Social Development Sub-Group (Dr. Fouzi Sahawneh and Mr. Mahmoud Hishmeh, Facilitator)

Strengths:

- Sufficient health care centres

Weaknesses:

- 30-35% of area schools are under JVA rather than under Directorate of Education (have to pay to change).
- Not enough schools; buildings are rented and do not have playgrounds, laboratories, etc., and classrooms are crowded.
- Educational quality is poor due to a lack of teachers and specializations and two shifts
- Lack of local colleges or universities
- Lack of specialized medical laboratories, hospitals, and staff – only 8 hospital beds per 35,000 people and low doctor to patient ratio

- Lack of sewer treatment plant and related pollution
- Lack of public trash dumps
- Crowded primary access road (said planned at 40m in width but now only 12m in width)
- Lack of efficient public transportation
- Farmers do not own land that they work (less stewardship and economic opportunity); some high security lands taken as well
- Lack of markets for and marketing of agricultural products
- King Abdullah culvert is not maintained (water leakage/salinization)

Opportunities:

- Allocate land for educational facilities and local college
- Allocate land for a regional hospital and specialized health facilities and labs and intensive care facility
- Build a sewer treatment plant for area
- Build public parks and recreational facilities including swimming pools
- Widen major arterial running north to south to meet planned width and study village ring roads to ease congestion and change land development pattern
- Increase and enhance public transportation
- Development or preservation of lands near border with Israel (taken by the government in 1967)
- Juice factories
- Natural fertilizer factories
- Handicraft training centres
- Slaughter houses and cattle market (Deir Alla is largest)
- Plan government land on ridgeline for residential uses (to stop use of agricultural land for residential development)
- Allocate land for cemeteries
- Deed back land from Wadi Khaled dam to people of Himmeh to be used for agriculture and to alleviate poverty

Threats:

- Students do not attend school.
- Foreign employment increasing local unemployment rate
- Decrease of agricultural land due to urbanization
- Lack of interest in working in agriculture
- Salinization of soils due to cracks in King Abdullah culvert – no longer useable for agriculture

2.3.3.3 Water and Agriculture Sub-Group (Dr. Sawsan Himmo, Facilitator)

Strengths:

- Water in the JV is classified into three types; clean water, treated water and mixed water. Clean water is available from the Yarmouk River, several side wadis, Wadi Arab Dam, Ziqlab Dam and others. Irrigation water is available from King Abdullah Canal, King Talal Dam, Al-Kafrein Dam and other small dams.
- Water from King Talal Dam is within the Jordanian Standards.
- Some water harvesting including desert dams

- Three marketing centres have been organized to market exports: Al-Karn, North Shuneh and Al-Sawalha
- Women play an important role in agriculture
- Vocational training programs have reduced unemployment

Weaknesses:

- Marketing centres are not activated or properly organized.
- Lack of wastewater networks (polluting groundwater)
- Lack of planting according to water quality and quantity
- Lack of appropriate marketing of products (exports)
- Lack of best management practices in farm management
- Role of women (cultural issues) and lack of training in agriculture
- Lack of wastewater facilities and networks

Opportunities:

- Create cropping patterns that suit the type and amount of irrigation (according to clean, treated or mixed irrigation)
- Construction of wastewater treatment centres and networks
- Expand the use of treated water for irrigation (occurring in Al-Deyyat and As-Samra)
- Reorganization of farmers associations to guide improved cropping patterns and creation of agricultural studies centres; emphasize cereals. (Make the organization that has existed for over 20 years more effective.)
- Activation and reorganization of existing marketing centres
- Information program on annual water budget to facilitate farmer's choice in annual planting according to available water
- Public awareness of Karameh Dam water for irrigating crops like date palm
- Better coordinate information between the JVA and farmers re modification of irrigation networks
- Establish a funding centre to compensate farmers for disasters
- Expansion of animal raising areas
- Establish a handicrafts training program and centre – link to tourism
- Establish educational centres and expand vocational training programs from 7-8 months to 2 years (like community college)
- Establish food factories and associated training programs – target disadvantaged including women and youth
- Enhance water harvesting through a government loan program and the establishment of cisterns to collect rainwater on house roof tops

Threats:

- Water fluctuations from year to year
- New resources of water and its uses (Wehdeh Dam)s

3 ARCHITECTURAL DESIGN GUIDELINES

3.1 Introduction

The design guidelines presented herein are intended to guide the decision-making of the Jordan Valley Authority regarding exterior design of structures. Guidelines also address landscape. It might be useful for the JVA to organize an Architectural Commission, or decision-making body to, based on the strength of the legislation and its compliance requirements, either review and recommend or review and approve applications for new construction.

With regard to existing construction, other than archaeological sites, there are few historic structures in the Jordan Valley. However, those vernacular villages that exist should be preserved to promote the integrity of the cultural landscape, i.e., the buildings or village can be recognized as belonging to a particular time and place in the Jordan Valley's history, a physical record of time, place, and use.

Preservation is the act or process of applying measures to sustain the existing form, materials, detail and setting, to include stabilization and repair work. Rehabilitation is the process of returning a property to a good use, while still preserving its original features, including the decorative features, position, proportion, and materials of doors and windows, masonry and mortar characteristics, roof form and materials, and historic landscape. Another objective would be to minimize the visual impacts of new mechanical systems and equipment and to place additions at the rear of the building.

Rehabilitation includes adaptive re-use of a structure. Adaptive re-use entails conversion from a building's original use to a new use while retaining historic features. This should be encouraged as a tool for economic development. A compatible use is one that requires minimal alteration, e.g., residential to a small house museum, restaurant, or handicrafts shop.

Elements of integrity and distinctive features might include overall massing, form and materials, architectural details, any other example of craftsmanship, and the relationship of the building(s) to the surrounding landscape. When possible, deteriorated original features should be repaired rather than replaced. When the severity of the deterioration requires replacement, the new features shall match the old in design, Colour, texture, materials, and other visual qualities. New additions shall be differentiated from the old, but shall be compatible to protect the historic integrity of the property and its environment.

With regard to the Northern Zone of the Jordan Valley, there are few if any design standards. Villages and municipalities are responsible for zoning and building regulations within their borders, but they have not enforced their own zoning regulations. Thus, communities have little character or boundary definition. It will be important in the future for the JVA to work with municipalities to either create different enforceable regulations or to enforce those that already exist. For those government buildings that are outside the municipal boundaries, JVA and the ministries should look to the SOS Villages in Amman and Aqaba for guidance, with their vernacular but contemporary stone facades.

An interesting prototype for community awareness and tourism development that JVA might implement with USAID and US Department of Energy/National Renewable Energy Laboratory funds, is a 'zero-energy house,' similar to one that was recently built in Tucson, Arizona, with its similar climate, as part of a nationwide demonstration program to conserve energy and water. This could include adobe construction, which was typical to the Jordan Valley until the 1950s, solar space and water heating, energy saving lighting, low flow plumbing fixtures, and windows with awnings and wooden shutters to minimize heat gain during the summer.

With regard to the Dead Sea area, JVA began design regulations under the Sigma plan in 1997. New hotels have quite distinctive characteristics, which have begun to create an attractive Dead Sea style. The following recommended standards incorporate the 1997 recommendations and expand upon them, taking into account water and landscape conservation. They address not only hotel development but all types of development in the Middle Zone of the study area.

As is true in other Arab countries, such as Oman, Tunisia, Morocco and Egypt, architectural and landscape guidelines can protect existing resources and create a better living environment for local people and tourists. The Dead Sea's extraordinary geological formations should serve as a source of design inspiration, and natural landscapes should be only minimally disrupted for development.

Primary goals, which are based on a sympathetic relationship between the environment and architecture, and sensitive responses to context- climate, water, vegetation, and traditional building form- include water conservation, buildings that reflect their surrounding landscape in Colour palette, buildings that incorporate traditional materials and designs, and tourism villages that reflect a vernacular character, similar to Dana, Sila, or other traditional villages in the area. Development should be phased to coincide with public infrastructure development, and developers should "proffer" or pay fees for infrastructure that supports their developments in preparing this guidelines, we refer to Aqaba Architectural guidelines is some points.

3.2 Key Characteristics of Architectural Character

The architectural character for JV is derived from both traditional and contemporary motifs. The key characteristics of architectural design that must be incorporated in all development in the JV include:

- Traditional variety in building massing using compositions of simple cubical forms in different sizes.
- Flat roofs with variations in parapet height.
- Use of interior courtyard spaces.
- The appearance of thick building walls with recessed windows and doors.
- Window openings in vertical proportions.
- Earthtone wall colors in a variety of shades that reflect the natural colors of the adjacent mountains and desert.
- Design treatment of windows, doors, stairs, mouldings, walls, fences and other details in traditional architectural motifs.

Unacceptable Characteristics

Architectural design characteristics that are not acceptable in the JV include:

- Contemporary architecture from Amman.
- Imitated European, American or Asian designs.
- Historic Roman, Greek or Egyptian forms.
- Monumental or eclectic forms.
- Pseudo castles, chateaux or temples.
- Exaggerated high technology forms.

3.3 Building Scale and Massing

Unless otherwise approved, all new buildings must have a low, horizontal scale that includes variety in height and shape.

Appropriate Building Scale and Massing

- Horizontal building proportions.
- Variation in wall plane.
- Variation in roofline height.
- Stepping of building forms down slopes.
- Compositions of simple rectilinear shapes.
- Use of shadows to create a sense of depth.
- Large surface areas broken by changes in plane, openings, recesses, or building details.
- Structural elements, doors, windows and building details in proper proportions to size of building.

Unacceptable Building Scale and Massing

- Large boxy shapes.
- Large, plain, building surfaces and glazing.
- Arbitrary use of curves and unusual forms.
- Exaggerated towers, arches and gateways.
- Arbitrary or exaggerated building details.

3.4 Design Details

Design details on buildings should express a subdued blend of contemporary and traditional Islamic motifs.

Appropriate Design Details

- Simple expression of door and window frames, lintels and arches in stone or wood.
- Stone or decorative tile trim around arches, columns, doors, windows, balconies and stairs.
- Wood "Mousharabia" grillwork on windows
- Concealed gutters, downspouts, vents, stacks, pipes.

Unacceptable Design Detailing

- Exaggerated detailing.
- Plaster or stucco mouldings and cornices that appear fake or clumsy.
- Sloppy fabrication of construction joints and connections.

3.5 Secondary Structures

Garages, pool structures, storage sheds and other secondary structures must be consistent in design with the primary residential structure. Pergolas, canopies and trellis structures may not be located inside required setback areas.

3.6 Exterior Colors

Exterior colors must reflect the local nature and mountain colors of JV. Colors must also be selected in shades that minimize glare and fading.

Appropriate Color Treatment

- All exterior plastered walls facing public streets, walkways or beaches shall be painted with a natural, subdued, Earthtone colors and to reflect the Jordan Valley desert and geology with traditional brighter accent colors (such as shades of blue and green), stone should not be painted.
- Variations in colors should be used to reinforce changes in massing, with lighter colors on upper building forms.
- White or bright colors can be used on the recessed wall surfaces of window and door openings and recessed balcony walls.
- Wood doors, windows and shutters are to be stained.
- Aluminum windows must have a dark bronze anodized or color powder coating finish.
- Accent colors require special approval and are limited to small surface areas.
- All flashing, vents, pipes and exterior mechanical equipment shall be painted to match the adjacent roof or wall color, or screened from off-site view.

Inappropriate Color Treatment

- Dark or intense wall colors.
- Arbitrary, non-traditional color patterns.

Color Approval Process

A conceptual color scheme should be included in the initial conceptual design review submittal to the JVA. The color submittal should include, but is not limited to:

- Color concepts under consideration for exterior walls, doors, windows and details.
- A colored illustration of one or more principal building elevations.
- Color concepts for driveways, walkways, perimeter walls and fences.

3.7 Exterior Materials

Exterior materials and finishes must be consistent with traditional construction.

Appropriate Materials

- Concrete frame construction with stone, concrete block or structural tile infill.
- Smooth, hand-trowelled plaster exterior finish.
- Local stone masonry or exterior veneer, with recessed or concealed mortar joints.
- Solid wood entry doors.
- Wood or dark anodized aluminum window frames.
- Clear or tinted glazing in gray or bronze colors.
- Wood "Mousharabia" window grills.
- Curved stone or decorative ceramic tile details.
- Mud brick national stone with traditional joints.

Unacceptable Materials

- Exposed concrete or concrete masonry.
- Exposed metal columns and posts.
- Ribbed or corrugated metal, plastic, fiberglass or glass-reinforced concrete siding, panel systems or roofing.
- Clay or concrete roof tile, exposed built-up roofing.
- Clear aluminum or galvanized metal door and window frames.
- Reflective glazing.
- Heavy textured or swirled plaster finishes.
- Space frame structures.

3.8 Courtyards

Courtyards are key components in traditional Middle Eastern building design that offer private outdoor spaces sheltered from the climate. The use of courtyards is recommended in any new development.

Appropriate Courtyard Design

- Exterior space enclosed on a minimum of 2 sides by building forms.
- A covered open space, or portico, formed by an extension of the building roof over columns or arches on at least one side of the courtyard.
- Stone or tile paving, with planting primarily in pots or raised planters.
- Stone or ceramic tile trim in traditional patterns on doors, windows, arches, stairs and planters.
- Optional entry passage leading to the courtyard from the street entry.
- Optional traditional fountain.
- Canopy shade tree.

3.9 Roofs

Roof design must reflect traditional construction.

Appropriate roof Design

- Flat roofs behind raised level parapets.
- Multiple roof and parapet levels.
- Domes and vaults require special permission.
- Shed roofs only in industrial zones.

Unacceptable Roof Design

- Pitched roofs.
- Clay or concrete roof tiles.
- Corrugated metal roofing.
- Exposed wood or metal trusses.
- Exposed concrete beams and shapes
- Exposed built-up roofing
- Exposed skylights.
- Exposed roof drainage.

Flat roofs must be concealed behind parapets that extend at least 1 meter above the roof level.

Skylights, solar panels, vents and rooftop mechanical equipment must be concealed behind the roof parapets.

Clothes drying lines and exterior storage are not permitted with touristic zone on rooftops unless screened from nearby buildings.

Rooftop access stair enclosures, trellises and shade structures must be designed as part of the massing of the building. Color and materials must match adjacent building walls.

Roof drainage must be contained inside the roof parapet and directed down drainage pipes concealed inside the building. No external drain pipes are permitted. Overflow scuppers at the parapet are permitted, but must be located on the side or rear facades and incorporated into the design of the facade.

3.10 Windows

Windows must reflect traditional construction techniques.

Appropriate Window Design

- Arched or rectangular window openings with vertical proportions.
- Window opening expressed as a deep recess in a thick wall.
- Balance of wall and window surface areas.
- Variety in window size.
- Coordination of head or sill heights with floor levels.
- Wood or dark anodized aluminum frames.
- Clear or tinted glazing in gray or bronze colors.

- Optional use of wood or stone lintels and sills in traditional forms.
- Optional use of raised stone or plaster window opening frames in traditional wide rectilinear proportions.
- Optional use of wooden "Mousharabia" window screens.
- Wrought iron security bars in traditional Islamic design.
- Security shutters integrated into recessed window opening.
- Accent window frame colors require special permission.
- Awnings require special permission.

Unacceptable Window Design

- Horizontal window proportions
- Frame flush with exterior wall surface.
- Large areas of glazing.
- Arbitrary window size and placement.
- Clear aluminum and galvanized metal frames.
- Sloped glazing and greenhouse shapes.
- Reflective glazing.
- Rose, gold or copper-colored glazing.
- Exaggerated or stylized window frames and decoration.
- Tacked-on security bars and shutters

3.11 Doors

Entry doors should be clearly defined and inviting and reflect tradition local Arch.

Appropriate Entry Door Design

- Protected, shaded, door location.
- Clear sequence of entry area spaces.
- Integration with overall building form.
- Doorway opening expressed as a deep recess in a thick wall, or trimmed with a raised stone or plaster frame.
- Wood entry door and frame with inset panels or rounded nail head design motif.
- Sliding glass doors balconies must be recessed and have wood or dark anodized aluminum frames.
- Solid metal doors require special permission

Unacceptable Entry Door Design

- Abrupt entry space.
- Doorway flush with wall surface.
- Tacked-on entry alcove.
- Plain, unarticulated door surface.
- Exaggerated forms and colors.
- Clear aluminum or galvanized metal frames.

3.12 Building Facades

Building facades must reflect a blending of traditional and contemporary design.

Appropriate Facade Design

- Horizontal proportions.
- Level roof parapets.
- Variation in wall plane.
- Vertical window openings in a variety of sizes.
- Expression of door and window lintels.
- Use of native stone on lower walls.
- Use of hand-trowelled plaster wall finishes on upper walls.
- Earthtone wall colors in varying shades.
- Interpretations of Islamic details

Unacceptable Facade Design

- Vertical proportions
- Sloping surfaces and parapets.
- Large, unbroken surfaces.
- Horizontal window proportions.
- Flush doors or windows
- Heavy texture or swirled plaster finishes.
- Exposed concrete and metal.
- Bold colors on primary surfaces, prior approval required.
- Decorations and details that do not reflect local and total traditional Arch. traditions.

3.13 Side and Rear perimeter Walls and Fences

- Side yard walls on common property lines must be located inside the property line, unless a shared wall, centered on the property line, is mutually built by adjacent landowners.
- A simple fence in a contemporary native village style may be placed on top of a low wall, or used in lieu of the wall, up to a maximum height of 2 meters above grade.

3.14 Retaining Walls

- Retaining walls are limited to a maximum height of 2 meters above natural grade.
- Slope greater than 2 meters in height are to be treated with multiple, tiered retaining walls separated by a planter strip at least 1.0 meter wide.
- Retaining walls must be faced with native stone or plaster, unless otherwise approved. Exposed concrete, concrete masonry, adobe or brick are not acceptable.

- Retaining walls close to property lines may not adversely affect grades, walls, drainage, view, or privacy of adjacent parcels or public frontages.
- When a retaining wall is required along the side property line between two lots at different levels, the maximum combined height of the retaining wall and side yard wall is 3 meters above the lower lot level.

3.15 Building Setback

All Building setbacks establish the relationship of buildings to the Dead Sea beach, environment preserves, streets, property lines and adjacent development. They provide buffer zone and establish outdoor spaces and landscape areas. Setback may vary according to land use and the location of the development site.

The attached table indicating suggested setbacks and other requirements.

3.15.1 Landscape Areas

All building setback areas within development sites are designated as landscape zones. Landscape zones are limited to planting, driveway, walkway, patio, terrace, game court and swimming pool installation only.

3.15.2 Natural Areas

Natural areas, such as steep slopes, ridgelines, wadi drainage channels and environmental may be designated adjacent to or within a development site. No development is allowed within these zones.

Any trees, rock outcrops or other natural features within a project site that are designated for preservation must be retained in their natural state.

3.15.3 Dead Sea Beach Protection Zone

A 50 meter wide beach protection zone extends from the mean high water level inland along the waterfront. The purpose of this zone is to preserve the natural continuous environment of the Dead Sea beach, provide uninterrupted public access and circulation along the beach, and prevent construction of solid jetties, walls and bulwarks that disrupt either the flow of currents and Dead Sea beach stand along the shoreline and access to the public.

For new construction, no development is allowed in this area without special permission, except soft plantings of palms, shade trees, shrubs and ground covers, and small, single post shade structures.

3.15.4 General Building Setback Criteria

Building setbacks vary according to whether the location of the development site is in JV, the coastal zone and industrial zones. Specific criteria for each zone are given in **Section 3.16**. The following criteria are applicable to all locations.

- No setbacks are required for buildings with interior courtyards and windows, and a maximum height of 2 stories.
- No side yard setback are required for side building facades with no windows.

- The setback, measured at ground level, for all buildings with external, windows on any street frontage parcel line and from a side or parcel line, plus one additional meter for each building level above two.
- The minimum setback from a designated natural area or environmental preserve is 6 meters.
- Where a zero setback is allowed, the building must be placed either on the parcel line, or at a minimum setback of 2 meters. Setbacks between zero and 2 meters are not allowed.
- Attached table indicates floor area ratio, setbacks, no. of floors and height for the different zones.

3.16 Service Areas

- All objectional uses and noises shall be screened from adjacent development sites and public street, walkway or beachfront view.
- All service areas, delivery areas, and exterior mechanical equipment must be screened from horizontal off-site view by walls or opaque landscaping. This includes:
 - Truck docks and parking areas.
 - Trash collection and outdoor storage areas.
 - Air conditioning units, Fuel tanks, water tanks.
- Water purifiers, pumping equipment, TV and radio antennas, satellite dishes,
- Irrigation controllers, backflow preventers, Clothes drying and outdoor work areas
- All exterior generators of sound, including air conditioning compressors, water filters and outdoor speakers must be shielded to protect neighbors.
- Wall or window-mounted air conditioning units are not allowed,

3.17 Development Intensity

Floor area Ratio (FAR)

The density of residential or tourist site development may be limited by a designated number of residential or hotel units assigned to the site.

The density of commercial and other non- residential development may be limited by a floor area ratio (FAR) factor assigned to the site.

The FAR of any site is the ratio of total gross building floor area to total gross site area.

3.17.1 Plot Coverage Ratio

The intensity of development may be also be limited by a plot coverage ratio assigned to the site.

This is the ratio of total gross building footprint area to total gross site area.

3.17.2 Building Heights

Building heights throughout the JV are to be kept low to maintain the traditional village scale of JV and to preserve views for buildings on slopes. In general, buildings are limited to 2 stories for residential zones, 5 floors for hotel, 3 floors for commercial, offices, industrial and touristic zones (not more).

Primary Standards:

- Signage – unobtrusive and of appropriate scale; no neon allowed.
- Lighting – limited, low level lighting; ground rather than pole lights for public buildings; no hanging fluorescent tubes.
- Water conservation and recycling – Water holding tanks or cisterns to capture rainwater, and native plantings or Xeriscaping to save water are mandated for all buildings; water recycling is mandated for commercial/tourism facilities.
- Landscaping – Celebrate the Dead Sea’s unique and indigenous landscape. through utilization of native and non-invasive plant materials with low maintenance/irrigation requirements (e.g., acacia, ficus, agave, aloe, artemesia, and native grasses); non-intrusive root systems near or on archaeological sites.
- Sidewalks – 1.5 meters wide and uninterrupted by tree plantings; shade trees to be planted outside the public walkway area to provide comfortable passage.
- Pedestrian Access (commercial and tourism developments) – Pedestrian paths between buildings required to discourage vehicular use.
- Infrastructure – designed to not degrade the environment; land form will be returned to original state.

3.17.3 Secondary Standards – Encouraged

- Traditional wood or stone lintels
- Traditional beduoin tents
- Traditional wrought iron designed security bars
- Traditional courtyards
- Adobe architecture and its thermal advantages
- Wind tunnels for ventilation
- Solar panels and solar hot water heaters
- Awnings to reduce solar glare
- Screening of roof structures such as dishes
- Handicapped access where reasonable and feasible
- Buildings sited for views of the Dead Sea or other natural amenities where possible
- Adaptive reuse of buildings with cultural or historic significance with training for local people.

Table 6 presents the architectural design guidelines recommended for the Jordan Valley.

Table 6: Architectural Design Guidelines – Jordan Valley

Land use	Plot Size (m ²)	Max. Area Ratio (%)	Min. Set Backs (m)		Max. Height		Remarks, Special Conditions
					Floors	Meter	
1) Plantation	10,000	5%	15		2	8	
2) Residential							
	A 2,000	25%	5		2	8	Parking 1 car/house
	B 1,000	35%	4		2	8	or flat in all zones
	C 500	45%	3		2	8	
3) Commercial & Offices			Front	Sideback			
	A 2,000	40%	4	5	3	12	4m/ Front Arcade
	B 1,000	50%	4	4	3	12	4m/ Front Arcade
	C 500	60%	4	3	3	12	4m/ Front Arcade
							(Parking 1 car/200m ²)
4) Industrial	A 2,000	50%	5		3	12	(Double setback from residential)
	B 1,000	60%	4		3		(Double setback from residential)
5) Touristic			Front	Sideback			
- General	A 5,000	25%	10	5	3	12	Parking 1 car/ Room
	B 3,500	35%	8	4	3	12	Parking 1 Car/2 Rooms
	C 2,000	40%	6	3	3	12	Parking 1 Car/3 Rooms
- Dead Sea hotels and touristic facilities	50,000	25%	15		5	20	Parking 2 cars/ Room

Notes:

- * In the Northern zone, natural stone is available, stone facades can be a condition, such as 50% min of building elevations cladding materials.
- * Wadi gravel & boulders are available and can be used for external walls and works (can be encouraged) especially in middle and southern part of the valley
- * Special incentives can be given to use environmental solution i.e. domes, vaults for residential and touristic buildings, such as extra heights or area ratio, this can be developed to an architectural feature especially in the middle and southern part of the valley (i. e Deir alla domed house) as an example of this environmental controlled feature.

3.18 Cultural Heritage Protected Zones

A Number of archaeological important sites are identified as significant natural, heritage within the Jordan Valley and as such are to be protected, Dair Alla area archaeological sites and Tabqat Fahel in addition to the tombs of the Venerable Companions of the Profit Mohammed along the valley, Baptism site, Profit Lut (Safi), North Hemmeh hot springs and Spa site resort.

General protection criteria:

- No development allowed inside these site.
- Buffering required from adjacent uses.
- Protection from any source of pollution air, water, vibration, sound, color.
- A buffer zone of 6-30 meter is required around the site adjacent uses depending on size and importance of each site.
- Vehicle access is limited to designated parking areas.

3.19 Touristic Roads

There are many roads leading to touristic and archaeological sites that should be maintained in good condition all over the year and kept clean and clear for easy and acceptable accessibility of local and foreign tourists and visitors.

General Protection Criteria

The following general criteria must be observed to protect and maintained these access roads to these sites

- Wide right-off-way not less than 10 meters Each side
- No industrial or pollution (color, noise look, air) generating activities along these roads
- Prepare signage and informative information boards along these roads should be clear and maintained in good look.

4 REFERENCES

4.1 References of Architectural Design Guidelines

Wilber Smith, Consolidated Consultants, and Community Development Group, *Aqaba Design Guidelines 2000*, (Jordan Industrial Estate Corporation (JIEC), Jordan, 2001).

ANNEXES

ANNEX 1

PROJECT INFORMATION MANAGEMENT

Annex 1: Project Information Management

Information management tasks provided were as follows:

- Collecting and organizing baseline data.
- Keeping track of all research data from team members, to be incorporated into the baseline data through either a web based or paper based system.
- Disseminating information required by the Consultants as reading material from baseline data.
- Coordinating with the Project Manager and continually informing the team and the Client throughout the duration of the project.

The information management specialist also assisted in incorporating within the overall baseline database the results of the photo survey of the study areas.

The reference material for the project received from JVA presented in **Table 7** were disseminated to all the project team members for their review.

Table 7: Bibliography provided by JVA at beginning of project

No.	Title	Author	Date
1	Jordan Valley Rural Sanitation Study Conceptual Report	Consult and Sigma Consulting Engineers	September 1995
2	An Interim Evaluation of the Jordan Valley Development Effort: 1973-1980	Dajani, Jarir; Hazleton, Jared; Rhoda, Richard; and Sharry, Davis	1980
3	A Plan For Rehabilitation And Development of the Jordan Valley	National Planning Council	1972
4	A planning and Analysis unit for Jordan Valley Authority	Dajani, Jarir S.	October 1979
5	Activity Report No:44 Assessment of Jordan Valley Rural Sanitation Feasibility Study	Loredo, David and Thompson, Richard	February 1998
6	Development Report for Town Planning in the Jordan Valley	PADCO	1976
7	Interim Evaluation of stage 1 of the Jordan Valley Development Plan: A proposed Scope of Work	Dajani, Jarir S.	1980
8	Project Impact Evaluation for USAID. "Jordan: Irrigation and Area Development in the Valley	Sharry, David G.	February 1981
9	Jordan Rift Valley Development Symposium Materials, Amman, Jordan.		April 24-26, 1995
10	Jordan Rift Valley Steering Committee of Trilateral Economic Committee: Jordan Rift Valley Master Plan, Volume II Master Plan Project	The HARZA JRV Group	August 1997
11	Summary Jordan Valley Development Plan	Jordan Valley Commission	1976
12	Jordan Valley Development	Jordan Valley Commission	1980
13	Project Concept Document Phase A	Grierson, Iain T.	November 2000
14	Alternatives of using Wadi Mujib Water	Jordan Valley Authority	December 1984
15	Jordan Rift Valley Improvement Project-Project Identification	Davey, John C.	February 2001
16	Jordan Rift Valley Steering Committee of Trilateral Economic Committee: Jordan	The HARZA JRV Group	August 1997

Jordan Valley Preliminary Land Use Master Plan Project

No.	Title	Author	Date
	Rift Valley Integrated Development Study-Final Report-Sector Studies		
17	Integrated Development of the Jordan Rift Valley	World Bank	October 1994
18	"Jordan Rift Valley Steering Committee of Trilateral Economic Committee: Jordan Rift Valley Master Plan, Volume II-Master Plan Projects. Description Master Plan Projects	The HARZA JRV Group	August 1997
19	Jordan Rift Valley Steering Committee of Trilateral Economic Committee: Jordan Rift Valley Integrated Development Study-Sector Studies	The HARZA JRV Group	August 1997
20	Education and Information Program to Improve Irrigation Water Use Efficiency	USAID RFP	September 2002
21	A History of Jordan and its Tribes (University of Miami Press Coral Gables Florida)	Peake, Pasha	1958
22	Housing for Low Income Rural Families in Less Developed Countries: A Case Study	Ware, John Alex	1978
23	Industrial Pollution Control Project in Jordan, Summary Report	COWIconsult, and Royal Scientific Society	1994
24	The Study on the Tourism Development plan In Hashemite Kingdom of Jordan. " Progress Report (2)	JICA in association with Nippon Koei Co. Ltd, Padco Co, Ltd, Regional planning International co. Ltd	October 1995
25	Jordan Valley Improvement Project-"Project Formulation Report" Annex E: Land Use Planning	Jordan Valley Authority	September 2001
26	Protection of the Environment and Conservation of nature in Jordan	Deutsche Gesellschaft fur Technische Zusammenarbeit (GTZ)	1995
27	Jordan Rift Valley Integrated Development Study Tourism Development Areas	The HARZA JRV Group	
28	Jordan Export Trade Services (ETS) Program. Final Report	King, Spencer T. and Vogel, Rudy N	August 1993
29	Jordan Foreign Direct Investment Climate	Foreign Investment Advisory Service	November 1992
30	Jordan Rift Valley Integrated Development Study. Maps and Photographs	The HARZA JRV Group	
31	A Baseline Socio-economic Study of the Southern Ghors and Wadi Araba	Jarir Dajani	1979
32	Settlement Planning and Housing Recommendations for the Greater East Ghor Valley	Planning and Development Collaborative International	November 1973
33	Strategic Planning Program SPP-Phase IT	Bosley, Roy E	March 2002
34	The Agricultural Policy Charter	Ministry of Agriculture	October 1993
35	Jordan Valley Authority Physical Planning Initial Consultancy-Final Report	Achievement of Market-Friendly Initiatives and Results Program (AMIR 2.0 Program)	April 2003

No.	Title	Author	Date
36	The Development Project of the North Suweimeh Extension at the East Coast of the Dead Sea	Sigma Consulting Engineers	1998
36.a	Economic and Financial Feasibility Appraisal North Suweimeh Development Areas		1998
36.b	Master Plan and Detailed Design of Primary Infrastructure Networks		1998
36.c	Market Evaluation and Assessment North Suweimeh Development Areas		1998
37	Tourism Development Project of the East Coast of the Dead Sea (SPA)		1996
37.a	Market Evaluation and Assessment Suweimeh and Zara Development Areas		1998
37.b	Environmental Assessment for the Extension of North Suweimeh Development Areas		1997
37.c	Master Plan and Detailed Design of Primary Infrastructure Networks Suweimeh Development Area		1996
37.d	Environmental Impact Assessment		1996
37.e	Economic and Financial Feasibility Appraisal Suweimeh and Zara Development Areas	Sigma Consulting Engineers, THIS-Toutsme et Hotellerie Sauer Int. France	1996
38	Jordan Rift Valley Improvement Project		
38.a	JRV Improvement Project- Project Identification Summary Review Report	John Davey	2001
38.b	JRV Improvement Project-Project Concept Document- Phase A, Land Use Planning	Lain Grierson	2000
39	Strategic Planning		
39.a	Strategic Issues Facing the Jordan Valley Authority	JVA	2000
39.b	JVA Internal Environment Assessment-Final Interim Report		2000
39.c	External Environmental Assessment Strategic Social Issues	Dr.Musa Shteivi	2000
39.d	Analaysis of Political-Legal and Socio-Cultural Aspects of the External Environment of JVA		2000
39.e	JVA Stakeholders Assessment- Final Report		2000
39.f	JVA News Letter		
39.g	Strategic Plan for Jordan valley Authority 2003-2008, Action Plan	JVA	2002
39.h	Factors that affect the External Environment of the JVA		
40	Study on Strategical Aspects of Irrigation Water Management in the Jordan Valley	GTZ	1998
41	JRVIP Phase A – Report 1 Institutional Reform	Hyam Mallat (Ministry of Water and Irrigation;Jordan Valley Authority)	February 2001
42	JRVIP Phase A – Report 10 - Engineering	John C. Davey (Ministry of Water and Irrigation;Jordan Valley Authority)	February 2001
43	JRVIP Phase A - Report 2- Water Resources	Odeh Al-Jayyousi (Ministry of Water and Irrigation;Jordan Valley Authority)	February 2001

No.	Title	Author	Date
44	JRVIP Phase A - Report 4 Agronomy	Mohammad T. Hanbali (Ministry of Water and Irrigation; Jordan Valley Authority)	February 2001
45	JRVIP Phase A - Report 6 -Tourism And Other Economic Activities	Rami Daher (Ministry of Water and Irrigation; Jordan Valley Authority)	February 2001
46	JRVIP Phase A - Report 7- Land Use Planning	Iain. T. Grierson (Ministry of Water and Irrigation; Jordan Valley Authority)	February 2001
47	JRVIP Phase A - Report 9 -Social	Harb A. Hunaiti (Ministry of Water and Irrigation; Jordan Valley Authority)	February 2001

After review of the references presented in **Table 7**, the team members requested further reference material that are presented in **Table 8**.

Table 8: Bibliography requested by team members

No.	Title	Author	Date
1	JRVIP Phase A - Report 9 -SOCIAL	Harb A. Hunaiti (Ministry of Water and Irrigation; Jordan Valley Authority)	February 2001
2	Summary Report on Sinkholes- Production Expansion/ Second Phase	The Arab Potash Company Ltd.	2/1/1994
3	Assessment of the Hazard of Subsidence and Sinkholes in Ghor Al-Hadotha Area - Final Report	University of Jordan, Center for Consultation, Technical Services and Studies (Amman-Jordan)	February 1995
4	Use of ground-penetrating radar for assessment of potential sinkhole conditions: an example from Ghor al Haditha area, Jordan	Awni Batayneh, Abdelruhman Abueladas, & Khaled Moumani	2002
5	The lowest place on Earth is subsiding - An InSAR (interferometric sunthetic aperture radar) perspective	Gidon Baer, Uri Achattner, Daniel Wachs, David Sandwell, Shimon Wdowinski, & Sam Frydman	2002
6	Dead Sea sinkholes - an ever-developing hazard	Y. Arkin & A. Gilat	1999
7	Developing Dead Sea Sinkholes Revealed by ground penetrating radar	Yaccov Arking, Arie Gilat, & Lev Kofman	
8	Disintegration of Marl Slopes in Israel	Yaacov Arkin	1988
9	Sinkhole hazards along the eastern Dead Sea shoreline area, Jordan: a geological and geotechnical consideration	S.A. Taqieddin, N. Abderahman, & M. Atallah	2000
10	A sinkhole near the Damascus Gate, Old City of Jerusalem	Y. Arking	1984
11	Geology and Geotechnics of the Akbara Bridge Site, Zefat Northern Israel	Yaacov Arkin, & Lucian Michaeli	
12	Analysing potential cliff erosivity from ERS SAR satellite imagery	N. Manspeizer, A. Karnieli, Y. Arkin, & J. Chorowicz	2001
13	Automatic Extraction and Evaluation of Geological Linear Features from Digital Remote Sensing Data Using a Hough Transform	Amon Kamieli, Amon Meisels, & Yaacov Arkin	1996
14	Fault Traces in the Arid Arava Valley Floor, Israel, Revealed by RADARSAT surface Roughness Classification	Y. Arkin, C. Ichoku, & A. Karnieli	1999
15	Large-scale tensional features along the Dead Sea-Jordan Rift Valley	Yaacov Arkin	1988
16	Lisan Sediment porosity and porewater as indicators of original lake lisan composition	Ya'acov Arkin, & Abraham Tarinsky	1981
17	Micro Gravity Survey for Dike-18-station	Mohammad Hassounh (Natural	October 1996

No.	Title	Author	Date
	6+200 in the Lisan Peninsula of the Dead Sea basin	Resources Authority; Geophysics and Technical Services Directorate; Geophysical Studies Division)	
18	Collapse Hazard near projected dike west of the Lisan Penninsular - Dead Sea	P. Taponnier (Arab Potash Company Limited)	January 1993
19	Extension West of Lisan Peninsular Sinkholes along access road	D.J. Knight (Arab Potash Company Limited)	January 1993
20	Subsidence and Sinkholes along the Jordanian coast of the Dead Sea: contribution of gravimetry and radar differential intererometry	D. Closson, N. Abou Karaki, M. Hussein, H. Al-Fugha, A. Ozer, A. Mubarak	2003
21	Brackish Water Project- Water Monitoring Report (Final Report)	GTZ	June 2003
22	Brackish Water Project- Soil Properties Maps in the Project Area (Final Report)	GTZ	June 2003
23	Water Authority- Jordan Valley Authority Annual Report of 2002 (in Arabic)	Ministry of Water and Irrigation	2002
24	Economic and Social Development Plan 1993-1997	Ministry of Planning	
25	Economic and Social Development Plan 1986-1990 (In Arabic)	Ministry of Planning	
26	Baseline Ecological Survey of Extension and Buffer Zone of Dana Reserve in Wadi-Araba	RSCN; UNDP/World Bank-Global Environment Facility (GEFII) Project for Conservation of Dana Wildlands	July 1997
27	Dana Nature Reserve- Wadi Araba Gazelle Survey July-September 1995	RSCN; UNDP/World Bank-Global Environment Facility (GEFII) Project for Conservation of Dana Wildlands	September 1995
28	Ecological and Economical Values of the Acacia in Wadi Araba	RSCN; UNDP/World Bank-Global Environment Facility (GEFII) Project for Conservation of Dana Wildlands	1996
29	Report on the Land use in Wadi Araba	Obtained From RSCN	Unknown
30	Paper on Dead Sea Sparrow	Obtained From RSCN	Unknown
31	The status of <i>Garra ghorensis</i> in Jordan: distribution, ecology and threats	Nashat Hamidan & Sayeeda Mir	2003
32	Mujib Nature Reserve Tourism Development Plan (Draft)	RSCN	Unknown
33	Mujib Nature Reserve (In Arabic)	Unknown	Unknown
34	Information on Archaeological sites within Jordan Valley	Department of Antiquities	3/25/2004
35	Complete Survey for the Southern Ghor (In Arabic)	Centre for Advancement of production at Ghor Safi (Eng. Sahem Al-Tarawneh)	2003/2004
36	Yarmouk River Reserve Tourism Development Plan	RSCN	2001
37	Reclaimed Water Project- Baseline Report	JVA and GTZ	2003
38	Brackish Water Project-Guidelines for Brackish Water Irrigation in the Jordan Valley	JVA and GTZ	2003

No.	Title	Author	Date
39	Mujib and Southern Ghors Irrigation Project - Stage II Environmental Comparison of Headworks Options and Impact Mitigation Programme	Dar Al-Handasah and Harza for Jordan Valley Authority	November 1999
40	Environmental Assessment of Agricultural System in the Jordan Valley	Ministry of Agriculture	May 2003
41	Aqaba Architectural Design Guidelines-Chapter 6	From Eng. Ramzi Kawar	
42	Let the Dead Sea Live Concept Document towards the Dead Sea Basin Biosphere Reserve and World Heritage Listings	Friends of the Earth-Middle East	2000
43	Arab Potash Company Annual Report, 2002	Arab Potash Company	2002
44	Optimization of Seawater RO System Design	Wilf M. and Klinko K.	2001
45	Improved Performance and Cost Reduction of RO Seawater Systems Using UF Pretreatment	Wilf M. and Klinko K.	2001

Table 9 presents the data that was obtained or requested from JVA or another entity.

Table 9: Data obtained for the project

No.	Data Information	Source	Date
1	Pictures from Photosurvey (from Umm Qais in the north to Fifa in the south) by Ms. Sandy Chesrown/Land Use Planner	JVA	2003
2	Roads, Electrical and Water Infrastructure of Sigma Plan	JVA	
3	GIS layers: <ul style="list-style-type: none"> da1-39a49-54 da40-48 fun governorates Jordan boundary Projects Dams_suggested(H) Villages Dams DeadSea-tiberias Roads-Pal JVA system points KAC KAC-allpoints Wwtp JVA_mandate_region(A) Baptism Baptism-road DA51-cropped-baptism Important area bird(A) proetcted areas(A) JADIS_North Major-cities Potash-regions Water harvesting wells-jva springs-jva Data from DLS on parcels ownership Data from Planning & Management Unit in MWI 	JVA	2004

Jordan Valley Preliminary Land Use Master Plan Project

No.	Data Information	Source	Date
	<ul style="list-style-type: none"> ▪ Schools ▪ New village 		
4	Satellite Image of Jordan Valley [7428-2000.ecw] - Resolution of 15 by 28 m	JVA	
5	Coordinates for the Reserves and Proposed Protected Areas	RSCN	2004
6	Cropping Pattern at JV and Projects	JVA	3/22/2004
7	Project Brochure	JVA	3/23/2004
8	Kafa' Project	JVA	3/24/2004
9	Movepick Water Consumption and Wastewater Generation	Movenpick	3/23/2004
10	Cropping Pattern and Water Consumption	Eng. Tayseer Ghzawi	3/24/2004
11	Archaeological Information on significant sites in Jordan Valley	Fom JVA	3/25/2004
12	Villages GIS Layer	Fom JVA	3/26/2004
13	Red-Dead Canal alignment from Harza Study	Fom JVA	14/04/2004
14	Proposed Dead Sea Coastal Line road layout	Fom JVA	21/04/2004
15	Alignment for the Ardani Road	Fom JVA	28/4/2004
16	Location map for quarries in Jordan Valley	Fom JVA	28/4/2005
17	Letter indicating the capacity of eastern coast Dead Sea Hotels	Fom JVA	28/4/2006

ANNEX 2 INTERVIEW RECORDS

Annex 2: Interview Records

1 AGRICULTURAL RESOURCES INTERVIEWS

Interview Record	
Interviewee Information	
Name:	Mohammad Suliaman Sudi
Occupation:	Member of Farmer Association and a Citrus Farmer
Name of Institution: (in English & Arabic)	Farmer Association اتحاد المزارعين
Institution Contact Information	
Telephone:	+962 4844 566 79
Fax:	-
E-mail:	
Interview Information	
Place:	Irbid
Date:	March 27 th , 2004
Time:	11:00 a.m.
Interview Record	
<p>The interviewee answers to the questions can be summarized as follow:</p> <ol style="list-style-type: none"> 1. the main obstacle of agriculture sector in the JV is marketing followed by the quantity of water 2. the priority for water distribution should go to agriculture because it is the main source of income for the local community in the JV. In addition he stresses that more water should be given for agriculture 3. he supports the idea of given different prices for different water quality and give also lower price for the agriculture sector compared to tourism and industry 4. he agrees that treated wastewater can be successfully for irrigation given a proper management is practices 5. he agrees to replace crops with high water needs by those with lower needs but ot exclude citrus because of the difficulties of doing so and the damages to the farmers that may cause. In addition he stress the point that for any new crop that could be introduced the marketing must be ensured by the government 	
Interviewer Name: Dr. Munir Rusan	

Interview Record	
Interviewee Information	
Name:	Ali Gharaibeh
Occupation:	Director of Deir Alla Research Station
Name of Institution: (in English & Arabic)	Deir Alla Research Station محطة ديرعلا للأبحاث الزراعية
Institution Contact Information	
Telephone:	+962 5 357 003
Fax:	+962 5 357 3201
E-mail:	-
Interview Information	
Place:	Irbid
Date:	March 25 th , 2004
Time:	9:00 p.m.
Interview Record	
<p>The interviewee answers to the questions can be summarized as follow:</p> <ol style="list-style-type: none"> 1. the main obstacle of agriculture sector in the JV is marketing followed by the quantity of water 2. the priority for water distribution should go to agriculture because it is the main source of income for the local community in the JV 3. he supports the idea of given different prices for different water quality and give also lower price for the agriculture sector compared to tourism and industry 4. he agrees that treated wastewater can be successfully for irrigation given a proper management is practices 5. he strongly disagree with replacing tomato and citrus by other crops that have lower water needs as this is part of the culture and tradition farming 	
Interviewer Name: Dr. Munir Rusan	

Interview Record	
Interviewee Information	
Name:	Roy Ventura
Occupation:	Senior Engineer (Office of Water Resources & Environment)
Name of Institution: (in English & Arabic)	USAID الوكالة الأميركية للإنماء الدولي
Institution Contact Information	
Telephone:	+962 6 590 6255
Fax:	+962 6 592 0143
E-mail:	rventura@usaid.gov
Interview Information	
Place:	Amman
Date:	April 7 th , 2004
Time:	9:00 a.m.
Interview Record	
<p>The interviewee answers to the questions can be summarized as follow:</p> <ol style="list-style-type: none"> 1. the main obstacle of agriculture sector in the JV is the improper crop selection where the current crops are of high water requirement. He suggest ot adopt crops with less water needs but at the same time be very careful not to make ay damage to the social and life of the farmers. 2. the priority for water distribution should go to the tourism and industry related to the tourism and take advantages of the potential tourist features in the JV 3. he does not support the idea of given different prices for different water quality because of the difficulties of executing such task 4. he agrees that treated wastewater can be successfully for irrigation and for industry and that can save potable water for domestic sector. However, he emphasized the point not to reduce the fraction of water currently allocated for agriculture but not to exceed it 	
Interviewer Name: Dr. Munir Rusan	

2 SOCIAL INTERVIEWS

Interview Record	
Interviewee Information	
Name:	Mr. Omar Al-Hmoud
Occupation:	Program Officer/ EPP (Enhanced Productivity Programme)
Name of Institution: (in English & Arabic)	Ministry of Planning and International Cooperation (MOPIC) وزارة التخطيط والتعاون الدولي
Institution Contact Information	
Telephone:	+962 6 464 4466
Fax:	+962 6 464 4536
E-mail:	omar.h@map.gov.jo
Interview Information	
Place:	MOPC
Date:	April 14 th , 2004
Time:	9:30 a.m.
Interview Record	
<ul style="list-style-type: none"> • Ongoing Studies: <ul style="list-style-type: none"> ○ A socio-economic study by Wakkas conducted at Northern Shuneh. This study is a joint one among GTZ, MOPIC, and City and Village Development Bank (CVDB). Dr. Mohammad Kazem may be contacted to get a copy of this study; he is available at GTZ office at CVDB. ○ Currently JOHUD are doing a socio-economic study at area of Sheikh-Hussein. This study is submitted to MOPIC and Community Centres Association (CCA) which is headed by Dr. Sari Naser. This study did a baseline survey at Ghor Safi. Contact number for CCA is 06-4388324. ○ Jordan River Foundation (JRF) did a Participatory Rural Appraisal (PRA) as a need assessment study at Khazma. ○ JOHUD did a PRA in South Shuneh. The areas included and that are part of Jordan valley are Shuneh, Al-Karasreh, Jufeh, and Al-Nahda. Mr. Jamil Mohammad can be contacted at 06-5560741. • “Environmental Rest House” belongs to University of Jordan; a project called “Let’s try together”. • Regarding recommendations for employment, the above studies answers the question. • Training: IRADA through MMIS (a management contractor for MOPIC) conducted an Enhanced Productivity Programme (EPP). As part of this programme, there are 21 Enhanced Productivity Centres (EPCs) part of which are available at Jordan Valley. Ms. Salwa Bamieh is responsible for the project and her contact number is 06-4649040. <p>A list of ongoing projects in the Jordan Valley will be faxed soon to Consolidated Consultants Office.</p>	
Interviewer Name: Dr. Fouzi Sahawneh	

Interview Record	
Interviewee Information	
Name:	Dr. Taghreed Abu Hamdan
Occupation:	Director – Monitoring and Evaluation Unit
Name of Institution: (in English & Arabic)	The Jordanian Hashemite Fund for Human Development الصندوق الأردني الهاشمي للتنمية البشرية
Institution Contact Information	
Telephone:	+962 6 556 0741
Fax:	+962 6 582 7350
E-mail:	taghreed@johud.org.jo
Interview Information	
Place:	The Jordanian Hashemite Fund for Human Development
Date:	April 14 th , 2004
Time:	
Interview Record	
<ul style="list-style-type: none"> Refer to attachment below. 	
Interviewer Name: Dr. Fouzi Sahawneh	

The Jordanian Hashemite Fund for Human Development / Monitoring and Evaluation Unit

Programmes and Projects implemented by the Jordanian Hashemite Fund in the Ghors (Jordan Valley)

Introduction:

The Jordanian Hashemite Fund has 50 centres in 11 governorates. Various development programmes are provided to the local community with respect to childhood, development of natural resources, economic strengthening, youth participation, information technology for development purposes, proper judgement, and women's right and support.

In the Ghors (Jordan valley), the Fund has 5 centres that present the following programmes and projects to the local community:

1. Princess Basma Centre for Development/ Ghor Safi:

Childhood: Children's nurseries, parents' awareness, parents' involvement with child nurseries, and summer camps and clubs for children.

Women programs: Awareness and education in various fields, women committees (volunteer committees supporting the center and connecting it with the local community in order to get to know their opinions and needs for training programs), local rural market, and training on food processing.

Information Technology:

Youth: youth committees

On-going projects:

- Development of the use irrigation water at the farm level
- Family planning and the role of women in development
- Community participation in sustainable management of water at the farm level

2. Princess Basma Centre for Development/Ghor Haditha

Childhood: Children's nurseries, parents' awareness, parents' involvement with child nurseries, and summer camps and clubs for children.

Women programs: Awareness and education in various fields, women committees (volunteer committees supporting the center and connecting it with the local community in order to get to know their opinions and needs for training programs), local rural market, and training on food processing.

Youth: youth committees

On-going projects:

- Development of the use irrigation water at the farm level
- Community participation in sustainable management of water at the farm level

3. Princess Basma Centre for Development/Ghor Al-Mazraa

Childhood: Children's nurseries, parents' awareness, parents' involvement with child nurseries, and summer camps and clubs for children.

Women programs: Awareness and education in various fields, women committees (volunteer committees supporting the center and connecting it with the local community in order to get to know their opinions and needs for training programs), local rural market, and training on food processing.

On-going projects:

- Development of the use irrigation water for agriculture
- Community participation in sustainable management of water at the farm level

4. Sheikh Hussein Center for Development- Irbid Governorates

Childhood: Children's nurseries, parents' awareness, parents' involvement with child nurseries, and summer camps and clubs for children.

Women programs: Awareness and education in various fields, women committees (volunteer committees supporting the center and connecting it with the local community in order to get to know their opinions and needs for training programs), local rural market, and training on food processing.

Agricultural Development: house gardens

On-going projects:

- Comprehensive Development Project

5. Princess Basma Centre for Development/South Shuneh- Balqa Governorate

Childhood: Children's nurseries, parents' awareness, parents' involvement with child nurseries, and summer camps and clubs for children. In addition, there is a therapy unit for children with special needs (disabled).

Women programs: Awareness and education in various fields, women committees (volunteer committees supporting the center and connecting it with the local community in order to get to know their opinions and needs for training programs), local rural market, and training on food processing.

Agricultural Development: house gardens

On-going projects:

- Original agriculture
- Environmental restaurant
- Women and their role in the conservation of sustainable environmental resources
- Community participation in sustainable management of water at the farm level

3 WATER RESOURCES INTERVIEWS:

Interview Record	
Interviewee Information	
Name:	Patrick Papania
Occupation:	Team Leader
Name of Institution: (in English & Arabic)	KAFA'A for sustainable irrigation water use
Institution Contact Information	
Telephone:	+962 6 566 7730, +962 77 805313
Fax:	+962 6 566 1263
E-mail:	ppapania@digiscape.com
Web Site:	www.kafaa.org
Interview Information	
Place:	KAFA'A Office
Date:	April 12 th , 2004
Time:	10:30 am
Interview Record	
<ul style="list-style-type: none"> • Since Oct. 2003 for three years • USAID Fund • The main objective is to increase the efficiency of water used in agricultural sector (through planting high value crops) as indicated by the project name • 4 Deliverables by KAFA'A to help the farmers to consumed water efficiently: <ul style="list-style-type: none"> ○ Provide practical and applicable information ○ Create income through sustainable approaches for local communities ○ Training the interested groups by Jordanian and International experts ○ Link Decision Makers with Communities • The main objective could be achieved through introducing proper crops pattern, advise to change farmers behaviour, marketing, management to use different water qualities, and others • Through the project, Policies regarding high income water consumption (Jordanian or International) will be reviewed and two new policies will be introduced • The project will consider Soil Quality, Water Quality, and Crops Pattern to produce high value crops • Areas to covered by the project are: <ul style="list-style-type: none"> ○ Jordan Valley ○ Amman-Zarqa Basin 	
Interviewer Name: Dr. Adnan Al-Salihi	

Interview Record	
Interviewee Information	
Name:	Mona Grieser
Occupation:	Chief of Party
Name of Institution: (in English & Arabic)	Water Efficiency and Public Information for Action (WEPIA)
Institution Contact Information	
Telephone:	+962 6 552 7893/5
Fax:	+962 6 552 7894
E-mail:	mgrieser@joinnet.com.jo
Interview Information	
Place:	WEPIA Office
Date:	April 8 th , 2004
Time:	2:00 pm
Interview Record	
<ul style="list-style-type: none"> • The project mainly deals with public participation in water savings through water saving devices, increasing efficiency, grey water reuse, format policies (e.g. flush rate), purification codes (e.g. water use for landscape), and others • The project consternates in two areas; <ul style="list-style-type: none"> ○ Tourist Activities ○ Grant Money to Communities • Deal with Format Policy for conservation water (construction laws), for example the flush rate • Hotels should use water conservation devices • Grey water to be used outside the house at areas of no sewerage network such as KaraK area (Shfaiera Al Sharqya) • Hotels only in Jordan Valley are covered by the project 	
Interviewer Name: Dr. Adnan Al-Salihi	

Interview Record	
Interviewee Information	
Name:	Mr. Philipp Magiera
Occupation:	
Name of Institution: (in English & Arabic)	GTZ – Water Sector Planning Support
Institution Contact Information	
Telephone:	+962 6 568 5389
Fax:	
E-mail:	
Interview Information	
Place:	Phone Interview
Date:	April 7 th , 2004
Interview Record	
<p>The Project “Water Sector Planning Support” is a national project for Jordan and is not directly related to Jordan Valley. Therefore, it was recommended to contact the following GTZ projects that are of direct relation to Jordan valley:</p> <ol style="list-style-type: none"> 1. Reuse of Reclaimed Water in Jordan Valley 2. Water Management and Irrigated Agriculture 	
Interviewer Name: Rola Quba’a	

Interview Record	
Interviewee Information	
Name:	Eng. Ali Adwan
Occupation:	Team Leader, Jordan Valley
Name of Institution: (in English & Arabic)	Water Resources Management in Irrigated Agriculture- WMIA/GTZ
Institution Contact Information	
Telephone:	+962 6 567 8926
Fax:	+962 6 567 8926
E-mail:	ali_adwan@wanadoo.jo
Interview Information	
Place:	GTZ Project Office at Jordan Valley Authority
Date:	April 7 th , 2004
Time:	11:00 a.m.
Interview Record	
<ul style="list-style-type: none"> • Project objective is to encourage farmers participation in management and distribution of irrigation water. • Mr. Regner is the Project Manager. • The project started in June 2001. It serves the Ministry of Agriculture and the Jordan Valley Authority to establish some institutional committee for farmers for distribution of water. • The second phase of the project started in January 2004 and its duration is three years. There is also a third phase for this project. • The strategy is to improve irrigation management through farmers participation. However, the project does not have a set model for the form of participation. It only encourages farmers to form cooperative communities leaving them the freedom of determining the form of this participation. 	
Interviewer Name: Dr. Adnan Al-Salihi & Rola Quba'a	

Interview Record	
Interviewee Information	
Name:	Dr. Khaleel Al-Absi
Occupation:	Project Director
Name of Institution: (in English & Arabic)	Use of Reclaimed Water in the Jordan Valley - GTZ
Institution Contact Information	
Telephone:	+962 6 560 4239
Fax:	+962 6 560 4239
E-mail:	
Interview Information	
Place:	GTZ Project Office at Jordan Valley Authority
Date:	April 7 th , 2004
Time:	11:40 a.m.
Interview Record	
<ul style="list-style-type: none"> • Copy of “Guidelines for Brackish Water Irrigation in the Jordan Valley”. Project was finalised in year 2003 and a copy of guidelines for using brackish water in Jordan Valley was provided. • Reclaimed Water Project has been ongoing for the past 12 to 13 months. • Copy of “Reclaimed Water Project- Baseline Report”, First Report. 	
Interviewer Name: Dr. Adnan Al-Salihi & Rola Quba’a	

Interview Record	
Interviewee Information	
Name:	Nazeer Abu Arqoob
Occupation:	Assistant Secretary General for Wastewater Sector
Name of Institution:	Water Authority of Jordan (WAJ)
Institution Contact Information	
Telephone:	+962 6 568 0100
Fax:	+962 6 568 0891
E-mail:	nazeer_AbuArqoob@mwi.gov.jo
Interview Information	
Place:	WAJ Offices
Date:	April 7 th , 2004
Time:	9:00 a.m.
Interview Record	
<ul style="list-style-type: none"> • TYPESA study to determine the location of the three suggested wastewater treatment plants. • Suggested Reservoir located below wadi Arab Dam for the effluent from wadi Arab and Central Irbid wastewater treatment plants. • To get additional information on the effluent reuse project financed by the KfW, contact Eng. Saleh Malkawi. • For the Red-Dead Sea Canal alignment, contact Eng. Richard Persaud from Harza. • The northern conveyor of the Zara Main Water Conveyance System Project include desalination plant and two pump stations. As for the other conveyor towards the south Ghor there is another, it is to be checked with Jordan valley Authority. • Raw water conveyor that takes water from Mujib, Zara and Zarqa-Main to desalination plant located at the intersection of the Deas Sea-Naour road and the road to Jerusalem. • Tel Al-Mantah Wastewater Treatment Plant is run by the Jordan Valley Authority. 100% of its treated effluent is reused. • There are private wastewater treatment plants in the Jordan valley. These are to be checked with Eng. Ekram Daghistany from Jordan Valley Authority. 	
Interviewer Name: Dr. Sawsan Himmo	

Interview Record	
Interviewee Information	
Name:	Eng. Yousef Hasan Ayadi
Occupation:	Deputy of Planning in JVA
Name of Institution: (in English & Arabic)	Ministry of Water and Irrigation
Institution Contact Information	
Telephone:	+962 6 569 7940 +962 79 5588087
Fax:	
E-mail:	Youssef_hassan@mwi.gov.jo
Interview Information	
Place:	MWI New Building, Office 313
Date:	April 8 th , 2004
Time:	8:30 am
Interview Record	
<ul style="list-style-type: none"> • New Vision A prominent institution for developing the Jordan Valley and providing quality services to its residents and investors, and be an example of high efficiency among public sector institutions in Jordan. • New Mission The Jordan Valley Authority develops, manages, and protects water and land resources and their supporting infrastructure in the Jordan Valley in an environmentally and economically sound manner, in the Jordanian national interest, through creating partnerships with the private sector where appropriate. JVA will also implement projects stemming from regional agreements on water and development on behalf of the Jordanian government. • JVA has developed four goals, which represent the four main macro-tasks that it must carry out in order to fulfil its mission. These four goals are: <p>Goal One: Water Resource Development and Management Meet the needs of current and future water users by managing, developing, protecting and sustaining both existing and new water resources, and to do this in a way which takes into account both economic and environmental considerations, and involves the private sector where appropriate. Dams construction could be the priority number one, as an example 30 MCM of rain harvesting dams was developed and Wehdeh Dam is under construction.</p> <p>Goal Two: Water Supply and Distribution Ensure that JVA's existing water delivery and distribution infrastructure, systems and facilities are managed in an efficient, transparent and equitable manner, and involve the private sector where appropriate. FTAs flow is going to reduce to 6 l/s, which is the design flow.</p> <p>Goal Three: Land Development and Management Develop, manage, regulate and protect land and related resources in the Jordan Valley in order to maximize their economic usefulness while taking into account environmental considerations, and involve the private sector where appropriate. 30 to 40 Dunums could be insufficient to support family now since this area was suggested many years ago. After 2001, lands can be sold for more efficient handling. JVA must give up the unused lands.</p>	

Interview Record

Goal Four: Organizational Performance Improvement and Development

Develop and reorganize JVA to enable it to better achieve its new mission and improve its performance and effectiveness in providing quality service to its stakeholders.

- New Irrigation Projects will not support by donors any more. Last of these projects are:
 - 2200 Dunums could get water 2 MCM from Mujib
 - 7500 Dunums at Khnizera, Fifa, and Summar could get 8.5 MCM from Tanour Dam
- Mujib water to Industrial use will cost Potash 0.53 JD/m³ for 10 MCM per annum.
- Mekhieba water (20-30 MCM) could transfer to domestic and Abu Zeighan (15 MCM) through RO to Amman.
- Unconventional water (Brackish and Treated Wastewater) to Irrigation.
- New infrastructures (25 MJD) at Dead Sea area.
- New Touristic investment (411 MJD) at Dead Sea
 - Sharm Co. (37 MJD)
 - Belfsta Co. (35 MJD)
 - Aomnix Group (140 MJD)
- New study for new touristic area at Kafrein Dam and Karamah Dam
- Irrigation Project 14.5 could be transferred to a touristic area

Interviewer Name: Dr. Adnan Al-Salihi

4 ENVIRONMENT INTERVIEWS

Interview Record	
Interviewee Information	
Name:	Mr. Khaled Nassar, Mr. Abdel Rahman Sultan
Occupation:	Projects Managers
Name of Institution: (in English & Arabic)	Friends of the Earth Middle East (FoEME) جمعية أصدقاء الأرض
Institution Contact Information	
Telephone:	+962 6 586 6602
Fax:	+962 6 586 6604
E-mail:	foeme@go.com.jo
Interview Information	
Place:	FOEME Offices – Biader Wadi Es Sair
Date:	April 4 th , 2004
Time:	3:15-5:15 p.m.
Interview Record	
<p>Prior to the Interviewer introduction to the project, both Mr. Nassar and Sultan expressed their understanding of this project and other similar funded projects in the Jordan Valley as a tool handled by the donor agencies for assessing and promoting a new water pricing and water management policies especially concerning water use in the agriculture sector.</p> <p>Their main concerns and comments were that:</p> <ol style="list-style-type: none"> 1. The Jordan Valley Authority (JVA) is only concerned with the big farmers' interests and satisfaction neglecting small and medium ones. 2. JVA policies and decisions are affected by the local and regional political forces 3. Management of the Jordan valley (JV) should be planned and implemented in regional basis thereto assure sustainable development and Integrated Management of the inter and intra related management areas, for example the management of available water resources, the use of chemicals in the agriculture, and also the Management of the Dead Sea Basin. 4. Many governmental and nongovernmental organizations had carried out several multidisciplinary studies within the mandate of the JV, and several studies are ongoing today. However, severe lack of coordination and exchange of information is witnessed, as will as duplication of work, ignorance of sensitive issues of concern, limited accessibility to important information and consequently weakness of the decision support system and losing the opportunity of integrated resources management. Also, the lack of coordination results in economical losses, mismanagement of nature resources and impacting the environmental health. 5. Related stakeholders should be involved in this project 6. Always in such projects there is no proper coordination & cooperation between the client and the donors on the objectives, criteria and conditions since the donors imposes their own regulations. 	

Interview Record

7. Sinkholes are a major problem in the Dead Sea area, and those are affected by the retraction of the Dead Sea. Other environmental problems associated with the retraction of the Dead Sea are the migration of the special oasis ecosystems, these oases are very important and sensitive habitat. Also, at Abatah Spring area the *Ghar gharansis* (endemic fish) exist, up to date this area is considered as the only habitat for this fish.
8. Acacias Woodland in Qatar area are endangered, however, Qatar is a proposed protected area and will be declared as a protected area as soon funds are available.
9. Tourism development in the JV should be combined with the development of convenient and demanded tourism linkages. It might be important to oversee these linkages as part of their regional context thereto ensures integration instead of competition.
10. Public participation in the planning and implementation phases of the development (economical, social and environmental) projects in the JV is very important.
11. The land use planners should recognize the importance of developing urban areas (towns and villages) and to ensure the availability of suitable services and utilities.
12. The agriculture sector require full attention to the environmental and economical associated problems, especially water consumption, miss use of agrochemicals and the expansion of the agricultural land. Specifically the techniques used for growing plants in the sand dunes area in Wadi Araba should apply agricultural patterns that minimize soil erosion. However, agriculture in Wadi Araba results in fragmentation of special habitat islands and affects relict species.
13. The Dead Red canal project will posses several impacts to the environmental setting in the Valley, both positive and negative impacts are anticipated and a comprehensive and elaborated EIA and environmental management plans should be prepared prior to the project construction.
14. Empower citizens and equips NGO's and civil society organizations funds and other sustainability tools.
15. Concentrate on socio-economic projects.
16. Privatization of lands is going to be a major problem.
17. There is no master plan for the Dead Sea. However, FOEME is suggesting and working on declaring the Dead Sea basin as a Man and Biosphere Reserve.
18. The tourism sector in the JV suffers from very weak marketing policies and activities. At least basic tourism development facilities and services should be planned and prepared to improve the JV tourism product and aggressively marketed.

Interviewer Name: Majdi Salameh

Interview Record	
Interviewee Information	
Name:	Eng .Mahmoud Abu Seteh
Occupation:	Rangeland specialist
Name of Institution: (in English & Arabic)	Ministry of Agriculture وزارة الزراعة
Institution Contact Information	
Telephone:	+962 6 567 4094 / +962 77 475 874
Fax:	+962 6 567 4094
E-mail:	tcprange@nets.jo
Interview Information	
Place:	Ministry of Agriculture
Date:	April 18 th , 2004
Time:	10:30 am
Interview Record	
<p>The Main Ideas of the interview</p> <ol style="list-style-type: none"> 1. The grazing patterns in the north and middle parts of the valley are quite different in nature and effect from the grazing patterns in the south parts of the valley where: <ol style="list-style-type: none"> a. Grazing in the southern parts is more dependants on the natural vegetation, which are scarce and mainly concentrated within the riparian zones of the wadis and streams. Also, in the southern parts, up to 85% of the animal feed is from the natural vegetation and up to 20% is provided as supplementary feed. The settlement projects of the Bedouins resulted in concentrating the grazing pressure within the settled zones and its surroundings. Goats and camels are favoured on sheep's since they are more adapted to the harsh environmental conditions. b. Grazing in the northern and middle parts of the valley include growing sheep's, goats and cows, range vegetation provides with up to 75% of the feed consumed by these animals, supplementary feed and agriculture waste provides with up to 30% feed. c. Overgrazing can be witnessed almost every where in the valley; however, the impact is more apparent on the Humra area in the northern parts where the deciduous oak and Kharob are significantly impacted. While in the southern parts the important Arak and Acacia stands are significantly affected. These sites are proposed protected areas. Unfortunately, the overgrazing is usually associated with aggressive woodcutting; consequently, the problem is much complicated. d. The overgrazing and woodcutting problems are more significant and require more attention in the southern parts since the vegetation cover is already scarce and the climatic conditions are harsh. Another sensitive site is the tamriks woodland north to the dead sea, this area is very important and suffers from 	

Interview Record	
	<p>heavy woodcutting and grazing, more attention to this area is need thereto; conserve its uniqueness and rarity.</p>
2.	<p>Problems Facing the Development of Rangelands within the Jordan Valley:</p> <ul style="list-style-type: none">a. One of major problems is the ambiguity of responsibilities for managing the rangelands and forestlands especially in the north parts of the valley starting from the Jordan University Farms and up north. This problem results in almost total ignorance of this area and though mismanagement and the loss of forests and rangelands. Mr. Abu Seteh stated that the Ministry of Agriculture could not work in these areas.b. The problem of plastic waste disposal and dispersal.c. The soil erosion problem caused by the overgrazing and woodcutting
3.	<p>Recommendations:</p> <ul style="list-style-type: none">a. To control grazing activities based on the grazing capacity of available rangelandsb. To rehabilitate overgrazed rangelandsc. To delineate rangelands and other areas suitable for agriculture expansiond. To enhance more communication and coordination between responsible authoritiese. To establish Agriculture Research and Training Center (Training, Awareness and research targeting farmers, employees and other groups) – Dair alla or close to the Jordan University Farms are potential locations.f. To Declare Qater, Mas'ada Mountain and Ghore Al Safi as reserves in full coordination and cooperation with local communities.
Interviewer Name: Majdi salameh	

Interview Record	
Interviewee Information	
Name:	Eng. Khalaf Al Ogleh
Occupation:	Biodiversity Division Head
Name of Institution: (in English & Arabic)	Ministry of Environment وزارة البيئة
Institution Contact Information	
Telephone:	
Fax:	
E-mail:	
Interview Information	
Place:	Ministry of Environment
Date:	April 14 th , 2004
Time:	9:00 am
Interview Record	
<p>Main Comments and Findings:</p> <ol style="list-style-type: none"> 1. Pollution: mainly resulting from industries, the misuse of pesticides, fertilisers and other chemicals used in agriculture. The impacts of chemicals misuse is not local and it has to with the dispersion of these chemical by air and water, also, the misuse of agrochemicals on the other side of the valley is problematic and require proper management at both sides. Also, the industrial sources of pollution should be monitored continuously, and proper mitigation measures, pollution prevention/minimisation, and treatment should be applied and monitored. Other sources of pollution include the mismanaged solid and liquid wastes. Integrated Waste Management Systems are recommended, and these systems should be combined with proper selection of management techniques and waste treatment/disposal locations, in addition to the development and enforcement of environmental legislation and standards, public awareness activities and systematic monitoring. 2. Overgrazing and Woodcutting: this problem is of highly concern since the valley holds unique, sensitive and diverse ecosystem, overgrazing and illegal woodcutting results in loss of habitat and diversity. However, organised grazing associated with rangeland and forestry development would ensure conserving the ecosystem. 3. Shortage of parks for local, national and international tourism. This shortage result in many environmental problems like waste generation and accumulation, fires, risks to public health and safety, and also visual impacts. It is highly recommended to establish parks and tourism gardens supported with the needed facilities and services to ensure mitigating the up mentioned impacts and to ensure proper management of these parks. 4. Nature conservation problem. Several areas in the valley where identified as protected areas, proposed protected areas, important bird areas (IBAs) and national parks. All these sites represent biological hotspots and sensitive ecological sites, where suitable conservation activities should be applied. For the protected areas the conservation problem is already tickled and solved through integrating nature conservation with local community involvement and development of environmental friendly income generating activities. The proposed protected areas are subject to be declared as protected areas whenever funds area available, however, more efforts and attention should be given to the involvement and participation of local communities within these areas and its close neighbouring areas. Still these proposed protected areas are subject to many environmental threats mainly related to overgrazing and 	

Interview Record

woodcutting and the increase accessibility to remote areas. IBAs are quite vast areas, still these locations are witnessing ever growing expansion of agricultural and touristic projects, the most threatened IBA by these developments is Al Maghtas-Swaimeh. On one hand, the development of economical activities is essential, still it has to cause deleterious effect to the local environment, including the water harvesting projects that had affected severally the water budget of the Dead Sea and the generated impacts by the retraction of the Dead Sea including the appearance of several sinkholes, migration of the unique oasis systems, changing negatively the status of several species to become threatened or endangered with the risk of extinction (at least locally). On the other hand, enforcing environmental legislation's, implementing suitable environmental management projects, and enhancing alternative, environmentally sound economical projects like ecotourism and the integrated pest management in agriculture would endure sustainable development within the valley and conservation of those internationally important and yet sensitive IBAs.

5. Flies and insects management. This problem is not only a critical environmental problem but also serious challenges for economical development especially in the tourism sector. The main cause of this problem is the mismanagement of natural fertilisers and open water bodies. The Ministry of Environment in co-ordination with JVA and the Ministry of Agriculture is currently in the preparation phase to implement comprehensive mitigation plan.

Interviewer Name: Majdi Salameh

Interview Record	
Interviewee Information	
Name:	Habib Habash
Occupation:	Assistant Secretary General for Tourism Affairs
Name of Institution: (in English & Arabic)	Ministry of Tourism and Antiques وزارة السياحة والآثار
Institution Contact Information	
Telephone:	+962 6 464 2394
Fax:	+962 6 464 8465
E-mail:	hhabash@mota.gov.jo
Interview Information	
Place:	Ministry of Tourism and Antiques
Date:	April 6 th , 2004
Time:	1:45-3:00 pm
Interview Record	
<p>Main Findings:</p> <ol style="list-style-type: none"> <ul style="list-style-type: none"> existing tourism sites Um Qais Pella (Tabqet Fahel) Tombs of the Companions Al Yarmouk Al Himeh The Baptism Site (Al Maghtas) Hot springs of Dair Allah Dead Sea Shores On going tourism development projects <ul style="list-style-type: none"> Lots Cave The Museum of the Lowest Point on Earth Tlal and Twahin El Suker (Sugar mines) Potential Tourism Development Projects <ul style="list-style-type: none"> Al Baqurah The ottoman Rail Road between Al Yarmouk – Besan – Hifa Ecotourism (Al Yarmouk, Wadi Al Mujib, ...etc) The Dead Sea tourism assets and values include the following: <ul style="list-style-type: none"> Sunbathing (Bromine in the air and less harmful radiations) Climate (25% more oxygen at 410 meter below the sea level) Medical value (Dead Sea salts as quire for many skin diseases including Psoriasis) – port of Herod Cultural and archaeological values Religious Tourism in the JV is mainly limited to the Dead Sea coast and requires more well developed and implemented marketing strategies. Also, pricing is an issue of concern for marketing tourism products. 	

Interview Record
6. Most of the tourism development potentials in the JV might require developing it in its regional context. This arrangement would ensure the integrity of the tourism story and would minimize the impact of regional competition.
Interviewer Name: Majdi Salmeh and Hala Mesmar

Interview Record	
Interviewee Information	
Name:	Marah Al Khayat
Occupation:	Projects Manager
Name of Institution: (in English & Arabic)	Ministry of Tourism and Antiques وزارة السياحة والآثار
Institution Contact Information	
Telephone:	+962 6 464 2394
Fax:	+962 6 464 8465
E-mail:	marah@mota.gov.jo
Interview Information	
Place:	Ministry of Tourism and Antiques
Date:	April 6 th , 2004
Time:	1:45-3:00 pm
Interview Record	
<p>The interview with Eng. Al Khayat mainly concentrated on the existing and proposed projects by the Ministry of Tourism in the Jordan Valley, the on going and proposed projects include:</p> <ol style="list-style-type: none"> 1. imat Abu Thableh – North Ghour 2. he Museum of the lowest point on earth 3. adi Ibn Hammad Project 4. ead Sea-Mukawer Road 5. utes Cave Project 6. ugar Mines (Twahen Al Sukaer) <p>Other projects are carried out by the private sector include hotels near on the Dead Sea Coast.</p> <p>Eng. Al Khayat suggested completing the interview with Mr. Habib Habash the Secretary General Assistant for Tourism Affairs. Please refer to the interview record with Mr. Habash.</p>	
Interviewer Name: Majdi Salmeh and Hala Mesmar	

Interview Record	
Interviewee Information	
Name:	
Occupation:	Director of Awqaf Division
	Ministry of Awqaf and Religious Affairs
Name of Institution: (in English & Arabic)	وزارة الأوقاف و الشؤون و المقدسات الإسلامية
Institution Contact Information	
Telephone:	+962 6 566 6141
Fax:	
E-mail:	
Interview Information	
Place:	Phone Call
Date:	
Time:	
Interview Record	
<p>A phone call was made with the director of the Awqaf division in the ministry of religious affairs, the purpose of this call was to arrange for an appointment to conduct interview regarding the JVA land use project. The Awqaf director responded that the land use plan should recognize the Awqaf lands and that he has nothing to add in the interview and for more information about the tombs and cemeteries can be obtained from the field officers.</p> <p>The Awqaf representatives and field officers were invited to participate in the conducted discussion groups, for more information on their issues of concern and input please refer to the discussion groups report.</p>	
Interviewer Name: Majdi Salameh	

Interview Record	
Interviewee Information	
Name:	Mr. Khaled Irani - Mr. Yahia Khaled
Occupation:	RSCN Director General - Director of Conservation Division
Name of Institution: (in English & Arabic)	The Royal Society for the Conservation of Nature الجمعية الملكية لحماية الطبيعة
Institution Contact Information	
Telephone:	+962 6 533 7931 / +962 6 533 7932
Fax:	+962 6 534 7411
E-mail:	dconservation@rscn.org.jo
Interview Information	
Place:	RSCN offices – Al Jubiha – Amman
Date:	April 29 th , 2004
Time:	10:00 am
Interview Record	
<p>Prior to the discussion the main study findings and maps work relevant to nature conservation was presented to the interviewees in order to verify the documented relevant information and sites. The following are the comments of the interviewees:</p> <ol style="list-style-type: none"> 1. The documented information and locations are almost all the land use planning information relevant to the RSCN work and activities. 2. Currently the RSCN is in the process of implementing of a Block B grant from the GEF regarding Integrated Ecosystem Management in the Valley. This project will improve nature conservation within the core protected areas and will enhance more suitable nature conservation and environmental protection within the buffer zones, IBAs and also the development areas. The land use planning project would be of great help for implementing nature conservation and sites management. 3. The RSCN is highly concerned with the on going and planned tourism development and the ongoing construction activities within the north cost of the Dead Sea and Swaimeh, since this area is highly sensitive and rare. The RSCN suggested ecotourism development and environmentally sound tourism activities within this area that ensures maximum tourism development with minimal construction activities. A nature based tourism reserve to include the stretch between the Dead Sea north coast up to Wadi Al Kharar is highly recommended, camp sites with optimum number of bed unites within the carrying capacity of the area is also recommended. 4. The RSCN is developing a ecotourism facilities at Wadi Fenan, the RSCN is planning to develop this area as a tourism orientation center within the Jordan valley and also to Dana, Rum and Petra. 	
Interviewer Name: Majdi Salameh	

5 HOTELS AND INDUSTRIES INTERVIEWS AND QUESTIONNAIRES USED IN CONDUCTING THE ECONOMIC INTERVIEWS

CALENDAR OF HOTELS AND INDUSTRIES INTERVIEWS

Sunday 21/3/2004:-

- Zara group: Movenpick Dead Sea + Kempenski + Zara Hotel in Himmeh – Interview with Saleh Al-Refai (General Manager).

Monday 22/3/2004:-

- Dead Sea Spa Hotel (Amman Head Office): Interview with Nader Amr (Director for Sales & Marketing).
- Marriott Hotel (Amman): Interview with Amal Damrah (Marketing Administration Assistant)

Tuesday 23/3/2004:-

- Greater Amman Municipality: Information about Amman Tourism Beach – Engineer Mohammad Al-Najdawi.
- Jordanian Company for Marketing and Production of Agricultural Products (Amman Head Office)

Thursday 25/3/2004:-

- Greater Amman Municipality: Interview with Engineer Mohammad Al-Najdawi – He refused to give information about Amman Tourism Beach.
- Jordan Hotels Association: Information about hotels in Amman, Dead Sea, Petra & Aqaba.
- Holiday Inn Hotel (Amman): Interview with Khaled Kana'an (Sales Executive) – They have no information about Holiday Inn Dead Sea/Planned Hotel.
- Intercontinental Jordan Hotel (Amman): Management Offices (Lucy Aslo) – They have no information about Holiday Inn Dead Sea/Planned Hotel.

Friday 26/3/2004:-

Marriott Hotel (Dead Sea): They refused to make an interview because they are very busy.

Saturday 27/3/2004:-

- Jordanian Company for Marketing and Production of Agricultural Products (Tomato Paste Factory) (Arda): Interview with Met'eb Hdairss (Industrial Compound Manager).
- Sundays Company: Phone call with Osama Ammareen – He refused to give information about the planned hotel.

Sunday 28/3/2004:-

- Jordan Valley Authority: Interview with Engineer Ikram Al-Daghistani (Investment Department) – Information about tourist projects in Dead Sea area.
- Zara Group: Information about Movenpick Dead Sea Water & Sewage Consumption 2000, 2001, 2002 & 2003.
- Jordan Investment Board: Interview with Marwa Abd Al-Hak (One Place Service Section) – They refused to give information about investments in Jordan without a formal letter from the company.

- Arab Potash Company (Amman): Hisham Maslamani's office (Financial Manager Assistant).
- Regency Palace Hotel: Interview with Saliba Shnoudi (Financial Manager).
- Zara Cosmetics: Phone call with Luma Abbasi – She said that she would be out of the country.

Monday 29/3/2004:-

- Ministry of Tourism: Interview with Haider Ksous (Statistics Section) – Information about hotels & tourist projects in the kingdom.

Tuesday 30/3/2004:-

- Jordan Valley Authority: Gathering information – Interview with Engineer Ahmad Saeed (Regulation Department).
- Tomato Factory (El-Qarn – north of Kreymeh): Phone call with Met'eb Hdairiss – He said that it wasn't a tomato factory, but it was for fresh vegetables and it is not working now.
- OMNIX: Phone call with Naim Al-Zabery - He refused to give information about the planned hotel.

Wednesday 31/3/2004:-

- Middle Ghor Industrial Company (Polystyrene Factory): Interview with Engineer Savel Zaidan Masalhah (Manager & Owner).
- Arab Potash Company (Amman): Interview with Sameer Al-Smadi (Costs Accountant in the factory) – The questionnaire is not ready yet.
- Jordan Valley Authority: Gathering information – Interview with Engineer Nisreen Al-A'araj + Instructions of the organization of irrigation water use.
- Bella Vista: Phone call with Nayef Mowalla – He can't give information about the planned hotel because he is very busy.

Thursday 1/4/2004:-

- Jordan Investment Board: They took the formal letter, but the employee who is responsible for giving information (Marwa) was not there.
- Ministry of Tourism: Information about occupancy rate of hotels in Jordan – Not ready yet.

Saturday 3/4/2004:-

- Travertine Company – Travco (Quarry) (Fannoush – Arda): Interview with Engineer Qais Al-Qaisy (Technical Adviser).

Monday 5/4/2004:-

- Arab Potash Company (Amman): The questionnaire is ready.
- Jordan Investment Board: Information requested – Not ready yet. About the Industrial Estate Gateway (Jordan Gateway)(QIZ) – They said that it closed or about to close (Promotion Section).

Wednesday 7/4/2004:-

- Jordan Investment Board: Information about investment projects in Jordan 2001, 2002, 2003 & 2004.
- Ministry of Tourism: Information about occupancy rate of hotels in Jordan.

Jordan Valley Preliminary Land Use Master Plan

Questionnaire Addressing Hotels At Dead Sea Area

Section 1:

1. Date: _____
2. Name of Institution: _____
3. Hotel Location: _____
4. Interviewee Name: _____
5. Job Title: _____
6. Telephone: _____
7. Year of Hotel Establishment: _____
8. Area of land on which hotel is built: _____
9. Number of rooms: _____
10. Occupancy Rate:

<u>Off Peak</u>	<u>On Peak</u>
-----------------	----------------

11. Number of Employees:

Administrative:	
Skilled Labour:	
Unskilled Labour:	
Total:	

12. Number of Employees according to nationality:

Jordanians:	
Arabs:	
Foreigners:	
Total:	

13. Number of Employees according to place of residency:

Jordan Valley (Ghors):	
Amman:	

14. In your opinion, what is the total number of rooms that the Dead Sea can carry?

15. What is the percentage contribution of each of the following activities in the hotel's income?

- ☐ Food and Beverage _____
- ☒ Lodging _____
- ☐ Other activities, please specify: _____

16. Does the hotel have expansion plans? ☐ Yes ☐ No

If the answer is yes, how will this expansion take place? _____

What is the area to be used? _____

17. Source of water and quantity consumed:

☐ Jordan Valley Authority _____ (m³)

☐ Private Wells _____ (m³)

☐ Other, please specify: _____ (m³)

18. Does the hotel have a water recycling system? ☐ Yes ☐ No

If the answer is yes, what is the quantity of recycled water? _____ (m³)

Does the hotel have water saving devices? ☐ Yes ☐ No

19. What is the quantity of water consumed?

☐ Water Consumed inside the hotel _____ (m³)

☐ Water consumed for landscape irrigation _____ (m³)

☐ Other water consumed, please specify: _____ (m³)

Year	2003	2002	2001	2000	1999
Water Consumed (m ³ /year)					
Total number of hotel residents in that year					
Total number of employees in that year					

20. What is quality and quantity of water used in industrial process?

☐ Drinking Water _____ (m³)

☐ Irrigation Water _____ (m³)

21. What is the total annual water cost? _____ (JD and indicate the year)

22. Do you have a wastewater treatment plant? ☐ Yes ☐ No

If the answer is yes, what do you do with the treated wastewater effluent?

If the answer is no, what approach is used for disposing of the wastewater?

23. How do you expect to expand in water usage in the future?

24. What is the approach used in disposal of the solid waste?

25. What is the quantity of solid waste produced over the past five years?

Year	2003	2002	2001	2000	1999
Solid waste produced (kg/year)					
Total number of hotel residents in that year					
Total number of employees in that year					

26. What is the cost associated with the disposal of this industrial waste?

27. Do you need assistance in addressing any environmental problem that the institution is facing?

☐ Yes ☐ No

If the answer is yes, what are these environmental problems?

28. Do you have an environmental management plan? ☐ Yes ☐ No

If the answer is yes, please elaborate on this plan:

29. Do you have environmental impact assessment studies? ☐ Yes ☐ No

If the answer is yes, can you provide us with a copy of this study? ☐ Yes ☐ No

30. Do you issue Administrative Annual Reports? ☐ Yes ☐ No

If the answer is yes, can you provide a copy? ☐ Yes ☐ No

Jordan Valley Preliminary Land Use Master Plan

Questionnaire Addressing Industrial Activities At Jordan Valley

Section 1:

1. Date: _____
2. Name of Institution: _____
3. Interviewee Name: _____
4. Job Title: _____
5. Telephone: _____
6. Year of Institution Establishment: _____
7. Area of Institution: _____
8. Number of Employees:

Administrative:	
Skilled Labour:	
Unskilled Labour:	
Total:	

9. Number of Employees according to nationality:

Jordanians:	
Arabs:	
Foreigners:	
Total:	

10. Number of Employees according to place of residency:

Jordan Valley (Ghors):	
Amman:	

11. Type of natural resource consumed by the industrial activity?

No.	Type of natural resource	Quantity of natural resource	Additional Comments
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

12. Availability of Annual Reports? _____

13. Does the institution have expansion plans? ☐ Yes ☐ No

If the answer is yes,

How? _____

What is the area to be used? _____

14. What is the quantity of water consumed per process per year? _____ (m³/year)

15. Source of Water and quantity consumed:

☐ Jordan Valley Authority _____ (m³)

☐ Private Wells _____ (m³)

☐ Other, please specify: _____ (m³)

16. Does the institution have a water recycling system? ☐ Yes ☐ No

If the answer is yes, what is the quantity of recycled water?

_____ (m³)

17. What is the total annual water cost? _____ (JD and indicate the year)

18. What is quality and quantity of water used in industrial process?

☐ Drinking Water _____ (m³)

☐ Treated Wastewater _____ (m³)

☐ Brackish Water _____ (m³)

19. Do you have a wastewater treatment plant? ☐ Yes ☐ No

If the answer is yes, what do you do with the treated wastewater effluent?

20. How do you expect to expand in water usage in the future?

21. What type of industrial solid waste is produced and in what quantities?

No.	Type	Quantity (kg/year)
1		
2		
3		
4		
5		

22. What is the approach used in disposal of the industrial solid waste?

23. What is the cost associated with the disposal of this industrial waste?

24. Do you need assistance in addressing any environmental problem that the institution is facing?

☐ Yes ☐ No

If the answer is yes, what are these environmental problems?

25. Do you have an environmental management plan? ☐ Yes ☐ No

26. Do you have environmental impact assessment studies? ☐ Yes ☐ No

If the answer is yes, can you provide us with a copy of this study? ☐ Yes ☐ No

27. Which of the following environmental problems are associated with the industrial process?

- ☐ Noise
- ☐ Dust
- ☐ Air pollution
- ☐ Groundwater pollution
- ☐ Accumulation of municipal solid waste
- ☐ Accumulation of industrial solid waste
- ☐ Others, please specify: _____

Results of the Hotels Application Form

NO.	QUESTION	DEAD SEA SPA	ZARA INVESTMENT	AMMAN TOURISM BEACH	JORDAN VALLEY MARIOTT RESORT & SPA	REGENCY PALACE
1	DATE	3/22/2004	3/21/2004	3/25/2004	3/22/2004	3/28/2004
3	LOCATION	Dead sea	Dead sea	Dead sea	Dead sea	Amman
5	JOB POSITION OF INTERVIEWEE	Management & Marketing Director	GENERAL DIRECTOR	Project Director	Financial Department Manager	
6	TELEPHONE NUMBER	053561000 / 055601554	064650366 / 064619624	079/5557955	065607607 / 053560400	65607000
7	YEAR ESTABLISHED	1989	1990		2002/2003	1980
8	AREA	42 dunums (42,000 m ²)	89 dunums (89,000 m ²)			5,560 m ²
9	NO.OF ROOM	100	340		216	300
10	OCCUPANCY RATE (%)					
	OFF PEAK	30%-40%	30%		25%	41%
	ON PEAK	70%	50%		98%	
11	NUMBER OF EMPLOYEES					
	MANAGEMENT.	10%	20			22
	SKILLED LABOUR	80%	320			170
	UNSKILLED LABOUR	10%	20			72
	TOTAL	100	360			264
12	EMPLOYEES NATIONALITY					
	JORDANIAN	97%	355			244
	ARAB	3%				19
	NON-JORDANIAN		5			1
	TOTAL		360			264
13	EMPLOYEES RESIDENCY					
	NO. OF EML.FROM GHOR	40%				
	NO.OF EML. FROM AMMAN OR OTHER	60%	99% from ammnn			All
14	OPNION REGARDING DEAD SEA CAPACITY REGARDING NUMBER OF ROOMS	2,000 rooms	In israel, they have 2,500 rooms on dead sea (hyatt israel have 450 rooms)		1500 room	
15	% ACTIVITIES CONTRIBUTION TO INCOME					
	FOOD & BEVERAGE	30%	45%		20%	39,5%
	STAY	40%	50%		70%	44%
	OTHERS	15% spa treatment 15% entertainment	Wedd.& conf. 5%		10%	16,5%
16	EXPANSION PLANS					
	YES	Yes				
	NO		No			No
	TOTAL AREA	12 dunums for increasing rooms (adding 146 rooms)				
17	WATER SOURCE					
	JORD. VALL.		20-30 m ³			3,390 m ³
	PRIVATE WELL					
	OTHERS		130m ³ (private water tanks)			
18	WATER RECYCLING					
	YES / QUANTITY RECYCLED		Yes / 80%		Yes	
	NO	No				No
	WATER SAVING EQUIP. YES	Yes	Yes			Yes
	WATER SAVING EQUIP. NO					
19	WATER CONSUMPTION		Winter: 160 m ³ Summer: 360 m ³			
	INSIDE HOTEL		120 m ³			33,900 m ³ in 2003
	IRRIGATION WATER		40 m ³			
	OTHERS					
	2003 TOTAL WATER QUANTITY					33,900 m ³
	2003 HOTEL RESIDENTS					
	2003 EMPLOYEES NO.					
	2002 TOTAL WATER QUANTITY					
	2002 HOTEL RESIDENTS					
	2002 EMPLOYEES NO.					
	2001 TOTAL WATER QUANTITY					

NO.	QUESTION	DEAD SEA SPA	ZARA INVESTMENT	AMMAN TOURISM BEACH	JORDAN VALLEY MARIOTT RESORT & SPA	REGENCY PALACE
	2001 HOTEL RESIDENTS					
	2001 EMPLOYEES NO.					
	2000 TOTAL WATER QUANTITY					
	2000 HOTEL RESIDENTS					
	2000 EMPLOYEES NO.					
	1999 TOTAL WATER QUANTITY					
	1999 HOTEL RESIDENTS					
	1999 EMPLOYEES NO.					
20	SOURCE OF WATER FOR: DRINKING IRRIGATION WATER OTHERS	Mineral water	Healthy water		Mineral water	Mineral water
21	ANNAUL WATER COST COST JD					48600
22	WASTEWATER TREATMENT YES / USAGE NO / DISPOSAL METHOD	No / private wastewater tankers	Yes / used for irrigation			No / wastewater system
23	EXPANSION IN WATER CONSUMPTION	Expected to increase due to increase in room number			No expansion	Working towards saving water quantity consumed
24	SOLID WASTE DISPOSAL	Municipality	Suweimah municipality			Big container
25	SOLID WASTE QUANTITY 2003 SOLID WASTE QUANTITY 2003 HOTEL RESIDENTS 2003 EMPLOYEES NO. 2002 SOLID WASTE QUANTITY 2002 HOTEL RESIDENTS 2002 EMPLOYEES NO. 2001 SOLID WASTE QUANTITY 2001 HOTEL RESIDENTS 2001 T.EMP 2000 SOLID WASTE QUANTITY 2000 HOTEL RESIDENTS 2000 EMPLOYEES NO. 1999 SOLID WASTE QUANTITY 1999 HOTEL RESIDENTS 1999 EMPLOYEES NO.	No information				
26	TOTAL COST OF SOLID WASTE DISPOSAL	High				
27	ASSITANCE IN ENVIRONMENTAL PROBLEMS YES NO	Yes	Need a park on eastern side of the road		Yes the problem of the decrease of dead sea water level and problem of insects	No
28	ENVIRONMENTAL AMANGEMENT PLAN YES NO	No	Yes		No	No
29	ENVIRONMENTAL IMPACT ASSESSMENT YES NO	No	No		No	No
30	ANNUAL ADMINISTRATIVE REPORT YES NO	No	Yes		No	No

6 OTHER INTERVIEWS

Interview Record	
Interviewee Information	
Name:	Eng. Marwan Bqa'in
Occupation:	
Name of Institution: (in English & Arabic)	Ministry of Energy and Mineral Resources وزارة الطاقة والثروة المعدنية
Institution Contact Information	
Telephone:	-
Fax:	-
E-mail:	
Interview Information	
Place:	Phone Interview
Date:	May 8 th , 2004
Time:	11:00 a.m.
Interview Record	
<p>The interview asked about the availability of gas pipelines running within the Jordan Valley Authority mandate to which the respondent provided the following information:</p> <ul style="list-style-type: none"> • There are two gas pipelines: <ol style="list-style-type: none"> 1. 36 inch gas pipeline running along the Ras Al-Naqab-Aqaba Highway. 2. 8 inch gas pipeline running from the south at the Saudi Border to the Aqaba Port. • However, there are no gas pipelines passing within the Jordan Valley Authority mandate. 	
Interviewer Name: Dr. Sawsan Himmo	

ANNEX 3

RECORD OF MINUTES OF MEETING

Annex 3: Record of Minutes of Meeting

Date: Thursday, February 26th, 2004
Time: 10:00 a.m.
Place: JVA Offices
Subject: Introductory meeting

Attendees:

Project manager: Ramzi Kawar
Project coordinator: Nisreen Araj
Consolidated Consultants (CC): Khaled Murad
Saed Aqel
Rola Quba'a
Lama El-Awad

The purpose of this meeting was to discuss the following:

1. Communication Protocol
 - Information flow should be such that in emails always cc the following:
 - Anything contractual should be sent to Ramzi
 - Other issues should be sent to Ramzi, Nisreen, Setta and Gretta and Sandy
 - A monthly report should be submitted either at the end or beginning of each month because the project manager releases his report at the 10th of each month.
 - Sandy will be the responsible land use/tourism planner and will be available from 11th till end of March.
2. Work Schedule
 - We need the schedule of sandy in April and May.
 - We will try to squeeze the workshop by the end of March when sandy is in Jordan, check with Roy Ventura who works in the water office in the USAID, and did focus groups and can help us. Focus groups reports from PA will be provided to the consultant.
 - The first phase of the project should be finished before Sandy leaves.
3. Information Requirements
 - Sigma plan, forward study, and Harza study.
 - Use references as they relate to the project.
 - Come up with indicators or criteria.
 - Get original data from field and focus groups.
 - Don't collect excess data.
 - Create an index of data (meta data).
 - Use matrix system for resources.
 - Photo survey: sandy has already taken some pictures.
 - Should send a letter to JVA or MWI that we have the right to use information related to the project from Harza.
 - CC requested a formal letter that we have been awarded the project.
 - We will send a copy of our proposal to Ramzi and Nisreen.
4. Preparations for Sunday's kick off meeting

The meeting will be in 2 parts.

 - The first one from 11-12 will be attended by delegates from CC, JVA Secretary General and the USAID Director and others, and short speeches will be given.

- Second part of the meeting from 12-2:30, attended by all the study team to get acquainted to Sandy and present their understanding of the project and ask questions.

Notes:

- RJGC has satellite images of JVA for 2000, JVA should investigate getting them.
- Need to know ongoing projects in the area.
- List of information layers of the project will be emailed to us.
- There will be a field trip on Monday to the northern and middle parts of the JVA in order to complete the photo survey.

Date: Sunday, February 29th, 2004
Time: 11:00 a.m.
Place: JVA Offices
Subject: Kick off meeting

Attendees:

Secretary General/JVA:	Zafer Al-Alem
Deputy Secretary General	
Head of Steering Committee/JVA:	Mousa Jamani
AMIR:	Gretta Boy
AMIR/AMI:	Sandy Chesrown
Member of Steering Committee/JVA:	Ahmad Saeed
Project coordinator:	Nisreen Araj
Project manager:	Ramzi Kawar
Consolidated Consultants (CC):	Jafar Toukan
	Khaled Murad
	Saed Aqel
	Ahmad Hamed
	Ahmad Youssef
	Dr. Adnan Salihi
	Dr. Amjad Bargouthi
	Dr. Munir Rusan
	Dr. Amer Salman
	Dr. Emad Al-Karablieh
	Asma Al-Sa'di
	Ruba Khoury
	Mahmoud Hishmeh
	Abdel Rahman Jaber
	Husam Hawari
	Rola Quba'a
	Lama El-Awad

The first meeting started by a speech given by the Secretary general where he talked about the project and required fast and reliable work to be performed.

The land use/tourism planner discussed the objectives and the methodology of the project. It was agreed that a field trip would be conducted on Monday in order to complete the photo survey for zone 1 and record baseline information.

Furthermore, it was suggested that the Karameh Dam provides irrigation water to its area and thus it can be turned into a touristic one.

There is the 14 km extension that is close to the Baptism site where there is a plan to conduct a 20,000 dunum sport land (south of the Karameh Dam) and thus water will be allocated from the Karameh Dam to the area. In addition, it was suggested to have some picnic areas for the public in the Jordan Valley.

The main request for development of the JV was suggested by the Secretary General and is to distribute farm units to the farmers.

The second meeting which was attended by the study team and JVA, included a description of the following:

- Goals and objectives of the project were discussed: the objective is to provide a land use map to follow up on the future uses. Land is divided to three zones 1. Agricultural zone 2. Inside municipalities 3. Other usages lands. The consultant should study and analyse the different land uses, problems and challenges faced and environmental impacts, tourism opportunities, work opportunities, etc.
- There is a new strategy adopted by the JVA where it will lay off its hands over the lands that are not used.
- We should follow the expansion limits from the ministry of municipalities.
- We should involve municipalities in our focus groups.
- Work methodology was discussed by the land use/tourism planner as follows:
 - Recording baseline information and land uses based on knowledge and understanding of existing information.
 - March 2nd –10th: CC will put preliminary information on baseline maps such as environmental conditions, parcel ownerships, boundaries, interviewing DOA, RSCN, GTZ to get baseline information, cross reference GIS data, reading background reports, and organizing focus groups.
 - Mid March till mid April: formal team meeting, implement workshop and provide recommendations, working on pilot project, fish farming, collect economic data and interviews, focus groups, bubble land use plan, and present the primary land use plan to the client on the 30th of March.
On 1st of April do the carrying capacity of the Dead Sea, primary training assessment and a draft set of drawings.
 - Mid May present to JVA.
 - Review period for JVA from 15-22nd of May and one week for CC to review comments and submit the final report.
- In addition, the following was discussed:
 - Use of water in a more economical way.
 - Environmental perspective: have enough land allocated for tourism/ public usage as well as for reserves.
 - Need to have public areas for picnics.
 - Use the area of the Karameh dam as a public area.
 - Identify areas that are legally tied to any development.

Notes:

- Concentrate on the use of marginal water, in addition to the concept of small water for domestic uses and large water for large uses and sports.
- Identify archaeological sites such as the tombs of the prophet companions.
- Identify sites of pollution.
- Identify environmental sites such as marshlands, wetlands, migratory routes, nature reserves, fife oasis, etc.

Date: Wednesday, March 3rd, 2004
Time: 2:00 p.m.
Place: JVA Offices
Subject: Meeting with Dr. Himmo

Attendees:

Project manager: Ramzi Kavar
Project coordinator: Nisreen Araj
Consolidated Consultants (CC): Dr. Sawsan Himmo
Rola Quba'a
Lama El-Awad
Abdel Rahman Jaber

The aim of the meeting was to discuss the project with Dr. Himmo. Dr. Himmo emphasized that the project starts at the day of signing that is the 29th of February.

The project manager talked about the communication protocol and the role of the information manager, which is to classify the information to the team. Dr. Himmo assigned Rola Quba'a as the information manager.

The project manager required the following from the consultant:

- A work plan
- A full copy of the proposal
- A list of the actual working team versus those proposed
- The minutes of meeting
- Coordinate our field notes with those that Sandy took
- Build a matrix of references after the project and return information as deliverables
- Field checking
- Prepare permission letters for the study staff to go into Yarmouk area and other areas
- Concentrate on undeveloped areas during our field trips and on the Bedouins in the south.
- We will have to abide by the land use/tourism planner deadlines

We will be provided with people to help us during our field trips.

Active organizations in JVA are:

- Jordan River Foundation
- Noor Al-Hussein Foundation
- JICA and others

Furthermore, we were provided with additional information put in CDs at the end of the meeting.

Date: Thursday, March 11th, 2004
Time: 11:00 a.m. – 1:00 p.m. (followed by individual meetings)
Place: Consolidated Consultants' Office
Subject: Jordan Valley Preliminary Land Use Plan – Progress Report
Sent To: Ramzi Kawar, Project Manager, March 16, 2004

Attendees:

Project Coordinator, JVA	Nisreen Araj
Project Manager/AMIR	Ramzi Kawar
Land Use Planning/Tourism Consultant:	Sandi Chesrown
Consolidated Consultants (CC):	Khaled Murad
	Dr. Sawsan Himmo
	Ahmad Hamed
	Asma' Asa'di
	Rola Quba'a
	Lama El-Awad
	Abdel Rahman Jaber
	Majd Tukan
	Ruba Khoury

The meeting started with a presentation about CC's progress, including slides from the field survey of the north, followed by discussion of issues of concern.

- Focus groups were discussed. It was recommended that CC send a letter to the Secretary General and ask him to select whichever JVA people he wants to invite to the focus groups. It was noted that three focus groups will be held, including the South Jordan Valley Zone 3 on March 18 (Ghor Safi-Jordan Valley Authority Directorate), the middle Jordan Valley Zone 2 on March 20 (at the JVA Rest House); and the North Jordan Valley Zone 1 (JVA Rest House/insufficient space in North Shuneh) on March 24. Not only the municipalities but also the governates should be invited, as well as JV regional reps, DOA, and the Near East Foundation. CC will issue formal letters of invitation. Sandi mentioned that in order to encourage participation, she invites participants to physically walk up to the flip chart and place their ideas, but the CC team said it is better to divide the participants into small discussion groups so that people will be encouraged to share their ideas. It was recommended that CC contact Roy Ventura at USAID to organize a meeting to discuss his experience and results of focus groups in the JV (organized).
- Stays in the field/Jordan Valley were discussed, and JVA recommended either Safi Potash Guest House or the Higher Council for Youth Camp. Either could be coordinated through the JVA.
- Community interviews were also discussed, and it was agreed that water and tourism would be included as important topics (included).
- Baseline interviews should include the municipalities (expansion plans), governates, MOE, MPWT, aquaculture/Hajem Halasa and Majdi Al-Qarn, USAID contractors (PA, AED, etc.) and GTZ for their water conservation and other program plans, FOEM (Dead Sea paper), Mercy Corps/Jordan River Foundation, Noor al Hussein, hotels (green tourism practices) and industry, religious groups/waqf, the farmers' association, and the Jordan Hashemite Fund for information on sustainable agriculture (Majd Udwan).
- Ecotourism Routes will be much clearer after CC meets with RSCN.
- The proposed regional technical training institute, Bridging the Rfit, was discussed, and Sandi requested that CC uncover where it is proposed as it will

take up to 150 dunums or acres/Cornell and Stanford are coordinating; CC said they will ask the Tafileh Governate.

- The team requested the report on sinkholes from the Secretary General of JVA (no need as CC is getting from UJ).
- CC requested the project report format; Sandi noted that she had submitted it to USAID and JVA earlier, and would re-submit a new, more detailed version.
- SAT images were requested by CC and discussed. CC was invited by JVA to submit a letter of request, but Sandi discouraged them, as SAT images have been requested in the past and it is doubtful that the cost can be covered by the project's budget. It is critical that CC concentrate on the photo surveys.
- JVA/Nisreen stressed the need to focus on undeveloped areas, as a priority for land use planning. She also invited CC to make use of the people from JVA who can help the team including coordinating field visits with Eng. Akmad to better understand off-road vacant pieces of land.
- Sandi requested that the legend be well coordinated.
- It was agreed that the Weekly Meeting with JVA would be held on Wednesday at 10:30 am on March 17, on Thursday at 10:30 am on March 25 (as the 24th is a focus group), and as a presentation on Wednesday at 10:00 am on March 31.
- The Project Manager, Ramzi Kavar, requested that any letters or needs should be first addressed to him and he will address JVA. He requested that CC send copies of the following: March 11 meeting minutes (in bullet fashion); March 11 power point presentation; updated work plan and schedule.

Date: Thursday, March 17th, 2004
Time: 10:30 a.m.
Place: Jordan Valley Authority
Subject: Jordan Valley Preliminary Land Use Plan – Weekly Meeting
Sent To: Ramzi Kavar, Project Manager, March 24, 2004

Attendees:

Project Coordinator, JVA:	Nisreen Araj
Project Manager/AMIR:	Ramzi Kavar
Member of Steering Committee/JVA:	Eng. Ahmad Saeed
Member of Steering Committee/JVA:	Eng. Ekram El-Daghistany
Land Use Planning/Tourism Consultant:	Sandi Chesrown
Consolidated Consultants (CC):	Khaled Murad (Project Director)
	Rola Quba'a
	Majd Tukan

Before the meeting, Sandi Chesrown presented the progress to date that was achieved by the consulting firm. This briefing is as presented in the attached Memo of March 17th, 2004. After that, the meeting with the Consultant's representatives discussed the following issues of concern:

- The Project Manager requested to receive a copy of the questionnaire to be used at the Focus Groups.
- The Project Coordinator mentioned that there was no need for further letters addressing the Department of Antiquities regarding facilitation of the work of the Consultant in conducting an interview. It was mentioned that the letter addressed to the Ministry of Tourism and Antiquities is enough.
- The Directory for the project was distributed to the attending members and it was agreed to modify some titles in this directory and redistribute it through e-mail to all the team members.
- A brief description of the preparations for the focus groups sessions was provided. It was mentioned that the invitations were sent to the target groups and that the questionnaire to be used during the three focus groups sessions was finalized. Also, the Project Manager was informed of the dates, places and schedule of each of the three focus groups.
- The Project Coordinator and Project Manager were informed about the joint visit that was to take place between the Consultants conducting the Photo Survey for the project and the Jordan Valley representatives on Wednesday March 17th, 2003.
- The CC Project Director also presented a brief description of the progress achieved. It was mentioned that the project is progressing well with harmony among the team members. Any concerns were being conveyed to the Project Coordinator and that the Land Use Planning/Tourism Consultant assisted in focusing the teams work. The Photo Survey is also progressing well. CC is looking forward to the Focus Groups Sessions to know the needs and requirements of the people affected by the project.
- The Jordan Valley Authority Project Coordinator requested that letters be carefully reviewed prior to sending them to the Project Manager.
- After the meeting, Sandi Chesrown met with Ekram Daghistany to discuss the investment layer regarding suggested hotels and projects along the Dead Sea shore.

Date: Wednesday, March 25th, 2004
Time: 9:30 a.m.
Place: Jordan Valley Authority
Subject: Jordan Valley Preliminary Land Use Plan – Weekly Meeting
Sent To: Ramzi Kavar, Project Manager, March 30th, 2004

Attendees:

Project Coordinator, JVA:	Nisreen Araj
Project Manager/AMIR:	Ramzi Kavar
Member of Steering Committee/JVA:	Eng. Ahmad Saeed
Member of Steering Committee/JVA:	Eng. Yousef Hassan
Land Use Planning/Tourism Consultant:	Sandi Chesrown
Consolidated Consultants (CC):	Khaled Murad (Project Director)
	Rola Quba'a
	Lama El-Awad

The meeting discussed the following issues:

- A copy of the draft title block to be e-mailed to the Project Manager.
- The need of locals for legal advice from JVA when they sign agricultural contracts and their need for marketing support.
- Regarding the focus group sessions, the following was briefed:
 - For the first focus groups session for Zone 3 there was a good presentation from both involved ministries and authorities and from the locals.
 - For the second focus groups session for Zone 2 there was presentation only from involved ministries and authorities.
 - For the first focus groups session for Zone 1 there was a good presentation from the locals. This helped in determining the positive aspects, weaknesses and skills of the local people along with the available land uses in the area of concern.
- Regarding the photo survey, groups are going to the field and most of the north, middle and south Jordan Valley have been covered. The coordinates and photos are under preparation for linkage to the GIS.
- The desktop review is progressing well.
- Great effort is being put into the photo survey.
- At the end of the photo survey there will be two days of visit with JVA in order to review areas that were difficult to locate. This was agreed to be an efficient approach.
- The presentation to the clients will be on the 31st of March and will be confirmed later. On the 31st of March, the Land Use Planning/Tourism Consultant will also do a D-briefing for the USAID.
- The working schedule for March was provided to the information manager for distribution to the team members.
- The fish farm visit was successful. The same idea of fish farm is being suggested for the Karameh Dam as a project for the army retirees.
- The Kafrien Dam is being planned for tourism and that the TOR for a study on how to develop the dam area for tourism is ready and will be going out.
- The idea of an industry to produce aerators and nest instead of importing those equipment from Egypt was discussed. Such an industry does not require a lot of skills and that it is very low technology and low cost. The Near East Foundation was studying this idea.

- The presentation to JVA will include as many people concerned from the different involved parties in order to get a good feedback on anything that might be missing for the project and in order to allow for more input of ideas.
- Maps will be sent via courier to the Land Use Planning/Tourism Consultant.
- The Project Coordinator expressed concern whether the Consultants have gone deep enough into the GIS layers provided to them.
- Consultant has already gone through the GIS layers and any identified contradictions will be reported to Project Coordinator after compiling them into one set of required clarifications.
- The Transportation engineer is working and he will be joining the field visit of Saturday March 26th.

Date: Wednesday, April 7th, 2004
Time: 12:00 a.m.
Place: Jordan Valley Authority
Subject: Jordan Valley Preliminary Land Use Plan – Weekly Meeting
Sent To: Ramzi Kavar, Project Manager, April 13th, 2004

Attendees:

Project Coordinator, JVA:	Nisreen Araj
Project Manager/AMIR:	Ramzi Kavar
Member of Steering Committee/JVA:	Eng. Ahmad Saeed
Member of Steering Committee/JVA:	Eng. Yousef Hassan
Member of Steering Committee/JVA:	Eng. Ekram El-Daghistany
Member of Steering Committee/JVA:	Dr. Suheil Al-Wahsheh
Member of Steering Committee/JVA:	Eng. Samir Bsharat
Consolidated Consultants (CC):	Khaled Murad (Project Director)
	Dr. Sawsan Himmo
	Rola Quba'a

The meeting discussed the following issues:

- Phase I is not completed since the photo survey is not finished yet.
- JVA is ready to meet with the team members to help on any issue they need to inquire about. The contact to arrange for any meeting with JVA should be through the Project Manager.
- The JVA will get involved in the Phase II analysis and regular meetings based on request will be held to complete the analysis on time.
- Provide to JVA maps that shows the areas covered by the photo survey.
- The approach to be adopted in conducting the carrying capacity is a combination of both economic and ecosystem approaches. The Dead Sea is an environmentally and culturally significant site and that is why a combination of both approaches should be used. However, note that the Mujib reserve and industrial expansions (Potash Area) are to be excluded from the carrying capacity analysis but the road from the Dead Sea Panoramic Complex to the Dead Sea shores is to be included. The Consultant will meet with Eng. Samir Bsharat and Eng. Ekram Daghistani to discuss the carrying capacity and the zones to be included.
- This land use study should consider the expansion of municipalities.
- FOEME requested maps and data related to sinkholes for proposals related to Dead Sea biosphere reserve and UNESCO heritage site. Regarding these, FOEME should address JVA in an official letter.
- In response to NGOs question on availability of data from this project, after taking the approval of the Cabinet of Ministers, JVA will decide on whether the information will be available for the public. At this stage it is still premature to answer and also many of the data are not for JVA but for other authorities.
- Emphasized the need for the Study on Environmental Assessment of the Agricultural System in the Jordan Valley and JVA will try to get it from Dr. Abd Al-Nabi Fardous.
- Agreed to use provided references as background material but the Consultants will not prepare a literature review. Literature review is not requested for this project. There are many studies and the Consultant is requested for conclusions. It is enough that Consultant cross-reference the conclusion with the respective study and differentiate between Consultant's contribution and literature contribution.
- Archaeological sites which are categorized as "under excavation" will not be shown on the printed maps but will be part of the GIS layers.

- When contacting Sandi Chesrown by e-mail, a copy should be sent to the Project Manager.
- JVA will provide the Consultant with a copy of the Environmental Impact Assessment for the Mujib Diversion Weir conducted by Dar Al-Handasah for the Jordan Valley Authority (JVA).
- A session at the Consultant office is to be held to follow up on the progress achieved with respect to GIS work and re-emphasize the areas that need to be covered by photo survey.
- JVA will update the Consultant on any related information available.

Date: Wednesday, April 14th, 2004
Time: 11:00 a.m.
Place: Consolidated Consultants Office
Subject: Jordan Valley Preliminary Land Use Plan – Weekly Meeting
Sent To: Ramzi Kavar, Project Manager, April 18th, 2004

Attendees:

Project Coordinator, JVA:	Eng. Nisreen Araj
Project Manager/AMIR:	Eng. Ramzi Kavar
Member of Steering Committee/JVA:	Eng. Ahmad Saeed
Member of Steering Committee/JVA:	Eng. Gloria Qandah
Member of Steering Committee/JVA:	Eng. Samir Bsharat
Consolidated Consultants (CC):	Khaled Murad (Project Director)
	Dr. Sawsan Himmo
	Saed Aqel
	Rola Quba'a
	Abdel Rahman Jaber

The meeting discussed the following issues:

- Summarized progress of Phase II–Analysis. The social questionnaires have been analyzed but the analysis was done in Arabic. So, it still needs to be incorporated in English into the social report.
- The analysis is built on the background information, the interviews conducted by the specialists and on the Consultants experience with projects implemented in Jordan Valley.
- A team meeting was held last Sunday (April 11th, 2004) in which the next steps of the analysis phase, the evaluation criteria and matrix to be used in evaluating land use recommendations. As a result, a new category on water conservations was added to the criteria and the weighting scores were set to range from +3 to -3. These land use criteria are built on analysis made. The modified Land Use criteria were e-mailed to Sandi for review but no feedback has been received yet. It is hoped to have the meeting for criteria discussion on April 22nd, 2004.
- The land use recommendations will be made for both existing land uses and for unused land parcels.
- It is requested to discuss municipalities' expansion. For this purpose, the Consultant will meet with Eng. Samir Bsharat to discuss the municipalities' expansion.
- End of April is the deadline for the specialists to submit their reports. The proposed draft outline presented by Sandi is currently modified by the specialists to fit their requirements and the framework which they have established.
- The Consultant is in contact with Sandi via e-mail and the Consultant is copying the Project Manager on each e-mail sent to her.
- Explained to the Project Coordinator that the field trips to the suggested dams locations were canceled because the suggested dams of the south are designed by the Consultant and consequently they have the required information about them.
- In the GIS meeting following this meeting, JVA will check the photo survey work and decide on what trips need to be made with JVA personnel.
- Discussed the items mentioned on the work schedule under the analysis phase and agreed that all are fine except for the items on "legal status of water and its pricing" and "cost estimates for proposed improvements". The Project Manager and the Consultant agreed that given the project time frame, these

two activities cannot be addressed in details. Only a paragraph is to be included explaining the existing prevailing tariffs.

- JVA provided the Consultant with the following:
 - Mujib and Southern Ghors Irrigation Project - Stage II: Environmental Comparison of Headworks Options and Impact Mitigation Programme.
 - Environmental Assessment study for the Agricultural System in the Jordan Valley (in Arabic).
 - Map of the Red-Dead Canal alignment taken from Harza Study.
 - Architectural Guidelines of Aqaba Economic Zone.
- JVA emphasized that they cannot change existing land uses. Nevertheless, the Consultant is free to provide his recommendations and it is up to JVA to implement them or not.
- The JVA Project Coordinator expressed concern regarding the process of the analysis that will be followed and that an overall analysis is expected for all three zones before going into details and evaluating specific land uses in specific parcels of lands.

A GIS meeting was held directly after the weekly meeting. In this meeting, JVA reviewed the GIS work. It was explained to JVA about how the process of the GIS work and they were shown the areas covered by the photo survey. JVA requested that the process of the photo survey and the use of satellite image be documented.

The classification of areas will be in general and in limited cases up to parcel number.

Based on this meeting, it was agreed with JVA that after finalizing the land use zoning, JVA will decide what areas they need to be field checked.

Date: Wednesday, April 21st, 2004
Time: 10:00 a.m.
Place: Jordan Valley Authority
Subject: Jordan Valley Preliminary Land Use Plan – Weekly Meeting
Sent To: Ramzi Kavar, Project Manager, May 3rd, 2004

Attendees:

Project Coordinator, JVA:	Eng. Nisreen Araj
Project Manager/AMIR:	Eng. Ramzi Kavar
Member of Steering Committee/JVA:	Eng. Ahmad Saeed
Member of Steering Committee/JVA:	Eng. Yousef Hassan
Member of Steering Committee/JVA:	Eng. Ekram El-Daghstany
Member of Steering Committee/JVA:	Eng. Gloria Qandah
Member of Steering Committee/JVA:	Dr. Suheil Al-Wahsheh
Member of Steering Committee/JVA:	Eng. Samir Bsharat
Member of Steering Committee/JVA:	Eng. Nabil Radaydeh
Consolidated Consultants (CC):	Dr. Sawsan Himmo Rola Quba'a

The meeting discussed the following issues:

- Progress to date, issues of concern, and any pending questions.
- Communication is an ongoing process with the Land Use/Tourism Planner, Mrs. Sandi Chesrown.
- The Project Manager met with the architects to discuss the architectural guidelines and agreed that as this is a three months project, the guidelines will be brief and to the point.
- CC agreed to provide pictures of the photo survey for the Jordan Valley presentation.
- The Project Coordinator and Jordan Valley Authority representatives met last week at CC office and checked the GIS progress.
- Land Use Planning:
 - It was agreed that the Consultant is free to suggest any land use and the Jordan Valley Authority will give its feedback later.
 - The Consultant's team met and agreed on design criteria; selected some areas and lands to apply the proposed land use activities.
 - GIS specialist provided Consultant with a satellite image that is available only to him.
 - If there is any area not covered by photo survey, JVA will direct the Consultant.
 - Locations of dumpsites are not covered yet and the Consultant is facing difficulty to get their exact locations. So, Jordan Valley Authority directed Consultant to contact Mr. Adnan Gharaibeh (079-5303675) to determine those locations.
 - Quarries (sand and marble) were provided on a map and next week JVA will provide Consultant with a map for quarries suggested by JVA.
 - There are travertine quarries east of Suweimeh, at Deir Alla, Fanous (east of King Abdallah Canal), Karameh, Ghor Kabd, and Farm of Mr. Rafeek Kavar.
- Regarding the design Criteria for land use, the following issues were mentioned:
 - Design criteria was provided by Ms Chesrown. Consultant team met and modified those criteria.

- The Consultant has reacted to the set of proposed land use activities where certain land parcels were identified and then the team met and started filling the matrix.
 - It was agreed that land parcels for land use will be given a separate numbering special to proposed land use and be put on a separate layer.
- With respect to the key map, JVA said that Consultant is free to select the method deemed clear by him.
- Once the land use matrix is finalized by Consultant, it will be provided to JVA for review.
- The output of focus group provides preliminary outcome for land use planning as directed by Mrs. Chesrown. Then it will be screened using the criteria and later discussed with the involved party.
- JVA is still concerned that the Consultant is going into parcels before going into zones in general.
- The Consultant indicated that parts of zones will be suggested and will not go into parcels.
- In response to the questions on whether acceptable results will be reached or not, the Project Manager commented that no one knows. All that can be said is that the process is transparent and there are meetings. So, if there is a suggestion to guide the Consultant please advice. However, it was noted that eventually the land use planning is the responsibility of the land use planner.
- JVA requested if there is a possibility to have a demonstration on how land use is planned for one of the parcels. But Project Manager suggested that it is better if JVA participated in the analysis.
- JVA conveyed the concern that the layers were not all put together to analyze existing situation. However, the Consultant commented that this was done on GIS because it was not possible to do it on printed maps due to scale. Consequently, it was done directly on GIS.
- As JVA wants a documentation for analysis, it was agreed to have a meeting with the JVA where the Consultant's the specialist will be available to answer and discuss all their concerns. The Consultant will send a copy of matrix output before hand and then call for a meeting at CC office to discuss it in a whole day meeting.
- As the output will soon be available, JVA hoped that after viewing output, the Consultant would be flexible for comments.
- With respect to municipalities expansion, JVA have received from Suweimeh municipality and will provide this expansion plan to Consultant with ideas on municipalities expansion.
- RFP for Karamah Dam from JVA includes only request for touristic activities and for fish farming.
- Discussed the Katar areas and what have been studied at these areas.
- Consultant requested the road layer along the Jordan River from JVA (the available road plus the proposed one).
- An electronic copy of the proposed Dead Sea east coast road will be provided to the Consultant to advise if it has any environmental impacts.
- The Consultant will send a letter to JVA alerting JVA that fish farm and bird watching conflict with each other.
- After distribution of the matrix, a date will be fixed to meet JVA. The consultant will provide the map and matrix to JVA next week.
- If JVA have any concerns, the Consultant will convey them to Mrs. Sandi Chesrown.

Date: Wednesday, April 28th, 2004
Time: 10:00 a.m.
Place: Jordan Valley Authority
Subject: Jordan Valley Preliminary Land Use Plan – Weekly Meeting
Sent To: Ramzi Kavar, Project Manager, May 3rd, 2004

Attendees:

Project Coordinator, JVA:	Eng. Nisreen Araj
Project Manager/AMIR:	Eng. Ramzi Kavar
Deputy Secretary General	
Head of Steering Committee/JVA:	Eng. Mousa Jamani
Member of Steering Committee/JVA:	Eng. Yousef Hassan
Member of Steering Committee/JVA:	Eng. Ekram El-Daghistany
Member of Steering Committee/JVA:	Eng. Gloria Qandah
Member of Steering Committee/JVA:	Dr. Suheil Al-Wahsheh
Member of Steering Committee/JVA:	Eng. Samir Bsharat
Consolidated Consultants (CC):	Khaled Murad
	Rola Quba'a

The meeting discussed the following issues:

- Consultant's progress and approaching the end of Phase 2.
- Week of May 3rd is end of analysis period during which the Consultant receive reports from the specialists. Afterwards, the Consultant will put these reports in a format of a draft report according to an outline appropriate to the study and that fits the Request for Proposal (RFP).
- Mrs. Snadi Chesrown has e-mailed a checklist and the PM has responded to it.
- The fish farming and architectural guidelines are the work of Mrs. Sandi Chesrown. Nevertheless, the Consultant has proposed these guidelines. As for the analysis process, there is contact with Mrs. Chesrown on the methodology being followed.
- The proposed land use activities matrix is ready and the maps will be ready by tomorrow.
- It was agreed to have the workshop for review of preliminary land uses on Thursday May 6th, 2004. Before the workshop, the process should be clear for JVA through a Memo. If JVA needed more time for discussion, there will be a continuation on the following working day. JVA emphasized that all team members should attend this workshop.
- Information requested in previous meeting was available with Project Coordinator and she handed them over to the Consultant. It was noted that the information handed to the Consultant so far is all the information available at JVA and hence no further information is expected to be requested.
- The following information were provided to the Consultant at this meeting:
 - Hard Copy of Alignment for the Road along the Jordan River.
 - Hard Copy of Map of quarries in Jordan Valley.
 - Steering Committee comments on March Progress Report and the Minutes of Meeting of April 7th and April 14th, 2004/
 - Capacity (number of beds) of the available and proposed hotels along the eastern coast of the Dead Sea.

Date: Wednesday, May 5th, 2004
Time: 10:00 a.m.
Place: Jordan Valley Authority
Subject: Jordan Valley Preliminary Land Use Plan – Weekly Meeting
Sent To: Ramzi Kavar, Project Manager, May 16th, 2004

Attendees:

Project Coordinator, JVA:	Eng. Nisreen Araj
Project Manager/AMIR:	Eng. Ramzi Kavar
Deputy Secretary General	
Head of Steering Committee/JVA:	Eng. Mousa Jamani
Member of Steering Committee/JVA:	Eng. Gloria Qandah
Member of Steering Committee/JVA:	Eng. Ahmad Saeed
Consolidated Consultants (CC):	Dr. Sawsan Himmo
	Rola Quba'a
	Abd Rahman Jaber

The meeting discussed the following issues:

- Eng. Mousa Al-jamaany began by stating he was not sure what these maps represented. He added that he received different comments ranging from: "...given that there was no North arrow and a grid on these maps that did not pass by an engineer before they were produced," to the fact that the maps "... did not propose land uses in the areas that are of most significance to the JVA which are neither municipal nor agricultural, but known as 'other' lands."
- Eng. Mousa expressed the disappointment of the JVA with these maps and that their comments were documented in detail. These comments however would not be handed to the CC officially before getting the input of the LUP, at which time they would be combined and refined and delivered to them officially.
- It was indicated by the Consultant that the provided maps were indicative maps to be used with the matrix to give an idea to JVA about locations related to proposed land use activities presented in the Proposed Land Use Activities Matrix. These maps are not part of final maps to be submitted.
- Among comments on the maps was that the Development Areas were not included on the maps. Also, in the south, there are major villages that were not included.
- Consultant did not include all layers on the maps because then the maps would become unclear to the viewer and this was not the purpose of those maps.
- JVA decided not to have the workshop on Thursday May 6th, 2004 and agreed with the Consultant to have it on Saturday May 15th, 2004.
- The 12 map sheets and the discussion notes have been sent by the Project Manager to Mrs Chesrown, the land use planner, for her review. Mrs. Chesrown will send her comments to JVA and then unified comments will be issued officially to the Consultant. Afterwards, sessions will be held between Consultant and JVA to reach unified conclusions and results.
- JVA wants the final maps to serve as a model to coming projects. Therefore, it needs a lot of work and discussions and involved parties need to be flexible in order to arrive at suitable results.
- According to the Project Manager, the maps are not useful for discussions with the members of the Steering Committee as many information were missing from the maps.
- The need to have a member from Water Authority of Jordan to be in the steering committee since there is a lot of interaction with respect to the project and WAJ authority is special in Jordan Valley because it has lots of

work there. So, a member is needed for the final discussions in order to check on information of water projects.

- Final production of the photo survey is expected to have each photo labeled and indexed.
- Next week JVA will be available on daily basis to follow up with the Consultant on the issue of comments on the maps.
- A list of institutions that own lands in the JVA mandate area was reviewed and coded according to the 4 categories agreed in by JVA. Parcel ownership for which JVA specified which parcels are to be considered as governmental and which as private parcels.
- Next weekly meeting will be in CC office so that the Consultant can get feedback on the GIS work and on the preparation for the workshop.

Date: Wednesday, May 12th, 2004
Time: 10:00 a.m.
Place: Consolidated Consultant Office
Subject: Jordan Valley Preliminary Land Use Plan – Weekly Meeting
Sent To: Ramzi Kavar, Project Manager, May 18th, 2004

Attendees:

Project Coordinator, JVA:	Eng. Nisreen Araj
Project Manager/AMIR:	Eng. Ramzi Kavar
Member of Steering Committee/JVA:	Eng. Gloria Qandah
Member of Steering Committee/JVA:	Eng. Ahmad Saeed
Consolidated Consultants (CC):	Dr. Sawsan Himmo
	Eng. Saed Aqel
	Rola Quba'a

The meeting discussed the following issues:

- Maps do not present survey/baseline conditions; they were indicative maps to be used with the matrix to give an idea to JVA about locations related to proposed land use activities presented in the Proposed Land Use Activities Matrix.
- The Consultant will follow the Terms of Reference.
- Discussed technical issues related to the maps.
- A discussion regarding the parcel ownership information provided by JVA took place between Eng. Nisreen Al-Araj and Mr. Saed Aqel, whereby the number of parcels was found to be much less than the whole area. It was agreed that Eng. Al-Araj would clarify the issue by phone to Mr. Aqel the following day. This was done and it became clear that the database that was provided to the CC was correct and did contain the total number of parcels.
- Lands provided by the Department of Lands and Survey do not cover the south because these areas are not surveyed yet.
- Any inaccuracy in the parcel ownership layer resulting from the Department of Land and Surveys original boundary drawings is acceptable. It was agreed by all to have land use classifications indicated on lands irrespective of parcel ownership of these lands. Since most land under JVA mandate are vacant, the land use plan should cover all areas regardless of ownership status.
- It was mentioned by the Consultant that the baseline maps were not available in a format suitable for use in team charette, it was not possible to have bubble diagrams because the scale did not allow that.
- To determine land uses for the vacant areas, there is a need to meet with people who know those areas or with a person who from the photo survey is capable to determine land use activities for the area.
- The land use activities arrived at so far were from the focus group sessions and the interviews conducted by the team members.
- Based on background material, interviews and scientific material, and in the presence of the GIS specialist, the Consultant will work on determining ideas for land use. If this does not work, the Consultant needs to meet with JVA to decide.
- The attendees reviewed the photo survey to see how much it covered. The JVA staff mentioned that there needs to be a useful way to link the pictures to the maps. The JVA staff also observed that the photo survey coverage concentrated on the existing developed areas of land while the emphasis was requested from the beginning of the project to focus on the undeveloped areas. It was noted that the Consultant did the photo survey according to the directions of the Land Use Planner.
- Reviewed the infrastructure layer.

- The preliminary land use layer is still a draft.
- The JVA staff stated that their main concern is to have an end product that is useful as land use that would guide the future.
- Few comments on the proposed land use activities matrix. These included the following:
 - For proposed land use activity No. 2, to be changed to residential housing without specifying that it is for military.
 - For proposed land use activity No. 3, this cemetery already exists and need to be checked on site.
- The following comments were provided for the maps:
 - The name of the Red-Dead Sea alignment should be modified to reflect that is a proposed alignment.
 - The JVA staff stated that the maps need to be consistent in their presentation. As an example, the water networks GIS layer provided to the Consultant covers only the northern Jordan Valley, and therefore to maintain consistency this layer will not be included on the printed maps.
 - The water networks layer provided to the Consultant covers only the northern Jordan Valley. So, due to lack of consistency this layer not be included on the printed maps but it to be kept as a layer on the GIS.
 - The Consultant believes that JVA would need the acquired locations for the pump stations, trunks sewer and the wastewater treatment plant.
 - With respect to the electrical power lines, these are not available.
 - No refuse routes are available only the locations of solid waste dumping sites.
 - To have a “Match line” for the maps.
 - Remove the water lines and leave only the main conveyor.
 - On all the maps include Tiberias Lake, governorates boundaries, boundary of Jordan, Dead Sea, and the Jordan River.
 - On the parcel ownership map, include that the data is from the Department of Lands and Survey and that is why there is a discrepancy in the boundaries.
 - The JVA staff mentioned that they include a footnote on their maps, which states that locational errors are expected due to differences in data sources.
- The coverage called “Tres1-Area” inside the folder “Treasury” can be used as governmental areas.

Date: Saturday, May 15th, 2004
Time: 9:00 a.m.
Place: Consolidated Consultant Office
Subject: Jordan Valley Preliminary Land Use Plan – Internal Team Meeting to Discuss Potential Land Use activities for the Vacant areas in the Jordan Valley

Attendees:

Consolidated Consultants (CC): Dr. Sawsan Himmo

The meeting discussed the following issues:

- Maps provided to Jordan Valley Authority (JVA) and comments received from JVA.
- Matrix of the Proposed Land Use Activities and the need to finalise the explanation for the criteria.
- Comments received from Mrs Sandi Chesrown with respect to the submitted draft final report and the need to finalise the corrections within two days.
- Revision of the land use activities in the context of the comments received from JVA.

The following is the results of the land use activities discussions:

1. With respect to the proposed military retirement housing near Adassiya Weir, it was first agreed that no need for it to be designated as a military; it will be proposed as residential housing. It was then discussed that in the Adassiya area there is a haphazard residential expansion. Thus, a planned residential complex will result in an organized residential housing that will provide a beautiful scenery that encourages eco-tourism. But it should be known that having such a complex will have cesspits for wastewater disposal and it will be a very long time before a proper wastewater system is established for such a complex. Consequently, having the cesspits will be a source of pollution to the King Abdallah Canal.
Also, a residential housing in that area is expected to be expensive. A better suggestion would be to have it as a touristic village (small houses- lodges or something feasible to receive tourists at a reasonable price- that host tourists) as a sort of “Community Based Tourism”. So, the final agreement was to have it as a sort of Community Based Tourism housing especially that it is very close to the Yarmouk Battle Site.
As it is near Adassiya Village, it was agreed too to that the expansion of the Addssiya Village would be to the north and to the east.
2. With respect to the expansion of the North Shuneh municipality, it was agreed with JVA comment that the expansion to the east is not appropriate and that the expansion would be to the north of the North Shuneh.
Discussed whether it is possible to change the housing policy on agricultural units so that to increase the percentage of land on which the residents can build on. But then

those lands are assigned for agricultural use and therefore agreed that it is difficult to change such a policy.

Also, the re-location of the light industries (such as garages) available along the main road of the North Shuneh was discussed. But due to location limitations, it was not possible.

3. Near Abu Habil Jordan Valley Vocational College, changed the suggested location to the east of Wadi Al-Yabis village on the parcels that appear to be owned by JVA. This is better as Wadi Al-Yabis has a higher population density compared to Abu Habil.
4. The discussion on Kurkuma's potential for tourism development pointed that the site is privately owned. Also, suggesting it as a cultural heritage site will result in a competition with Pella which is one of the Decapole cities and that should become the cultural heritage site. Maybe can have renovation to become archaeological sites but not cultural heritage. According to Jordanian Archaeological Law, Kurkuma cannot be classified as a cultural heritage site as it is not older than 1,700 years. Kurkuma is only a traditional village.
Suggest to have Pella, Tabqat Fahel, springs (wadi El-Jurm) to become one cultural heritage site.
5. Between Khazma and Dirar to the East where JVA Rest House is located, there are vacant and undeveloped lands. It is suggested to have the following uses:
 - a. Expansion of the residential area;
 - b. Grazing area;
 - c. Handicrafts centre; and
 - d. Dairy products industry as was requested during one of the focus groups.
6. All team members agreed that there is a need for adequate residential complexes that suit the qualifications of people such as agricultural engineers, teachers, etc..
7. Wala and Mujib Dams can be used for touristic activities and can be linked to archaeological locations such as the Royal Road, pre-historic villages, etc..
8. Fish farming can take some water from Southern Mujib conveyor where the water will be circulated after treatment in the fish farming ponds to avoid large amounts of water.
9. As a final suggestion towards land use, the team agreed to have projects classified and used to stamp the undeveloped areas in the Jordan Valley. The agreed categories of land use and activities under each of them are presented in **Table 10**.

Table 10: Proposed Land Use Activities

No.	Category	Symbol	Area Needed	Number	Location	Comments
1.	Animal Production Icons (AP)					
1.1	Fish Farming	APF	300 dunums/farm	10	Side wadis	Closed System
1.2	Poultry Farms	APP				Not suitable to have such farms in Jordan Valley due to weather conditions (hot temperatures)
1.3	Animal Farms	APA	3,000 dunums/farm	15	Undeveloped lands with potential for natural vegetation	Include a storage house for supplementary feed
1.4	Veterinary Clinic	APV	5 dunums/clinic	6		Short travelling distance

No.	Category	Symbol	Area Needed	Number	Location	Comments
2	Industrial Activities (IA)					
2.1	Light Activities	IAL	200 dunums/activity		At each major community	
2.2	Medium Activities	IAM	2,500 dunums/activity	3	North, Middle and South Jordan Valley	
2.3	Heavy Activities	IAH	500 dunums/activity	3	South Jordan Valley	
2.4	Free Zone	IAF	3,000 dunums/activity	1	Middle Jordan Valley	
3	Educational Institutes (EI)					
3.1	University or College	EIU	200 dunums/site	2	North and South Jordan Valley	
3.2	Vocational/Training Schools	EIV	20 dunums/site	3 already proposed + additional 3		
3.3	Research Centres	EIR	500 dunums/site	1	South of the Dead Sea	
3.4	Schools	EIS	1 dunum/school	Elementary: 8* Secondary: 8*	North and South Jordan Valley	
4	Health Care (HC)					
4.1	General Hospital	HCH	50 dunums/hospital	3	North, Middle and South Jordan Valley	
4.2	Comprehensive Health Centre	HCS	20dunums/centre	6	Two at each of North, Middle and South Jordan Valley	
5	Community Facilities (CF)					
5.1	Landfills and Composting	CFL	500 dunums/site	4	North, Middle and South Jordan Valley and Southern Ghors	
5.2	Treatment Plants	CFT				Already Proposed
5.3	Cemeteries	CFC	1,000 dunum/site	2	North and Middle Jordan Valley	
5.4	Sports Centre	CFS	30 dunums/centre		At each municipality	
5.5	Commercial Zones	CFZ	50 dunums/zone		At each municipality	
5.6	Bus Terminal	CFB	50 dunums/terminal		At each municipality	

No.	Category	Symbol	Area Needed	Number	Location	Comments
5.7	Housing	CFH	500 dunums/complex	Maybe 4-5	At each municipality	
6	Touristic and Archaeological Parcels (TA)					
6.1	Archaeological Parks and Museums	TAA				
6.1.1	Pella-Tabqat Fahel		1,000 dunums to the North			
6.1.2	Zara		100 dunums			
6.1.3	Naqa' Cemetery		1,000 dunums			To the south
6.1.4	Bab Ed-Dhra		1,000 dunums			Between north border of wadi Karak and the area south of the road till the police station
6.1.5	Baptism Site					To be modified for eco-tourism
6.2	Recreational Touristic Facilities (hotels, camping areas, restaurants, shops-markets, games-boating and glass boats)	TAR	200 dunums/village	5		
6.3	Eco-tourism	TAE				

* South Ghor: Qurayqera to Qater needs 3 elementary schools and 3 secondary schools. Especially Qater needs 1 elementary school and 2 secondary schools.

North Ghor: Kreimeh to Adassiya needs 3 elementary schools and 3 secondary schools, and Khazma and Umm Ayyash need 2 elementary schools and 2 secondary schools (or emphasize continuation of construction of existing school buildings).

Date: Wednesday, May 26th, 2004
Time: 10:00 a.m.
Place: JVA Office
Subject: Jordan Valley Preliminary Land Use Plan – Weekly Meeting
Sent To: Ramzi Kavar, Project Manager, June 1st, 2004

Attendees:

Project Coordinator, JVA:	Eng. Nisreen Araj
Project Manager/AMIR:	Eng. Ramzi Kavar
Deputy Secretary General	
Head of Steering Committee/JVA:	Eng. Mousa Jamani
Member of Steering Committee/JVA:Eng.	Yousef Hassan
Member of Steering Committee/JVA:	Eng. Ahmad Saeed
Consolidated Consultants (CC):	Eng. Khaled Murad
	Dr. Sawsan Himmo
	Rola Quba'a

The meeting had a set Agenda of issues to address. These were as follows:

Progress to Date:

1. Outcome of the Consultant's team internal meeting regarding land use activities
2. Status of the Specialist's Reports and Mrs. Chesrown feedback
3. Discussing progress achieved regarding JVA comments

Issues of Concern

4. Project duration and expected delivery dates
5. Land Use Planner's input

Upcoming Activities:

6. Consultant's presentation of draft final results
7. JVA review meetings/workshops

With respect to the above agenda, the following discussions took place:

- Internal meeting of team members on Saturday May 15th, 2004 was to arrive at land use activities that can take place at Jordan Valley based on the Consultant's experience. Not all issues that were mentioned in the focus groups were included in the Criteria. The team included all these activities with areas in a table and sent the memo for that meeting to the Land Use Planner and the Project Manager. The Land Use Planner found this memo to be good. A copy of this memo was distributed to the attendants of this meeting.
- Currently the team are working on responding to the Land Use Planner comments on the draft reports.
- Members of the team has went to the field to check on the comments provided by JVA and verify certain land uses such as the location of the North Shuneh cemetery.
- Currently the Consultant is working on putting the proposed land use activities into polygons representing land parcels to be used.
- All reports prepared by the Consultant's specialists have been sent to the Project Manager and Land Use Planner. These reports will serve as an

Appendix to the main report to be prepared by the Land Use Planner. It was noted that the main report uses extracts from the specialists reports.

- During the last week communication was strongly activated between Consultant and Land Use planner and the Consultant was providing her with feedback on her comments as soon as possible.
- Three layers out of the six requested are ready and two layers are 50% ready. With respect to the land use layer, the Consultant is working on it to have it as polygons on the lands to be sued. In case the Land Use Planner does not agree to them, they can be modified as they are on a separate layer.
- The Consultant cannot deliver a final land use report on end of May as he did not receive the final input of the land use planner. However, the Consultant can submit on May 30th, 2004 the draft final report that would serve as an appendix to the planner report.
- It was noted that tourism linkages, fish farming framework and land use recommendations are the land use planner work.
- As a summary, it was mentioned that maps were provided to JVA and base maps and draft reports were sent to the Land Use Planner. Comments were received from both of them and the Consultant is now working on the maps. Now, the project is in the last phase and there is a need to have a workshop to stakeholders to inform them about the project results. Therefore, the presentation needs to contain the results in a clear and simple manner.
- Agreed that the Consultant will send a letter regarding expected project duration with a schedule for the remaining time.
- Agreed to inform JVA when they can come to the Consultant's office to see the work progress on the land use layer.

Date: Wednesday, May 30th, 2004
Time: 10:00 a.m.
Place: JVA Office
Subject: Jordan Valley Preliminary Land Use Plan – Meeting to discuss a Sample of the Land Use Layer
Sent To: Ramzi Kavar, Project Manager, June 1st, 2004

Attendees:

Project Coordinator, JVA:	Eng. Nisreen Araj
Project Manager/AMIR:	Eng. Ramzi Kavar
Member of Steering Committee/JVA:	Eng. Gloria Qandah
Member of Steering Committee/JVA:	Eng. Ahmad Saeed
Consolidated Consultants (CC):	Dr. Sawsan Himmo
	Eng. Saed Aqel
	Rola Quba'a

At this meeting, the Consultant handed the Project Manager letters related to the following issues:

- Reply to a letter from the Project Manager
- Issues Related to Parcel Ownership
- Proposed Schedule for Remaining Tasks
- Draft Final Report as an appendix to the Main Land Use Report

In addition, the following references were returned to the Project Coordinator:

- Economic and Social Development Plan 1993-1997
- Economic and Social Development Plan 1986-1990 (In Arabic)
- GTZ 1996, Brackish Water Project- 2 volumes:
 - Water Monitoring Report (Final Report)
 - Soil Properties Maps in the Project Area (Final Report)
- Ministry of Water and Irrigation 2002 Annual Report

Still pending to return to Project Coordinator is the Ardani Road alignment.

At this meeting, the project coordinator was also provided with 6 maps representing a sample of the infrastructure layer, parcel ownership layer and baseline maps provided to Land Use Planner.

The meeting which aim at looking at a sample of the land use layer the Consultant is working on discussed the following issues:

- Land parcels that do not have codes are private lands. Agreed to have those private lands joined with the developed private lands layer.
- When the land use layer is developed in its final form, it will be used to subtract it from the parcels layer in order to determine the lands to be released to the public and those to be retained by JVA.
- Emphasis on the need for the logic behind selecting the activities and locations for the land use activities and the need to document the process and distribute it before the workshop.
- The technical approach followed to determine the required lands with the specified area on the GIS layer was seen as appropriate.
- It was pointed out by Eng. Ahmad Saeed that the work process followed to determine the land uses was not comprehensive whereby as an example a proposed residential land use did not take into account the related requirements of commercial facilities, public services such as schools, health clinics, cemeteries, etc...rather the approach was mechanistic without this holistic view of land use selection.

- Furthermore, Eng. Al-Araj reminded of the need for a comprehensive analysis of all factors (social, economic, environmental, etc..) that impact the selection of land uses in each area which would have been achieved through the bubble diagram analysis. The fact that it was technically not possible to produce bubble diagrams does not discard the need for such analysis.
- JVA's concern regarding that input that the Land Use Planner will send and the timing at which she will send her input.
- Discussed examples of land uses, such as:
 - Residential land use
 - Cemetery
 - Light industrial area
- Maqamat are indicated on the maps.
- Expressed the need for free zones in the Jordan Valley and the Consultant mentioned that these are already included among the proposed land use activities.
- Tourism linkages are expected to be drawn on the maps that the Land Use Planner will send via courier.
- A first draft of the land use layer prepared by the Consultant can be provided to JVA just to provide a sense of the project direction.
- Agreed that the Consultant's and the Land Use Planner land use layers will be kept separate until all comments are received. After that, the two layers will be merged into one.

Date: Wednesday, June 9th, 2004
Time: 10:00 a.m.
Place: JVA Offices
Subject: Jordan Valley Preliminary Land Use Plan – Weekly Meeting
Sent To: Ramzi Kavar, Project Manager, June 13th, 2004

Attendees:

Project Coordinator, JVA:	Eng. Nisreen Araj
Project Manager/AMIR:	Eng. Ramzi Kavar
Deputy Secretary General	
Head of Steering Committee/JVA:	Eng. Mousa Jamani
Member of Steering Committee/JVA:	Eng. Gloria Qandah
Member of Steering Committee/JVA:	Eng. Ahmad Saeed
Consolidated Consultants (CC):	Eng. Khaled Murad
	Dr. Sawsan Himmo
	Rola Quba'a

At this meeting, the Ardani Road alignment was returned to Project Coordinator.

The meeting had a set Agenda of issues to address. These were as follows:

Progress to Date:

8. Maps produced by the Consultant
9. Consultant suggested land uses
10. Issues of references and footnotes

Issues of Concern

11. Extending project duration (noting that experts are going on vacation starting mid-June)
12. Final schedule for the project
13. Project tasks to be finalized by the Consultant and those to be finalized by the Land Use Planner

Upcoming Activities:

14. Time schedule for the Land Use Planner to participate in the final production of the land use maps
15. Set a date for the workshop

Accordingly, the meeting discussed the following issues:

- In response to Eng. Nisreen Araj request for a meeting to discuss comments on the sample maps provided earlier, a meeting took place between Eng. Araj and Eng. Saeed from JVA and Eng. Ahmad Amad and Husam Huwarri from Consolidated Consultants. The Consultant sent the Project Manager an e-mail with respect to the results of this meeting.
- Eng. Nisreen Araj stressed that it is important to have the maps checked by an engineer and not only produced by a draftsman or GIS specialist.
- Jordan boundary needs to be modified, however, the Consultant cannot modify the base maps received from JVA and the Deputy Secretary General commented that project scope and duration does not facilitate such modification.

- The Consultant commented that JVA request to classify the roads layer into main roads and branches could not be done as there is no field in the attribute table that classified the roads. Eng. Araj mentioned that she would send the categorized layer to the Consultant and that the Consultant should modify the display of this layer as deemed suitable to the maps.
- A sample of the maps received from the Land Use planner was circulated to the attending members and there was a consensus that those maps cannot be worked with for the purpose of land use planning.
- The Consultant commented that the input from the Land Use Planner is not helpful to achieve the aim of the project.
- The Project Manager mentioned that the maps allow half an evaluation of the land use planner input as there is still the report.
- The Consultants commented that they do not have a land use planner on their team and this was not required from them. Another obstacle is that the current Land Use Planner does not know AutoCad or GIS. In order to finalize the work, the Land Use Planner should be available here in Amman.
- Eng. Mousa Jama'any commented that a normal level architect should be able to translate the maps and text. But still there is a big question mark on the Land Use expert. Both JVA and the Consultant doubt if she can continue the work. However, the project has to be completed.
- Eng. Mousa Jama'any requested an evaluation from the Consultant regarding how much time the Land Use Planner would need to finish the work. But the Consultant commented that as sub-contractors to this project, the Project Manager or the Land Use Planner herself is the one to comment on how long.
- JVA will request the Land Us Planner to be in Amman for finalization of the work on a lump sum agreement and she is not to leave until the project is finalized.
- The Consultant requested an evaluation of what has been submitted till present and to know where he stands with respect to completion of work in accordance to the Terms of Reference especially given that the Consultant did not receive any payment during the three months of this project.
- It was noted that each section of the Appendix to the Final Report submitted by the Consultant will be sent to a specialist from JVA for evaluation.
- It was commented that the degree by which the team specialists concentrated on land use aspects varied but the Consultant explained that the Land Use Planner report is the one that will reflect the land use planning aspects.
- It was commented that the Appendix to the Final Report submitted by the Consultant is similar to a progress report. The Consultant explained that it was needed to put the report in such a format in order to put the reader in the context of the project especially that the first part on Land Use Planning is missing.
- The Consultant mentioned that some of the specialist are leaving for their summer vacations. Therefore, it was agreed to have the workshop for discussing a sample of land use planning layers prepared by the Consultant and look at a sample of printed on Monday, June 14th, 2004.

Date: Monday, June 28th, 2004
Time: 10:00 a.m.
Place: JVA Offices
Subject: Jordan Valley Preliminary Land Use Plan – Meeting to discuss Submitted Appendix to Land Use Report
Sent To: Ramzi Kavar, Project Manager, June 29th, 2004

Attendees:

Project Coordinator, JVA:	Eng. Nisreen Araj
Project Manager/AMIR:	Eng. Ramzi Kavar
Member of Steering Committee/JVA:	Eng. Yousef Hasan
Studies Section/JVA:	Dr. Hatem Abu Khudair
Project Counterpart/JVA:	Dr. Khaleel Absi
Irrigation Directorate/JVA:	Eng. Mohammed H. Saimeh
Consolidated Consultants (CC):	Eng. Khaled Murad
	Dr. Raoul Nasr
	Majdi Salameh
	Mahmoud Hishmeh
	Rola Quba'a

The comments and issues raised during this meeting were as follows:

- Economist study member presented a brief description on how his work addressed the industrial, agricultural and touristic economic issues specifically in relation to water and employment. The work included participating in the focus groups sessions to determine people's needs and to work with the land use planner and respond to her questions and comments. It also included working with other team members to look at locations and maps in order to prioritize land use projects. The economic aspect of the carrying capacity was addressed by the economist whereas the environmental aspects were addressed by the environmental specialist.
- The committee member who discussed the economic section started by extending thanks to the economist for his efforts. Then, the following questions and comments with their respective responses were raised:
 - In response to that the financial projection for providing infrastructure services was not covered in the report, it was commented that none of the proposed land use activities required a financial projection.
 - Agreed to state in the report that where the scope of work requested a task to be done and it was not possible due to time or financial constraints to complete at this stage to mention that it will be completed during later stages that would follow this project.
 - The constraints for the concepts of water conservation approaches such water saving devices, water tariffs, low-water consuming crops, etc, need to be considered. Also, there is no decision given regarding those issues in the economic section. The response was that no decision is indicated as it is up to the decision-maker to make the decision.
 - In Table 54, there is a need to indicate what are the alternative crops to be switched to. The response was that those alternatives are presented in the section on agriculture but they were not discussed economically as there are no studies on agricultural costs in Jordan. The most recent is that of 1998 from the Agricultural Loans Institution.
 - Table 55 need to indicate the running and investment costs and the profit. The response indicated that no hotel would provide its running costs or profit but agreed to indicate the percentage contribution of tourism, agriculture and industry to GDP.

- The long-run estimates in Table 59 are not clear. The economist explained the table and agreed to include an explanation on how the long-run estimates were calculated.
- With respect to the equation for irrigation water tariff included on page 171, it needed an explanation of the segment to be added in the form of an example that would clarify the process. Also, the 12 fils category in the table should be changed to 15 fils.
- The need to indicate whether the touristic sector can make up or replace the agricultural sector participation in development and the consequent impact on the country's economy. It was agreed that this is a very good question but is not applicable especially given the project time-frame.
- Project Manager noted that agricultural areas will not be replaced by touristic investment projects. It was further commented that in the new strategy the emphasis is not anymore on tourism but also on agriculture.
- With respect to the last paragraph on page 169 (The decision to focus on the demand for water and on irrigated agriculture follows directly from the fact that supplies are already short and finding new water supplies is neither technically nor financially feasible.), it was agreed to modify the sentence as "...technically and financially challenged".
- The following comments and responses were given with respect to the section on geology:
 - Add more details on seismic design if such information is available.
 - Add more details on the requirements to build in the Katar areas if such information is available.
 - With respect to sink holes, it was commented that report only indicates the location of existing ones but does not indicate areas of potential sinkholes locations. It was indicated that a corridor indicating potential locations of sinkholes is included on the maps and therefore it was agreed to include such a map within the report on geology.
- The following comments and responses were given with respect to the section on agriculture:
 - Zoning did not follow the zoning suggested for this project. It was responded that the zoning followed in the agricultural section is that adopted by the Ministry of Agriculture.
 - The suggested cropping patterns are not viable. The response was that on page 80 of the report there is a paragraph that indicates that it is difficult to change the plant cover directly and hence from a socioeconomic perspective, "it is better to leave the area for citrus production as it is but with proper irrigation practice to achieve the best production with less water waste."
 - The suggestion of exotic fruits such as papaya was questioned but it was responded that there is a need for a study on agricultural production costs before such options can be studied for economic viability.
 - The Project Manager commented that from the meetings attended it is clear that the agricultural specialist approach is to give choices that suits the soil characteristics.
 - Agreed that the agricultural specialist would contact Eng. Saimeh (079-5732790) and arrange for a meeting to discuss the agricultural section.
- The social specialist provided a briefing on the social assessment work carried for the project. The social report was mainly based on the results of the focus groups sessions, SWOT analysis and questionnaires. Afterwards, the following comments and responses were given with respect to the section:
 - The social report did not cover the whole of the scope of work requested in the TOR. The response was that there was a discussion between the social specialist and the land use planner who emphasized that she does not need to go into details. Also, the focus groups and questionnaires

results were matching to the results of the studies reviewed. As for the task on the tribes and the training assessment, these were covered.

The social references were used and reviewed for the design of the questionnaire. Agreed to add a preamble that briefly mentions that results of the 1997 social study reference.

- Table 7 should be referenced as Peak and Pasha.
- In response to the lack of quantification in the social section, the social specialist mentioned that there are the number of Egyptian workers in the Jordan Valley that is not documented especially that many of them do not have work permits. As for why the number of schools and hospitals and similar facilities was not presented is that the land use planner is satisfied with available information and does not require further details.
The Project Manager commented that the Land Use planner participated in the focus groups sessions in order to identify the needs and the social conditions in the Valley. Thus, the results of the social study assisted in identifying the land use activities needed by the Valley.
- Poor areas were not identified. The response was that the Ministry of Social Development was contacted but there are no such studies available. So, agreed to include a statement that says even though there are poverty areas, the study could not reach a supported documentation of those areas from the focus groups sessions.
- The following comments and responses were given with respect to water resources:
 - On page 50, change the King Abdullah Canal flow from 15 to 5 m³/sec to 25 to 2.6 m³/sec.
 - Check the schematic Figure 2.
 - Check the sources for the figures and tables through out the water section.
 - The figures on water quantities from the Yarmouk should be checked.
 - The reverse osmosis cost for desalinating around 20 MCM of water from the Karamah Dam. No desalination for King Talal Dam as the quality of its water is expected to improve with the rehabilitation of As-Samara wastewater treatment plant and the implementation of the Disi project.
 - Change “Maghtas” to Baptism Site.
 - Add a legend to figures 7 and 8.
- The following comments and responses were given with respect to environmental section:
 - The report emphasized ecology but did not address the water resources, such as the impact of brine resulting from the desalination plants, or lands. The response was that the section on water resources addressed the issues of water depletion and the section on environment mentioned that there are several sources of pollution among which is the brine, industrial activities, etc. However, different ministries were approached for data but such data on pollutants, pattern of pollution and quantification of pollution are not available. So, agreed to include such a statement in the report.
 - In response to that not all the environmental references were reviewed, the environmentalist mentioned that all those references were looked at and a checklist on avifaunal, faunal and xeric plants was arrived at from such a review. However, not all the references were cited in the report because not all of them were used as a source of information.
 - In response to the comment that the Jordan Valley should have been divided into seven zones, the environmental specialist replied that they used the Birdlife International zoning of the Jordan Valley and this is indicated within the report.
 - Agreed that Majdi Salameh would contact Eng. Suheil Wahsheh (079-5809732) and arrange for a meeting.

- There are no comments on the archaeology section. However, the consultant noted that most of the sites provided by JADIS in the Jordan Valley are survey sites and no significance is yet established for those sites.
- The following comments and responses were given with respect to carrying capacity:
 - In response to the comment that the carrying capacity in the report made no reference to Sigma's study, the consultant commented that this is due to the fact that Sigma's study did not do any environmental carrying capacity analysis. Sigma's work was only a developmental plan based on economic considerations. So, the environmental carrying capacity estimate of around 18,000 bed units and Sigma's estimation of 25,000 bed units cannot be compared. However, it was agreed to indicate in the report that Sigma's number of 25,000 bed units is based on a developmental plan and economic perspective whereas the carrying capacity in this report is based on an environmental perspective.
 - Requested to add a schematic figure to the report that clarify the areas indicated as T1 and T2 in the carrying capacity section.
- The following comments and responses were given with respect to section on transportation:
 - The request to include a schematic of potential roads was explained to be difficult as the routes for such roads are not indicated or agreed upon yet.
 - The request to indicate existing routes on a figure that is clearer than the already provided one will be considered.
- It was commented that architectural guidelines need to differentiate between recommendations for areas at Dead Sea level and those that are at higher elevations. It was agreed that this comment will be discussed once the written comments are provided to the Consultant.
- The meeting ended after the above discussions and the Project Coordinator said that the comments will be sent to the Consultant by today afternoon.

Date: Monday, July 12th, 2004
Time: 12:00 p.m.
Place: CC Office
Subject: Jordan Valley Preliminary Land Use Plan – Final Meeting

Attendees:

Project Coordinator, JVA:	Eng. Nisreen Araj
Project Manager/AMIR:	Eng. Ramzi Kaware
Member of Steering Committee/JVA:	Eng. Ahmad Saeed
Land Use/Tourism Planner:	Mrs. Sandi Chesrown
Consolidated Consultants (CC):	Rola Quba'a

This meeting was considered as the last meeting for conducting the work on the project. The meeting agenda was set to discuss the following issues:

1. Production of final project maps.
2. Parcel ownership: approach for determining lands to be retained by JVA and those to be released.
3. Mapping of agricultural areas in the south Jordan Valley.
4. Rational for having a large area of cultural heritage south of Al-Mukheiba Alfouqa.
5. An expansion was added between Wadi Yabbis and Al-Maraza (Wadi Rayyan).
6. An institutional land use was added south of Wadi Rayyan to accommodate for the requested cemetery.
7. The North Shuneh wastewater treatment plant is adjacent to Karn expansion.
8. East of Al Ardah and within the expansion area, there is a need for tourism.
9. The representation of the Land Use Planner, Mrs. Chesrown, recommendations regarding Sigma Plan. (Add a footnote below maps legend indicating that says: "See the report text for recommended parcel by parcel land use".)
10. The rational for the industrial area facing the potash region.
11. Red-Dead Sea Canal alignment.
12. Any further comments by JVA.

The comments raised during this meeting with respect to the above-mentioned issues the were as follows:

- The Project Manager will discuss with the USAID the issue of modifying the number of copies and production of maps. As for the report, it was requested that the Land Use Report be a separate volume as well as to have the specialists reports be submitted in separate volumes. However, it was requested to have A3 land use maps attached within the Land Use Report.
- With respect to parcel ownership, it was mentioned that the open space are the lands to be returned. The presentation on maps of the lands to be retained and those to retained would be by overlaying the land use shapefiles over the parcel ownership and making the land use shapfile hollow.
- The agricultural areas in the south Jordan Valley are in Qa' Al Sa'adeen. With respect to the mapping of those agricultural areas, it was agreed that those will be shown on the maps if JVA obtained them and provided them to the Consultant before the submission date.
- With respect to the cultural heritage south of Al-Mukheiba Alfouqa, it was agreed to reduce its size by diving it into expansion area for Al-Mukheiba

Alfouqa, Cultural Heritage area related to Umm Qais and the rest as protected area.

- With respect to the expansion added between Wadi Yabbis and Al-Maraza (Wadi Rayyan), it was agreed to fill the space between the two in order to reflect that they are now one.
- With respect to the institutional land use was added south of Wadi Rayyan to accommodate for the requested cemetery, it was agreed to return it as mixed use.
- The Karn expansion was agreed to be kept as is.
- It was mentioned that it is ok to have tourism within the municipality of Al Ardah but no need to add a tourism area near Al Ardah.
- With respect to the land use parcels at the Eastern shore of the Dead Sea and that was part of Sigma study area, it was agreed that recommendations for those parcels will be included within the Land Use Report with a map showing the locations of those parcels.
- With respect to industrial area facing the potash region, it was agreed to add a thin strip of mixed use in order to set back from the street. However, it should be noted that JVA was aware of the need to set back from the street and have mentioned that there should be a special and very specific guidelines for this industrial strip.
- With respect to the Red-Dead Sea Canal alignment, if JVA could get the alignment it will be corrected; if not, the available alignment will be used.
- Further comments discussed during this meeting included:
 - Changing the name of the “Investment Lands” to “Proposed Investment Lands (Sigma Study Area)”
 - Near Karamah dam, the agricultural area land use will be changed to part recreational area and apart protected area.
 - Need to locate Qureiqra and Gharandal villages.

ANNEX 4 LAND USE MATRIX

ANNEX 5
LIST OF INVITEES, INVITATION LETTER AND FOCUS
GROUPS QUESTIONNAIRE

Annex 5: List of Invitees, Invitation Letter and Focus Groups Questionnaire

7 LIST OF INVITEES TO THREE FOCUS GROUPS SESSIONS

Table 11: Invitees to Zone 3 Gocus Gorup

No.	Focus Group Participants/Name of Institution	Participants Name	Phone Numbers	Number of Invited Individuals
1	Al-Hashimeyah University	Dr. Mohammad Waheeb	Fax: 05-3826613 05-3826823	1
2	Aqaba Governorate	The Governor of Aqaba: Mr. Khalid Abu Jaïd	Fax: 03-2013964	1
3	Aqaba Water Authority	Assistant to Secretary General Mr. Bilal Al-A'asi	Fax: 03-2015982	1
4	ASEZA - Directorate of Environmental Planning - Division of Permitting & EIA	Dr. Bilal Al-Basheer	Fax: 03-2091021	1
5	Department of Antiquities	Director General of DoA Abd Sameea' Abu Dieh		2
6	Farmers Association	Representative	Fax: 06-5656834	1
7	Friends of Earth - Middle East (FOEME)	Abd Rahman Tamimi	Tel:06-5866602/3 Fax:06-5866604	1
8	German Technical Cooperation (GTZ)	Dr. Andreas Kuck	Tel: 06-5359726 Fax: 06-5350421	1
9	Ghor As-Safi Municipality: -Haditha -Mazra'a -Thera' -Umm Al-Hasheem -As-Safi -Noqa' -Summar -Fifa -Ma'moura -Ghwaybeh	Eng. Maher A'ksheh	Tel: 03-2302413/17 Fax: 03-2302417	11
10	Japan International Cooperation Agency (JICA)	Kobayashi Tsutomu	Fax: 06-5858924	1
11	Jordan Environment Society	Representative	Tel: 06-5699844 Fax: 06-5695857	1
12	Jordan River Foundation	Ms Maha Khateeb Eng. Ghaleb Qudah	Tel: 06-5932730 Fax: 06-5933210 / 5922652 Mobile (Eng. Ghaleb Qudah): 077-774840	3
13	Jordan Valley Authority	Secretary General - Eng. Zafer Alem Assistant Secretary General for Southern JV- Eng. Khaled Qsous	Eng. Khaled Qsous Mobile: 079-5571256	2
14	Karak Governorate	Governor of Karak	Tel: 03-2341001 Fax: 03-2341006 / 03-2341010	1
15	Karak Water Authority	Eng. Malik Al-Rawashdeh	Fax: 03-2351260 Mobile: 077-695783	1
16	Kreditanstalt für Wiederaufbau (KfW)	Mr. Schmidt	Tel: 06-5674083 Fax: 06-5683402	1
17	Ministry of Agriculture	Representative		1

No.	Focus Group Participants/Name of Institution	Participants Name	Phone Numbers	Number of Invited Individuals
18	Ministry of Education	Representative	Fax: 06-5666019	1
19	Ministry of Environment	Representative		1
20	Ministry of Health	Representative		1
21	Ministry of Planning	Representative		1
22	Ministry of Religious Affairs	Representative		1
23	Ministry of Tourism and Antiquities	Representative		1
24	Ministry of Water and Irrigation	Representative		1
25	Motasaref of Southern Jordan Valley	Nayef Al-Hadayat	TeleFax: 03- 2302808 Mobile: 077-391764	1
26	Noor El Hussein Foundation	Mr Mahmoud Hadid	Tel: 06-5607460 06-5606993 Fax: 06-5620864	1
27	Qada' Wadi Araba		Fax: 03-2062671	1
28	Qureiqra Municipality: -Qureiqera -Ain Fedan East -Ain Fedan West -Finan	Eng. Mashour Harb	Tel:03-2064179 Mobile: 079- 5495357 Fax: 03-2302700	5
29	Tafilah Governorate	The Governor of Tafilah	Fax: 03-2242770 Tel: 03-2242800	1
30	Tafileh Water Authority	Eng. Khaled Al-Abddine	Fax: 03-2241188 Tel: 03-2242429	1
31	The Royal Society for the Conservation of Nature	Omar Abu Eid Yehya Khaled Chris Johnson	Tel: 06-5337931/2 Fax: 06-5347411	3
32	United Nations Development Programme (UNDP)	Boualem Aktouf	Fax: 06-5676582 06-5676582	1
33	United States Agency for International Development (USAID)	Mr. James Frankiewicz	Fax: 06-5920143	1
34	Wadi Araba Municipality -Be'r Mazkour Reesheh	Eng. Wajdi Al-Thalaeen	Tel: 03-2062588	2
35	Water Authority for Southern Regions	Secretary General Eng. Jihad Al-Sakrat	Tel: 03-2354249 Fax: 03-2351260	1
Total # of Invitees				56

Table 12: Invitees to Zone 2 Gocus Gorup

No.	Focus Group Participants/Name of Institution	Participants Name	Phone Numbers	Number of Invited Individuals
1	Ministry of Water and Irrigation	Representative		1
2	Ministry of Environment	Representative		1
3	Ministry of Agriculture	Representative		1
4	Ministry of Planning	Representative		1
5	Ministry of Religious Affairs	Representative		1
6	Ministry of Education	Representative	Fax: 06-5666019	1
7	Ministry of Health	Representative		1
8	Ministry of Tourism and Antiquities	Representative		1
9	Department of Antiquities	Director General of DoA Abd Sameea' Abu Dieh		1

No.	Focus Group Participants/Name of Institution	Participants Name	Phone Numbers	Number of Invited Individuals
10	Jordan Environment Society	Representative	Tel: 06-5699844 Fax: 06-5695857	1
11	Friends of Earth - Middle East (FOEME)	Abd Rahman Tamimi	Tel:06-5866602/3 Fax:06-5866604	1
12	Farmers Association	Representative	Fax: 06-5656834	1
13	Kreditanstalt für Wiederaufbau (KfW)	Mr. Schmidt	Tel: 06-5674083 Fax: 06-5683402	1
14	United States Agency for International Development (USAID)	Mr. James Frankiewicz	Fax: 06-5920143	1
15	United Nations Development Programme (UNDP)	Boualem Aktouf	Fax: 06-5676582 06-5676582	1
16	German Technical Cooperation (GTZ)	Dr. Andreas Kuck	Fax: 06-5350421 Tel: 06-5359726	1
17	Japan International Cooperation Agency (JICA)	Kobayashi Tsutomu	Fax: 06-5858924	1
18	Najwa Sha'sha'a	A local from the Area		1
19	The Arab Potash Company Limited	Representative	Tel: 06-5674376 Fax: 06-5674416	1
20	Magnesia Jordan Company	Representative	Tel: 06-5691201 Fax: 06-5691156	1
21	Crowne Plaza Hotel	Mr Osama Dabbas		1
22	Dead Sea SPA Hotel	Mr Nader Amr Mr Ramzi Nader Mr Akram Al-Shami		1
23	La Cure Dead Sea Products			1
24	AnsoStrong for Insulating Material			1
25	Rivage Dead Sea Products			1
26	Zara Dead Sea Products			1
27	Jordan Valley Fish Farm	Mr Ziad Atallah Sales and Marketing Manager	Tel: Mobile: 079- 5714308 Fax: 06-4744190	1
28	Mariotte Hotel	Mr Philip Papatopoulos		1
29	Movenpick Hotel	Mr Edgar Sollenthaler		1
30	Jordanian Mineral Himmeh Company	Ahmad Al-Salihi	Tel: 06-4651228	1
31	Zara Hotel Group	Mr. Saleh Rifai General Manager		1
32	Jordan Hotels Association	Mr Michel Nazzal		1
33	Water Authority for the Northern Region			1
34	Motasaref of Northern Jordan Valley			1
35	Suweimeh Municipality	Eng. Adel Khatatbeh		1
36	Jordanian Compnay for the Manufacturing and Marketting of Agricultural Products			1
37	Al-Hashimeyah University	Dr. Mohammad Waheeb	Fax: 05-3826613 05-3826823	1
38	Jordan Valley Authority	Secretary General - Eng. Zafer Alem Assistant Secretary General for Northern and Middle JV-Eng. Tayseer Ghzawi	Eng. Tayseer Ghzawi Mobile: 079- 5651077	2

No.	Focus Group Participants/Name of Institution	Participants Name	Phone Numbers	Number of Invited Individuals
39	Jordan River Foundation	Ms Maha Khateeb Eng. Ghaleb Qudah	Fax: 06-5933210 / 5922652 Tel: 06-5932730 Mobile (Eng. Ghaleb Qudah): 077-774840	2
40	Noor El Hussein Foundation	Mr Mahmoud Hadeed	Fax: 06-5620864 Tel: 06-5607460 06-5606993	2
41	Ministry of Public Works and Housing	Secretary General Eng. Sami Halaseh		2
42	The Royal Society for the Conservation of Nature	Omar Abu Eid Yehya Lhaled Chris Johnson	Tel: 06-5337931/2 Fax: 06-5347411	3
43	Investment Encouragement Coproration	Representative		1
Total # of Invitees				49

Table 13: Invitees to Zone 1 Gocus Gorup

No.	Focus Group Participants/Name of Institution	Participants Name	Phone Numbers	Number of Invited Individuals
1	Al-Hashimeyah University	Dr. Mohammad Waheeb	Fax: 05-3826613 05-3826823	1
2	Deir Alla Municipality -Ruweiha -Dirar -Khazma -Deir Alla -Balawneh -Northern Twal	Eng. Munther El-Bkheet	Tel: 05-3573029 Fax: 05-3573019	7
3	Department of Antiquities	Director General of DoA Abd Sameea' Abu Dieh		2
4	Farmers Association	Representative	Fax: 06-5656834	1
5	Friends of Earth - Middle East (FOEME)	Abd Rahman Tamimi	Tel:06-5866602/3 Fax:06-5866604	1
6	German Technical Cooperation (GTZ)	Dr. Andreas Kuck	Fax: 06-5350421 Tel: 06-5359726	1
7	Japan International Cooperation Agency (JICA)	Kobayashi Tsutomu	Fax: 06-5858924	1
8	Jordan Environment Society	Representative	Tel: 06-5699844 Fax: 06-5695857	1
9	Jordan River Foundation	Ms Maha Khateeb Eng. Ghaleb Qudah	Fax: 06-5933210 / 5922652 Tel: 06-5932730 Mobile (Eng. Ghaleb Qudah): 077-774840	1
10	Jordan Valley Authority	Secretary General - Eng. Zafer Alem Assistant Secretary General for Northern and Middle JV- Eng. Tayseer Ghzawi	Eng. Tayseer Ghzawi Mobile: 079-5651077	2
11	Kreditanstalt für Wiederaufbau	Mr. Schmidt	Tel: 06-5674083 Fax: 06-5683402	1

No.	Focus Group Participants/Name of Institution	Participants Name	Phone Numbers	Number of Invited Individuals
	(KfW)			
12	Mamdouh Bsharat	A local from the Area	Tel: 06-4775804	1
13	Ministry of Agriculture	Representative		1
14	Ministry of Education	Representative	Fax: 06-5666019	1
15	Ministry of Environment	Representative		1
16	Ministry of Health	Representative		1
17	Ministry of Planning	Representative		1
18	Ministry of Religious Affairs	Representative		1
19	Ministry of Tourism and Antiquities	Representative		1
20	Ministry of Water and Irrigation	Representative		1
21	Mouath Bin Jabal Municipality -Baqura -Northern Shuneh -Southern Shuneh -Mansheya	Eng. Mahmoud Abu Jaber	Tel: 02-6587177 Fax: 02-6587177	5
22	Movenpick Hotel	Mr Edgar Sollenthaler		1
23	Muadi Municipality -Muadi -Thahrat Ramel -Al-Arda -Abu Zeeghan -Damia	Eng. AbdulKareem Abu Zneimeh	Tel:05-3571706/5 Mobile: 079-5938751 Fax: 05-3572607	6
24	New Northern Shuneh Municipality -New Shuneh -Jalad -Rawda -Karama -Al-Shaghor -Jufeh -Al-Jawasreh -Kafrein	Eng. Thaer Al-Adwan	Tel: 05-3581019 Fax: 05-3581475	9
25	Noor El Hussein Foundation	Mr Mahmoud Hadid	Fax: 06-5620864 Tel: 06-5607460 06-5606993	1
26	Omar Abdullah Dahkan	A local from the Area		1
27	Sharhabeil Ben Hasna Municipality -Muadi -Dahret Al-Ramla -Arda -Abu Zeeghan -Damia	Eng. Khaled A'nab	Tel: 02-6575011 Fax: 02-6575062	6
28	Tabqat Fahel Municipality -Aramshi -Masharea -Waqas -Qleia't -Tal Al-Arbeean -Zamalia	Eng. Wajdi Masa'da	Tel: 02-6550610 Fax: 02-6560064	6

Jordan Valley Preliminary Land Use Master Plan Project

No.	Focus Group Participants/Name of Institution	Participants Name	Phone Numbers	Number of Invited Individuals
29	The Arab Potash Company Limited	Representative	Tel: 06-5674376 Fax: 06-5674416	1
30	The Royal Society for the Conservation of Nature	Omar Abu Eid Yehya Lhaled Chris Johnson	Tel: 06-5337931/2 Fax: 06-5347411	3
31	United Nations Development Programme (UNDP)	Boualem Aktouf	Fax: 06-5676582 06-5676582	1
32	United States Agency for International Development (USAID)	Mr. James Frankiewicz	Fax: 06-5920143	1
33	Wadi Khaled Organization	Mr Saleem Sobeh Bshara	Tel: 02-7500595 Mobile: 079-5190325	5
Total # of Invitees				74

8 FOCUS GROUP QUESTIONNAIRE

Jordan Valley Preliminary Land Use Planning

Questionnaire

Questionnaire Objectives:

The objective of this questionnaire is to identify the views and needs of the communities in the Jordan Valley regarding land use development in the area.

Section 1:

Sex: ☐ Female ☐ Male

Occupation: _____

Place of Work: _____

Place of Residency: _____

Governorate: _____

Municipality: _____

Section 2: General

1- What are the main environmental problems facing your area?

2- What types of economic activities (agriculture, industrial, tourism) would you like to see in your area?

3- Is there a recreational centre in your area? ☐ Yes ☐ No

If the answer is no, what is the type of recreational centre that you would like to have?

4- Would you like to have special areas for picnics and children activities? ☐ Yes ☐ No

5- Do you think that the living conditions in your area are:

☐ Comfortable

☐ Uncomfortable

If living conditions are not comfortable, then please specify why?

6- Do you think that people in your area wish to move to other places? ☐ Yes ☐ No

If yes, what are the areas that they wish to move to?

Section 3: Economic Conditions

7- What type of work you do to support your family? (You may choose more than one answer)

1 Cattle raising

2 Agriculture

3 Mechanics / Garage

4 Grocery

5 Clothing Stores

6 Food industry

7 Education

8 Handicrafts

9 Restaurant

10 Hotel

11 Other Tourism

12 Government (including army) Employment

13 Other, please specify: _____

8- If your economic activity is in agriculture, do you:

☐ Own the land

☐ Work at the land

☐ Lease the land

9- If you grow crops that use a lot of water, would you like to replace them with crops that use less water? ☐ Yes ☐ No

10- A. What is the type of work you would like to have?

B. Would you like to work in tourism?

☐ Yes

☐ No

11- What do you think would solve the problem of unemployment in your area?

1 Education

2 Training

3 Having a job in:

☐ Government

☐ Army

☐ Tourism

☐ Private Sector

☐ Other, please specify: _____

4 Immigrate

Section 4: Education

12- Are there elementary schools for girls in your area? ☐ Yes ☐ No

13- Are there elementary schools for boys in your area? ☐ Yes ☐ No

14- Are there secondary schools for girls in your area? ☐ Yes ☐ No

15- Are there secondary schools for boys in your area? ☐ Yes ☐ No

16- Are there high schools in your area? ☐ Yes ☐ No

If yes, are these schools for: ☐ Boys ☐ Girls

17- Are there training centers for the following skills:

• Organic farming ☐ Yes ☐ No

• Handicrafts ☐ Yes ☐ No

• Tourism ☐ Yes ☐ No

• Other, please specify: _____

18- What type of training do you think is required to develop the skills of the residents in your area?

19- Are your children taught water conservation in school? ☐ Yes ☐ No

Section 5: Health

20- Are there enough health clinics in your area? ☐ Yes ☐ No

21- Are there hospitals in your area? ☐ Yes ☐ No

22- Do you have health centers for mothers and children? ☐ Yes ☐ No

23- Are there fire stations in your area? ☐ Yes ☐ No

Section 6: Housing Conditions

- 24- What is the type of your house? (You can choose more than one answer)
- 1 Apartment
 - 2 Tent
 - 3 Separate House
 - 4 Villa
 - 5 Other, please specify: _____
- 25- Is your house:
- 1 Owned
 - 2 Rented
 - 3 In exchange for work
 - 4 Other, please specify: _____
- 26- What do you pay to rent each month? _____(JD)
- 27- Do you have a kitchen in your house? ☐ Yes ☐ No
- 28- What is the total number of rooms in your house? _____
- 29- What is the number of bedrooms in your house? _____
- 30- Do you have enough water? ☐ Yes ☐ No
- 31- What are the sources of water for your house? (You may choose more than one answer)
- 1 Public water supply network
 - 2 Public faucet
 - 3 Tanks
 - 4 Water collection reservoir (rain water collection)
 - 5 Water well
 - 6 Water canal, dam, or pond
 - 7 Spring water
 - 8 Mineral water
 - 9 Other, please specify: _____
- 32- How do you save water?
- Do you reuse water? ☐ Yes ☐ No
 - Do you fix your pipes if there are leaks? ☐ Yes ☐ No
 - Do you close the tap to use less water? ☐ Yes ☐ No
- 33- What is the main source of water for irrigation in your area?
- 1 Irrigation pipes
 - 2 Water collection reservoir (rain water collection)
 - 3 Water well
 - 4 Water canal, dam, or pond
 - 5 Spring water
 - 6 Other, please specify: _____

34- What is the main source of power in your house?

- 1 Public Electricity
- 2 Private Generator
- 3 Gas/Propane
- 4 Kerosene
- 5 Diesel
- 6 Other, please specify: _____

35- What is the main source of energy for the kitchen cooking?

- 1 Gas
- 2 Kerosene
- 3 Electricity
- 4 Wood/coal
- 5 Other, please specify: _____

36- Do you have an indoor toilet in your house? ☐ Yes ☐ No

If the answer is yes, is it connected to:

- 1 Wastewater network
- 2 Septic Tank (collects wastewater and is usually emptied)
- 3 Cesspit (collects the wastewater without being emptied since the wastewater is absorbed)
- 4 Other, please specify: _____

37- How do you dispose of your solid waste?

- 1 Open container
- 2 Closed container
- 3 Burning
- 4 Burying
- 5 Informal dumping
- 6 Solid waste municipality collection
- 7 Other, please specify: _____

38- Does the municipality collect solid waste in your area? ☐ Yes ☐ No

If the answer is yes, how often do they collect it?

- 1 Once a week
- 2 Every two weeks
- 3 Other, please specify: _____

Section 7: Transportation

39- How do you set from one community to another?

- 1 Bus
- 2 Private car
- 3 Taxi
- 4 Commute by walking
- 5 Other, please specify: _____

40- What is the condition of your roads? ☐ Good ☐ Bad

9 INVITATION LETTERS

9.1 Invitation to Focus Group for Zone 3

Dear Sir,

Project: Jordan Valley Preliminary Land Use Planning

Purpose: Focus Groups Sessions

Subject: Invitation for the Focus Groups Sessions

The United States Agency for International Development (USAID) has retained Consolidated Consultants for Engineering and Environment to conduct the study for the Jordan Valley Preliminary Land Use Planning.

As part of this project, the Consultant is conducting three focus group sessions to discuss the land use related issues with the project stakeholders. The session will take place on Thursday March 18th, 2004 at Southern Jordan Valley Directorate Hall, Ghor As-Safi, at 10:30 a.m.

Participants will include representatives from Ministries, government organizations, funding agencies affected parties, agricultural companies, industries and municipalities of the project area.

Consolidated Consultant Engineering and Environment extends its invitation to your agency and appreciates your participation in this focus group session.

Telephone Number: 06-4612377

Fax Number: 06-4612380

Yours Sincerely,

Eng. Khaled Murad

Consolidated Consultant Engineering and Environment

9.2 Invitation to Focus Group for Zone 2

Dear Sir,

Project: Jordan Valley Preliminary Land Use Planning

Purpose: Focus Groups Sessions

Subject: Invitation for the Focus Groups Sessions

The United States Agency for International Development (USAID) has retained Consolidated Consultants for Engineering and Environment to conduct the study for the Jordan Valley Preliminary Land Use Planning.

As part of this project, the Consultant is conducting a focus group session to discuss the land use related issues with the project stakeholders. The session will take place on Saturday March 20th, 2004 at Jordan Valley Guest House at 10:30 a.m.

Participants will include representatives from Ministries, government organizations, funding agencies affected parties, agricultural companies, industries, hotels and municipalities of the project area.

Consolidated Consultant Engineering and Environment extends its invitation to your agency and appreciates your participation in this focus group session.

Telephone Number: 06-4612377

Fax Number: 06-4612380

Yours Sincerely,

Eng. Khaled Murad

Consolidated Consultant Engineering and Environment

9.3 Invitation to Focus Group for Zone 1

Dear Sir,

Project: Jordan Valley Preliminary Land Use Planning

Purpose: Focus Groups Sessions

Subject: Invitation for the Focus Groups Sessions

The United States Agency for International Development (USAID) has retained Consolidated Consultants for Engineering and Environment to conduct the study for the Jordan Valley Preliminary Land Use Planning.

As part of this project, the Consultant is conducting a focus group session to discuss the land use related issues with the project stakeholders. The session will take place on Wednesday March 24th, 2004 at Jordan Valley Guest House at 10:30 a.m.

Participants will include representatives from Ministries, government organizations, funding agencies affected parties, agricultural companies, industries, hotels and municipalities of the project area.

Consolidated Consultant Engineering and Environment extends its invitation to your agency and appreciates your participation in this focus group session.

Telephone Number: 06-4612377

Fax Number: 06-4612380

Yours Sincerely,

Eng. Khaled Murad

Consolidated Consultant Engineering and Environment

ANNEX 6
LIST OF PARTICIPANTS AND CONCLUSIONS AT THE
THREE FOCUS GROUPS SESSIONS

Annex 6: List of Participants and Conclusions at the Three Focus Groups Sessions

10 LIST OF PARTICIPANTS AT THREE FOCUS GROUPS SESSIONS

Table 14: Participants at Zone 3 Gocus Gorup

No.	Participants Name	Instituion	Phone Number	Number of Participating Individuals
1	Yousef Ramadan Khleifat	Al-Dastour Newspaper		1
2	Emad Al-Qarsa	Antiquities of South Jordan Valley		1
3	Darwish Talyouni	Awqaf		1
4	Eng. Sahem Al-Tarawneh	Center for Advancement of Production - ARADA		1
5	Dr. Nasser Al-Masarweh	Center for Advancement of Production - ARADA		1
6	Abed Alsamee Ali Abu-Dieh	Department of Antiquities		1
7	Nawras Al-Majali	Farmer and Head of the Cooperative Organization		1
8	Nayfeh Ali Al-Nawara	Ghor As-Safi Women Organization		1
9	Saleh Al-Ghawwat	Head of Islamic Centre		1
10	Falah Al-Talaleh	Head of Karak Awqaf		1
11	Salman Al-Dugheimat	Jordan Environment Society		1
12	Yehya Khalil Mohammad	Jordan Valley Authority- South Jordan Valley		1
13	Suleiman Al-Marwat	Jordanian Hashemite Fund		1
14	Suleiman Al-Bawaq	Journalist		1
15	Fathi Al-Huwaymel	Journalist and Head of the Local Committee for the Rehabilitation Program and Member of the Ghor Mazra'a Social Development Organization		1
16	Eng. Malek Yasseen Al-Drawsheh	Karak Water Authority		1
17	Eng. Yousef Ahmad Mustafa A'babneh	Ministry of Education- Aqaba Directorate		1
18	Eng. Aktham Mdanat	Ministry of Agriculture		1
19	Mohammad Khaled Al-A'badeh	Ministry of Agriculture		1
20	Dr. Reem Kharouf	Ministry of Education		1
21	Abdullah Sayal Al-Ouneh	Ministry of Interior- Motasarfiat of South Jordan Valley		1

Jordan Valley Preliminary Land Use Master Plan Project

No.	Participants Name	Instituion	Phone Number	Number of Participating Individuals
22	Eng. Samir Jaradat	Ministry of Tourism and Antiquities		1
23	Eng. Marah Al-Khayat	Project Manager at the Ministry of Tourism and Antiquities		1
24	Salem Salim Al-Kutayeb	Qatar - Wadi Araba		1
25	Oudeh SalamehAl-Kutayeb	Qatar - Wadi Araba		1
26	Faraj Hameed Suleiman Al-Kyees	Qatar - Wadi Araba		1
27	Dr. Laith Al-Moghrabi	Royal Society for Conservation of Nature (RSCN)		1
28	Mohammad Yousef	Royal Society for Conservation of Nature (RSCN)		1
29	Eng. Hamad Al-Maska	South Ghor Municipality- Head of Municipality		1
30	Barq Al-Majali	South Ghor Municipality-Member		1
31	Eng. Issam Al-Adayla	South Jordan Valley Education Directorate		1
32	Eng. Jihad Al-Sakarat	Water Authority		1
33	Sandi Chesrown	AMIR Program		1
34	Eng. Khaled Murad	Consolidated Consultant	06-4612377	1
35	Dr. Sawsan Himmo	Consolidated Consultant	06-4612377	1
36	Dr. Adnan Al-Salihi	Consolidated Consultant	06-4612378	1
37	Dr. Raoul Nasr	Consolidated Consultant	06-4612379	1
38	Dr. Fawzi Sahawneh	Consolidated Consultant	06-4612380	1
39	Dr. Munir Rusan	Consolidated Consultant	06-4612381	1
40	Majdi Salameh	Consolidated Consultant	06-4612382	1
41	Mahmoud Hishmeh	Consolidated Consultant	06-4612383	1
42	Lama Awad	Consolidated Consultant	06-4612384	1
43	Majd Tukan	Consolidated Consultant	06-4612385	1
44	Abd Rahman Jaber	Consolidated Consultant	06-4612386	1
45	Rola Quba'a	Consolidated Consultant	06-4612387	1
Total # of Invitees				45

Table 15: Participants at Zone 3 Gocus Gorup

	Participants Name	Instituion	Phone Number	Number of Participating Individuals
1	Eng. Tayseer Ghzawi	Assistant Secretary General - Jordan valley Authority		1
2	Mohammad Abd AlHAdi Wreikat	Awqaf Directorate of Balqa' Governorate	3555751	1
3	Nazeer Mohammad Attiat	Awqaf of Balqa'	3555751	1
4	Eng. Ahmad Al-Abedallat	Deir Alla Educaion Directorate	079-5401914	1
5	Abed AlSamee Abu Dieh	Department of Antiquities	06-3644336	1
6	Hussein Al-Jarah	Department of Antiquities	05-3570412	1
7	Hussni Abu Hashweh	Department of Antiquities	06-3644336	1
8	Eng. Issa Ma'abneh	Jordan River Foundation	077-387627	1
9	Ziad Atallah	Jordan Valley Fish Farm	079-5595396	1
10	A'aesha Ahmad Abu-Syam	Khazma Women Cooperative Organization	05-3572589	1
11	Eng. Ahmad Khalil Abu-Syam	Khazma Women Cooperative Organization	079-5016027	1
12	Samira Mohammad Abu-Syam	Khazma Women Cooperative Organization	079-5016207	1
13	Sara Mohammad Khater	Khazma Women Cooperative Organization	079-5609873	1
14	Dr. Reem Kharouf	Ministry of Education	Home Phone: 06-5676067	1
15	Eng. Khaled Al-Arabi	South Shuneh Educaion Directorate	077-833012	1
16	Eng. Adel Al-Khafajeh	Sweimeh Municipality	05-3560007 02-6453225	1
17	Jajwa Jawdat Sha'sha'a		5310075	1
18	Ramzi Kavar	Project Manager		1
19	Sandi Chesrown	AMIR Program		1
20	Dr. Sawsan Himmo	Consolidated Consultant	06-4612377	1
21	Dr. Adnan Al-Salihi	Consolidated Consultant	06-4612378	1
22	Dr. Raoul Nasr	Consolidated Consultant	06-4612379	1
23	Dr. Fawzi Sahawneh	Consolidated Consultant	06-4612380	1
24	Dr. Munir Rusan	Consolidated Consultant	06-4612381	1
25	Majdi Salameh	Consolidated Consultant	06-4612382	1
26	Mahmoud Hishmeh	Consolidated Consultant	06-4612383	1
27	Lama Awad	Consolidated Consultant	06-4612384	1

Jordan Valley Preliminary Land Use Master Plan Project

	Participants Name	Instituion	Phone Number	Number of Participating Individuals
28	Majd Tukan	Consolidated Consultant	06-4612385	1
29	Abd Rahman Jaber	Consolidated Consultant	06-4612386	1
30	Rola Quba'a	Consolidated Consultant	06-4612387	1
	Total # of Invitees			30

Table 16: Participants at Zone 1 Gocus Gorup

No.	Participants Name	Instituion	Phone Number	Number of Participating Individuals
1	Eng. Amer Al-Safadi	Agricultural Directorate of Jordan Valley	6573050	1
2	Eng. Tayseer Ghzawi	Assistant Secretary General- Jordan Valley Authoirty	05-3570556	1
3	Eng. Munther Al-Bekheet	Deir Alla Municipality- Head of Municipality	079-5280609	1
4	Hani Al-Hassan	Deir Alla Municipality-Member	079-5303447	1
5	Dr. Salem Amarat	Deir Alla Municipality	3573029	1
6	Hadby Al-Huarrat	Farmer	077-406670	1
7	Ali Al-Faqeer	Farmer	6575425	1
8	Abdullah Al-Wa'ae	Farmer		1
9	Dr. Atta Ayoub	Jordan Environment Society- Deir Alla	079-6205138	1
10	Eng. Anas A'amaira	Jordan River Foundation	079-57143080	1
11	Nisreen Araj	Jordan Valley Authoirty	079-5610069	1
12	Eng. Ahmed Saeed	Jordan Valley Authoirty	079-5991187	1
13	Saleem Sobeh Bshara	Jordanian Himmeh	079-5190325	1
14	Hatem Mohammad Mari	Jordanian Himmeh - Noor ElHussein Foundation	077-346711	1
15	Ahmad Al-Salihi	Jordanian Mineral Himmeh Company (A Subsidiary of Zara Investment Group)	06-4651228	1
16	Adel Khalil Abu Siam	Khazma Member of Deir Alla Municipality	079-5583902	1
17	Ahmad Saleh Al-Dabbas	Kreimeh Municipality	077-411670 02-6575095	1
18	Dr. Reem Kharouf	Ministry of Education	06-5676067	1
19	Eng. Faysal Kaseer	Ministry of Education	6587658	1
20	Lubna A'meira	Ministry of Public Works and Housing	06-5850470	1
21	Dana Al-Bekheet	Ministry of Public Works and Housing	06-5850471	1
22	Amin Ibrahim Abdallah	Mokeiba Tahta	079-5283371	1
23	A'ahed Mursal	Mu'adi Municipality-Member	077-416725	1
24	Eng. Mohammad Al-O'boud	New Deir Alla Municipality	3573029	1
25	Eng. Yousef Al-Sakran	New Deir Alla Municipality	079-6556444	1
26	Ali Abd AlHafez	New Mu'adi Municipality	077-334569	1
27	Ali Ahmad Okla	New Mu'adi Municipality	3571834	1
28	Eng. AbdKareem Abu Zeina	New Mu'adi Municipality- Head of Municipality	079-5938751	1
29	Mohammad Saed Al-A'abedy	North Jordan Valley Awqaf- Head of Municipality	6587304	1

No.	Participants Name	Instituion	Phone Number	Number of Participating Individuals
30	Mousa Ahmad Al-Denyar	North Shuneh Municipality-Member	6578188	1
31	Eng. Khaled A'nab	Sharhabeil Bin Hasnah Municipality	079-5540221	1
32	Mansab Mohammad Al-Kuwaisem	Tabqat Fahel Municipality	02-6560486	1
33	Khaled Abu Attaih	Tabqat Fahel Municipality	079-5118059	1
34	Mohammad Suleiman Khashan	Tabqat Fahel Municipality	079-5561362	1
35	Mohammad Falayeh Talaqa	Tabqat Fahel Municipality	6550366	1
36	Eng. Jamal	Water Authority	077-429890	1
37	Eng. Ghazi Abdo Ahmad	Water Authority- Head of Water Treatment Department	077-481300	1
38	Ali Fahed		077-762071	1
39	Sandi Chesrown	AMIR Program		1
40	Eng. Khaled Murad	Consolidated Consultant	06-4612377	1
41	Dr. Sawsan Himmo	Consolidated Consultant	06-4612377	1
42	Dr. Adnan Al-Salihi	Consolidated Consultant	06-4612378	1
43	Dr. Raoul Nasr	Consolidated Consultant	06-4612379	1
44	Dr. Fawzi Sahawneh	Consolidated Consultant	06-4612380	1
45	Dr. Munir Rusan	Consolidated Consultant	06-4612381	1
46	Majdi Salameh	Consolidated Consultant	06-4612382	1
47	Mahmoud Hishmeh	Consolidated Consultant	06-4612383	1
48	Ruba Khoury	Consolidated Consultant	06-4612384	1
49	Noura Qudah	Consolidated Consultant	06-4612385	1
50	Luba Hamdi	Consolidated Consultant	06-4612386	1
51	Rola Quba'a	Consolidated Consultant	06-4612387	1
Total # of Invitees				51

11 FOCUS GROUP 1

11.1 Social Aspects-Southern Zone Focus Group

Representatives were invited in Zone 3 of the project from the Southern Ghors and Wadi Araba.

11.1.1 Group Members

The names of the members of the environment and tourism focus group are shown in **Table 3:**.

Table 17: The members of the environment and tourism focus group

No.	Name	Institution
1.	Abdullah Al-Oneh	Ministry of Interior/Al-Safi
2.	Suleiman Al-Muradat	Jordan Hashemite Fund
3.	Naifeh Al-Nawasrah	Women of Ghor Al-Safi Cooperation
4.	Eng. Youssef Moustafa	Ministry of Education/Al-Aqaba
5.	Emad Al-Atrous	Department of Antiquities-Southern Ghors
6.	Khamis Al-Bawat	Southern Ghors
7.	Faraj Al-Kabash	Qatar/Wadi Araba
8.	Yehya Al-Qaisy	Jordan Valley Authority
9.	Mahmoud Hishmeh	Consolidated Consultants-Focus Group Facilitator
10.	Dr. Fouzi Sahawneh	Consolidated Consultants- Focus Group Facilitator
11.	Majd Toukan	Consolidated Consultants

11.1.2 Discussions within Tourism and Environment Focus Group

The following issues were discussed within the social focus group:

Schools:

- Teachers live far away from schools and so there is no stability and settlement.
- Students live far from schools, which makes them tired and decreases their productivity.
- Teachers with experience want to move to more civilized places, which means changing the teacher more than once per year for students.
- There is a shortage of teachers due to their movement to another location during the school year.
- Uncomfortable environment for teachers to work in undeveloped or rural areas, or unequipped areas.
- Schools are big but the resources and budget are not enough.
- There is no periodic maintenance for schools and its equipments.
- Dr. Reem from the Ministry of Education: there is department for maintenance of school equipments such as computers. In addition, the Ministry of Education has established directorates in Irbid and Amman and is currently studying establishing directorates in the South.
- There are around 50 students in each classroom, which is a high number and causes classrooms to be very crowded.
- The problem of student's dropouts from schools. For example, the number of students in the elementary section is 80 and turns to 15 at the end of the secondary classes. This is mainly because students are not comfortable in schools, teachers' qualifications, school building and the lack of job opportunities for all specialities.

- There is a big load on teachers in terms of the number of classes that has to be taught.
- In general, teachers' qualifications are bachelor's degree.
- A study in the region indicates that the current birth rate requires the opening of a new school each year.
- The school in Qatar is equipped with a computer room, however, there is no computer teacher and thus they can't make use of it.
- Busses pick up teachers, however, if any teacher was late for any reason it will cause the others to be late too and sometimes not able to reach their schools.
- The long distance of schools limits the possibility of females joining schools.
- The limited resources reduce the possibility of qualified students joining the specialities they want.
- There is no higher education offered in this region.

Suggestions:

- Allow acceptances with less than the standard requirements for students in different domains since they have special conditions.
- Provide educational scholarships for local people.
- Hire local people for jobs in the area.
- Establish vocational schools: there are some vocational schools for males but not for females. This has been suggested since 4 years and a 25 dunums land has been allocated now for it but waiting the Ministry of Education action.
- Establishment of agricultural schools since they live in agricultural areas.
- Establishment of higher education colleges or universities.

Health Issues:

- There is a lack of specialized doctors and doctors in general in relation to the number of local residents.
- Hospitals are far from residential areas.
- Insufficient number of hospitals compared to the present population.
- The ratio of locals who are not capable of getting treatment and buying medicine reaches 80%.
- There is no medical insurance in the Southern Ghors except for the areas between Qatar and Kreikra.
- Rodents and rats create a big threat on the area and causes health problems such as Bilharzias. Dirt and untreated wastewater are the major cause of these rodents.
- Septic tanks flood and pollute the agricultural lands and streets.
- Some people are not ready to pay for the installation of sewer connections.

Job opportunities and sources of income:

- 65-70% of the people work in agriculture from the Ghor area.
- Economic return from agriculture is low for families.
- 52% of the lands are allocated for local people in the area and the rest are for residents of Amman and other areas.

Housing:

- Fifa is a very bad residential area and is filled with plastic houses.
- The ratio of people who rent houses is very low; people either live in their owned houses or in plastic tents or houses.
- Some own lands but are not able to build a house on it.

- Most areas have mother and child care centers and family planning centers.
- Roads are acceptable, however, the area of Al-Naqa'a and Al-Safi need a bridge to connect them because they are separated by a Wadi.

11.2 Water and Agriculture – Southern Zone Focus Group

Representatives were invited in zone 3 of the project from Southern Ghors and Wadi Araba.

11.2.1 Group Members

The names of the members of the tourism and environment Focus Group are shown in Table 18.

Table 18: The members of the water resources focus group

No.	Name	Institution
1.	Oudeh SalamehAl-Kutayeb	Qatar - Wadi Araba
2.	Saleh Al-Ghawwat	Head of Islamic Center
3.	Eng. Issam Al-Adayla	South Jordan Valley Education Directorate
4.	Salem Salim Al-Kutayeb	Qatar - Wadi Araba
5.	Eng. Aktham Mdanat	Ministry of Agriculture
6.	Eng. Sahem Al-Tarawneh	Center for Advancement of Production - ARADA
7.	Barq Al-Majali	South Ghor Municipality-Member
8.	Nawras Al-Majali	Farmer and Head of the Cooperative Organization
9.	Barq Al-Majali	South Ghor Municipality-Member
10.	Eng. Jihad Al-Sakarat	Water Authority

11.2.2 Discussions within Focus Group

The following are the subjects laid for discussion:

- Surface water quality differs seasonally.
- Most of the irrigation water is surface water and valley water and some spring water (renewable according to the rain season) and some limited ground water.
- The quality of the soil affects the use of water for example in agriculture; the use of clay soil prevents the absorption of water and the use of sandy soil absorbs a lot of water.
- The mineral water from Afra and Al-Barbeta runs into the valleys such as Wadi Afra and contains Sulfur, low in oxygen and radioactive, this water is mixed with other spring water sources.
- There are some water treatment plants in Tafileh and Karak and which reaches the area.
- The JVA has installed filters on agricultural wells.
- Wells were not saline at first but they became so because of agriculture.
- There is mixing of salty and unsalted water to improve the quality of irrigation water.
- There are four phases for irrigation, the first 3 phases of the plant growth, low quality water is used, however, at the fruit growth stage good quality water is used.
- In Ghor, seasons often overlap with each other and so it is difficult to control the use of water.
- In Qatar, water is not suitable for drinking and so a treatment plant has been installed.
- Currently water from the Reverse Osmosis plant is mixed with well water for drinking water purposes and the project was very successful.
- There is a big loss of water, in agriculture a loss of 60% and drinking water 50%.

- According to a farmer from Qatar, lands can only be used for agriculture.
- Where lands are suitable for agriculture, it should be farmed and in areas where lands cannot be farmed, industries can be built such as quarries, marble factories, touristic lands and sports lands.
- Agricultural engineers and agricultural companies decide on the use of fertilizers.
- Industries have consumed a large amount of water and this affected the various resources.
- The absence of a sewer network affects the quality of water.
- Suggest the use of impotable water in other areas such as industries.
- The development of agricultural lands is what is important because residential areas are already developed.
- Research centers are needed.
- Farmers prefer the use of natural rather than chemical fertilizers.
- There is no market, cold storage facility, and plant nurseries.
- A factory for plastic recycling was suggested but then it was turned into plastic making and not recycling.
- In previous projects, there was a suggestion to use the solid waste coming out of a wastewater treatment plant as a fertilizer, however, people do not accept this option.
- In the south there is no use of technology such as the email even in governmental departments.
- There should be awareness sessions for all parts of the society such as birth control that needs mother and child centers, and agricultural technology and others.
- There have been several articles in the newspapers about the quality of the King Talal Dam water and this lead to many countries such as Gulf countries banning export or reducing it from Jordan.
- The misuse of pesticides and chemicals has lead to pollution such as disinfection gases. Farmers need to be aware that they should not use that large amount of chemicals.
- Pipelines from dams get to agricultural lands such that the pipeline coming from Mujib area gets to Fifa and Wadi Al-Safi.
- By constructing dams we can improve the quality and quantity of water.
- Should improve agricultural tools.
- Rehabilitate the networks.
- Chose the suitable crops.
- There is no other option for the current agricultural lands to change its cropping pattern.
- A study on the birth rate in the area shows that extra schools are needed.
- The general qualifications of teachers are bachelor degree.
- There are electricity problems in the area of Safi.
- Archaeological sites need improvement and provision with facilities.

11.3 Environment and Tourism

11.3.1 Group Members

The names of the members of the environment and tourism focus group are shown in **Table 19**.

Table 19: The members of the environment and tourism focus group

No.	Name	Institution
1.	Najwa Shaashaa	Farmer
2.	Sara Khater	Khazma Women Cooperation
3.	Eng. Adel Al-Khatatbeh	Municipality Head of Suweimeh
4.	Eng. Khaled Al-Arabi	Ministry of Education
5.	Mohammad Al-Wreikat	Awqaf of Balqa
6.	Hasanein Al-Jarah	Department of Antiquities-Middle Shouneh
7.	Majdi Salameh	Consolidated Consultants- Focus Group Facilitator
8.	Rola Quba'a	Consolidated Consultants
9.	Lama El-Awad	Consolidated Consultants

11.3.2 Discussions within Tourism and Environment Focus Group

The following issues were discussed within the environment and tourism focus group:

Archaeological sites and Tourism at the South Jordan Valley:

- Dead Sea basin includes several touristic/significant locations other than the seashores. The Dead Sea is one of the four pillars of tourism in Jordan.
- The Ghor As-Safi is a route from Amman to Aqaba. The Ministry of Tourism and Antiquities is building at Ghor As-Safi a museum for Lut and next year there will be attraction points for one day touristic visit. The easy access and comfort along the road will encourage tourists to come to Ghor As-Safi and consequently improve the economy of Ghor As-Safi.
- The problem is that there are no proper media campaigns that inform the people and tourist about the available archaeological and touristic sites. Also, most of touristic places are archaeological sites that lack touristic services that may encourage the tourist to visit it or spend sometime at the site. Therefore, archaeological sites need to be developed into touristic sites that have the required basic services to attract tourists.
- It was commented that touristic sites are related to availability of water and that the availability of services is the factor that determines carrying capacity.
- The Ministry of Tourism and Antiquities is not planning for “sleep over” projects in the area. The objective of its development projects is to make touristic services available for attracting tourists to the area and opening new job opportunities to the people of the area.
- It was asked whether the participants perceive having many new hotels along the Dead Sea shore as appropriate and suitable with the carrying capacity of the Dead Sea. The response was that the carrying capacity is related to availability of services and if services were available then the carrying capacity would be increased. However, from an environmental perspective, such services should not increase to a level that impacts the environment.
- The Consultant is currently working on photographing important archaeological sites in the Jordan Valley and recording their coordinates for putting the sites on GIS maps.
- It was suggested to visit Mr. Abd Sameea Abu Deyeh from the Department of Antiquities in order to document available archaeological sites in the area and discuss the means to protect those sites. However, it was mentioned that it is difficult to protect those sites since the issue of illegal archaeological diggings are related to

unemployment where some locals dig for artefacts in order to sell them and generate an income. So, unemployment is the real motive for digging for artefacts.

- It was mentioned that in the southern Ghor there are more than 50 sites (such as Tel El-Sukar). However, the Department of Antiquities did not develop these sites. Developing those sites would provide job opportunities to the local people and at the same time encourage tourism.
- At present, there is expansion in built up areas towards Cave of Lut site and this is constituting a threat to the Cave. There are lands near the Cave that will be built soon.
- In south Ghor there are also areas that are for the Ministry of Religious Affairs (Awqaf). The Ministry of Tourism has requested to work on those areas. However, the Ministry of Tourism is concerned that the Awqaf would in the future decide to invest those lands. Therefore, the Ministry of Tourism believes that land use planning is an opportunity for determining buffer zones.
- The Department of Antiquities (DoA) recommended to put the lands of archaeological sites under its responsibility and provide them with an appropriate buffer zone.
- There are several significant archaeological sites within the southern Jordan Valley and the Consultant requested that the DoA provide him with a list of those sites with columns indicating their significance and a column indicating recommendations regarding developing those sites. The Consultant also asked about the issue of having archaeological reserves and the role of natural reserves in preserving archaeological sites. However, those were questions to be answered in a meeting to be held with Mr Abd Al-Sameea Abu Deieh.
- The role of the Ministry of Tourism and Antiquities is to look after the archaeological sites. The only project taken by the Ministry at present is the Museum near the Cave of Lut. There is also a project for the development of the Tawheen Al-Sukar (Sugar Mills) site but it is not sure whether work on this project have started.
- Finan and Fidan areas are very important and natural reserves in the area have played a major role in protecting those archaeological sites.
- The Ministry of Tourism is also working on developing a road between Madaba and Mujib so that it provide access to tourism buses and cars to use a road linking both areas. The Jordan Rive Foundation is working on finding a fund to pay for this project.
- The DoA representative mentioned that given the great number of archaeological sites with Jordan Valley, it is impossible for this land use project to survey them within the very limited time of three months.
- The Ministry of Tourism and Antiquities mentioned that in Southern Jordan Valley complete infrastructure services have been implemented in areas that do not have any communities available or developing within them. So, it was questioned whether we are investing our resources in the most appropriate way.

Red-Dead Sea Canal and Availability of Water for Tourism Development:

- The Ministry of Tourism and Antiquities were asked whether they perceive that there is a relation between touristic projects and water availability. The Ministry does not have nay studies regarding this issue however, they do know that at Johannesburg there was a strong call for advocating the project and in general there is a strong relation between water and tourism.
- The Red-Dead Sea Canal was discussed in the perspective that it is a huge project whose cost may reach 3 billion JD and that its impact on southern Jordan Valley will be immense in terms of increasing availability of water and providing more job opportunities to the local people. Anyway, the Red-Dead Sea Canal would require a buffer zone of at least 200 m.
- It was discussed that the pillars of tourism include archaeological sites, recreational areas and natural scenes.

- It was mentioned that a mud factory project at the southern shore of the Dead Sea was stopped due to sinkholes.

Water Conservation:

- It was mentioned that there should be a differentiation between water used for drinking purposes and that used for irrigation. For example, in order to cultivate bananas, many framers rent several farm units in order to get a water share that can irrigate the banana farm unit. Therefore, there needs to be a greater control on this aspect. In addition, there is the problem of many illegal water wells.
- Most framers use drip irrigation but they still need media awareness that is built on scientific basis. Such an awareness campaign should inform the farmer that for instance he cultivated that kind of crop, it will generate for him that level of income or profit. The framer should be given several choices and asked to choose from them without forcing a certain kind of crop on him.
- It was also emphasize that if the farmer is not presented with practical and affordable solutions, he will not cooperate.
- People in the Ghor use the minimum level of water that needs to be consumed by an individual. Therefore, water conservation should look more at the tourism, industrial and agricultural sectors.
- Ministry of Water and Irrigation is working on securing water for Suweimah area. However, there is the problem of drawdown due to pumping by the Arab Potash and the Magnesia Companies. It was also mentioned that there is a water desalination project at Ghor As-Safi.
- Most five star hotels in the Dead Sea area have water softening mechanisms. However, it should be mentioned that the water delivered by the Water Authority is according to standards.
- According to the Karak Water Authority, there are three main industrial water users within its area. These are the Arab Potash, Magnesia and Bromine. Those three companies have their own water wells. Therefore, they requested that the study concentrates on water basins in the area.
- Dams is one type of land use. Therefore, the Water Authority should determine the location of dams and wells and determine the approach to protecting them. Therefore, the Water Authority requested to take this into consideration during this study.

Important Environmental Locations and Biological Diversity:

- The RSCN described the project of integrated ecosystem management that it is preparing for the Jordan Valley. The emphasized the importance of the Jordan Rift Valley as part of the African Rift along which birds migrate between the African Continent and Europe. There are several important bird areas in the Jordan Valley. The integrated ecosystem management project will work with local people in order to reach the best approach for managing the water resources and on environmental friendly agricultural activities.
- There are eight important bird areas. These are Yarmouk River, North Jordan, Sweimeh, Mujib reserve, Ghor Fifa, Wadi Araba, Dana, Qatar, and Aqaba.
- Wadi Araba is considered to be a natural habitat for many plants and animals.
- There are suggested reserves at Fifa and Qatar that will be developed in agreement with Ministry of Agriculture.

12 FOCUS GROUP 2

12.1 Social Aspects – Middle Zone Focus Group

Representatives were invited in zone 2 of the project from Suweimeh municipality and the industries and hotels present in the Jordan Valley.

12.1.1 Group Members

The names of the members of the tourism and environment Focus Group are shown in Table 20.

Table 20: The members of the water and agriculture focus group

No.	Name	Institution
1.	Najwa Jawdat Sha'sha'a	Farmer
2.	Sara Muhammad Khater	Khazma Women cooperation
3.	Eng. Adel Khatatbeh	Municipality head of Suweimeh
4.	Eng. Khaled Arabiat	Ministry of Education – Buildings Department
5.	Muhammad Al-Wreikat	Awqaf of Balqa
6.	Hasanein Al-Jarrah	Department of Antiquities of middle ghor
7.	Dr. Fouzi Sahawneh	Consolidated Consultants
8.	Mahmoud Hishmeh	Consolidated Consultants
9.	Majd Toukan	Consolidated Consultants

12.1.2 Discussions within Focus Group

The following are the subjects laid for discussion:

Education:

- Increase vocational training centres in the area. The present available centres are not enough.
- Other centres in Ghor do not have any students and some centres are very big but are not utilized.
- The problem of poverty in the area limits the chances for education.
- Students lack the incentives to work because of the very limited work opportunities in all sectors and some are ashamed to work in the available jobs.
- There is an enormous increase in population because of the lack in awareness in this domain.
- There is no sense of belonging to the area among the new generation because of the lack of incentives, employment opportunities and salaries.
- Salaries are not enough so people prefer not to work.
- Suweimah: is touristic, people need computer courses and touristic education and establishment of industries that serves tourism in these areas.
- Middle Ghor: suggest the establishment of a faculty of agriculture in the area since it is an agricultural area and so no need to go to other far areas.
- Farmers do not own the lands they work in, which reduces their motivation since they cannot directly benefit from it. This also implies that the region is not benefiting from its own resources.
- Educational tools do not provide practical training for the students and thus does not prepare them to the real life.

- The number of schools is enough and the teachers are university graduates, however, there are very few students in each class since most of them do not find jobs after graduation and so they prefer to go directly into agriculture or sit at home.
- Is there teacher settlement? There are different points of views concerning this topic. The insufficiency is a result of lack of recreational places and work opportunities. The distances are not far but teachers prefer to leave to other places. Transportation should be provided and even dormitories to the teachers so that they have the incentive to at least stay the whole year and not leave the students in the middle of the year. Currently there is a teacher's dormitory but it is not used. This needs to at least be considered for fresh graduates, as a way of gaining experience.
- Lands are cheap and so it is easy to get bids to build schools.
- There are equal opportunities for both males and females.
- People are turning to vocational education since 1970 because of their low averages.

Health:

- Health: health centers are enough in Deir Alla and there is one hospital for the whole community of 60000 people. Other areas have a deficiency in specialized medical services such as the lack of an orthopaedic or a paediatrician.
- Suggestion of transforming the primary health care centers to specialized and comprehensive ones especially in the area of Deir Alla.
- Lack in the nursing staff.
- People suffer from pests from hotel wastes and drainage canals and dogs. Currently they used pesticides starting from South Shouneh till North Shouneh for one whole month to reduce their effects.
- There are pests that affect the people in the area and the tourists.
- Most people are medically insured either through the army, or through the policies of the companies they are employed in. Employees have the benefit of insuring their parents.
- Health insurance is very low in Khazmah.

Employment Opportunities:

- Foreign employment is very high in the region; the attendance said it is between 70-90%.
- Males refuse to work in agriculture and thus 80% of the women work in agriculture such as farming, collection of crops, filling and packaging. So women are the primary source of income at their houses.
- The owners of lands in the Jordan Valley are mostly from outside the valley.
- Employees of the JVA and the government have a large proportion of the good and productive lands.

Agriculture:

- Farmers find it more cost effective to plant vegetables instead of fruits, which are seasonal.
- They need industries for packaging of agricultural products, there is excess of vegetables but not of fruits.
- There is a problem in marketing for crafts such as sewing, ceramics, and flowers.
- Palms consume less water than bananas.
- There is a research centre in the Jordan Valley Agriculture department that studies the better crops to be used in agriculture but it is not effective.
- Water is too expensive.

Housing:

- Housing: the Jordan Valley Authority allocated 224m² of land for each family, however, they are only allowed to build on 60-80m² of that area, and since the sons live with their families when they get married this area becomes insufficient and crowded. There is a lack in planning these lands. Sometimes the owners tends to sell their lands to people who don't live in the Jordan valley, which means lack of control over the land and lack of incentive to those who end up working in that land (its not their own land).
- Some land in the South Shouneh and Suweimeh are not good for agriculture and so it is fine to build on them. However, other lands in middle Ghors such as Kreimeh, Deir Alla and Mashare are perfect for agriculture.
- There are no buildings at the west road connecting the south and north of the JV since it is an agricultural area. So urbanization is at the east part of the road since the lands are less fertile there.

Roads and transportation:

- The main road is only one way.
- The main road should be a highway instead of an ordinary road with 2 ways since it connects the north of Jordan with its south.

Others:

- The Jordan Valley Authority and the population groups do not work together because the groups are now under the municipalities and so they lost contact with the Authority.
- There is no enough awareness on the importance of family planning. Even if the wife has heard about family planning and she agrees with it she has no say in that subject.
- Have touristic areas in Suweimeh.
- There are 280 archaeological sites most are inside hills between 10-200dunums.

12.1.3 Conclusions of the Focus Group

- Make use of the vocational training centres in the area.
- Make the agricultural guidance program more effective.
- Finding employment opportunities in more fields to give students the incentives for further education.
- Provide bigger parcels of land to the people in the JV.
- Allow the local people to become owners of their lands.
- Plan the main road as a highway.
- Provide more recreational areas such as public parks, playgrounds, and educational touristic centers.
- Implement training workshops on marketing.
- Establish food industries.
- Handicrafts.
- A comprehensive and specialized health care centre.

12.2 Water and Agriculture – Middle Zone Focus Group

Representatives were invited in zone 2 of the project from Suweimeh municipality and the industries and hotels present in the Jordan Valley.

12.2.1 Group Members

The names of the members of the tourism and environment Focus Group are shown in Table 21.

Table 21: The members of the water resources focus group

No.	Name	Institution
1.	Eng. Ahmad Khalil Abu-Siam	Khazma Women cooperation
2.	Samira Muhammad Alayan	Khazma Women cooperation
3.	Dr. Reem Kharouf	Ministry of Education
4.	Eng. Ahmad Al-Abedallat	Deir Alla
5.	Abed Alsamee Ali Abu-Dieh	Department of Antiquities
6.	Dr. Adnan Al-Salihi	Consolidated Consultants
7.	Dr. Munir Al-Rusan	Consolidated Consultants
8.	Abedel Rahman Jaber	Consolidated Consultants

12.2.2 Discussions within Focus Group

The main issues that were discussed in this focus group are the agricultural sector and the water sources and distribution.

The following are the subjects laid for discussion:

Water sources (quality and quantity) and its effect on land use:

- Water sources are scarce and differ in quality where there is irrigation water, wastewater, irrigation water, and mixed water.
- Water sources are 1. King Abdullah Canal 2. King Talal Dam 3. Al-Karameh Dam 4. Al-Kafrain Dam 5. Wadi Shuaib Dam 6. Reused water for irrigation. Water from Zara and Zarqa Main is desalinated for drinking.
- Should use low water demanding crops.
- Should use salt resistant crops should be used.
- Sometimes bad quality water is used in irrigation.
- Should use new techniques in irrigation and fertilizers through irrigation waters.

Water distribution:

- Irrigation and domestic water distribution. After the rehabilitation of the Al-Karameh Dam water, it will be used to irrigate the 14.5 land. As for the areas of Hisban and Al-Kafrain, they are irrigated from the Hisban and Al-Kafrain Dams.
- In the area, potable water is from wells.

Cropping patterns:

- There is a variety in the cropping pattern were bananas, citrus, grapes and vegetables are grown. Suggest a change in the cropping pattern for example from bananas to less water consuming crops.
- Find less water demanding crops.
- Introduce new crops such as scented plants that are of high marketing values.
- Encourage and educate the farmer and the consumer to use new suggested cropping patterns.
- Reduce the area planted in the summer.

Water needs

Soil salinity

Irrigation water salinity

- Use salt resistant crops.
- Wash and rehabilitate the soil and make use of the rainy seasons.
- Make the agricultural guidance programs provided by the Ministry of Agriculture more effective.

Soil physical characteristics and ground water level

Income of the farmer

- Cost of crops; make the role of agricultural cooperatives more effective.
- Marketing costs.
- Establish marketing centers.
- Cost of irrigation water.
- The marketing value of the agricultural product.

Other issues discussed:

- Proper management of farms.
- Suggest alternative agricultural projects such as animal productions, food productions, and medicinal plants.
- The use of fertilizers and pesticides in agriculture.
- In zor ground water is very close to the surface and therefore fertilizers cannot be used so that it is not polluted.
- Will agriculture stay the same or will there be other alternatives such as industries or other land uses.
- Establish a wastewater network and water treatment plants.
- Take environmental factors into consideration.
- The role of rural women.
- The Khazma Women Cooperation has a dairy plant and they are studying the implementation of a medicinal plant project and a bee farm.
- There is a suggestion to decrease the unit of agricultural land so that it can be used in more simple ways.
- Encourage the work of NGOs.
- Encourage NGOs to allocate lands for its use.
- Suggestion to implement agricultural projects such as animal production and medicinal plants.
- The attitude of people if potable water was used for drinking and only treated water used for irrigation.
- Discuss the use of grey water and its uses.
- The per capita water quantity should not be discussed but the recycling and reuse of water sources.
- The Jordan Valley has drained the salty water and declared that it is useful for irrigation.
- Jordan River water can be treated and used in irrigation.
- Water from King Talal Dam is highly saline and needs mixing. However, the operation should not be called mixing, as the quantity of water mixed is very little.

- Establishment of farms for imported crops such as canned food.

12.2.3 Conclusions of the Focus Group

The following points and issues were mainly arrived at during the focus group discussions:

- Implement agricultural projects such as animal production and medicinal plants.
- Construction of treatment plants.
- Change the cropping pattern to less water consuming crops.
- Introduction of new crops.
- Make the agricultural guidance programs provided by the Ministry of Agriculture more effective.
- Establishment of farms for imported crops.
- Establishment of marketing centers.

12.3 Tourism and Environment – Middle Zone Focus Group

Representatives were invited in zone 2 of the project from Suweimeh municipality and the industries and hotels present in the Jordan Valley.

12.3.1 Group Members

The names of the members of the tourism and environment Focus Group are shown in Table 22.

Table 22: The members of the tourism and environment focus group

No.	Name	Institution
1.	Ramzi Kawar	Project Manager
2.	Ayshah Ahmad Abu-Siam	Khazma Women Organization
3.	Husni Abu-Shweimah	Department of Antiquities
4.	Munther Mohammad Atiyat	Awqaf Al-Balqa
5.	Eng. Issa Al-Maaita	Jordan River Foundation
6.	Ziad Atallah	Jordan Valley Fish Farm
7.	Dr. Raul Nasr	Consolidated Consultants
8.	Majdi Salameh	Consolidated Consultants
9.	Eng. Teiseer Al-Ghazawi	Jordan Valley Authority
10.	Lama El-Awad	Consolidated Consultants

12.3.2 Discussions within Focus Group

At the beginning of the meeting, participants were introduced to each other along with their occupations and concerns related to the project.

The following are the subjects laid for discussion:

Fish farm:

- They have 600-tons/year productions and the water salinity in which they farm Taloubi Fish is between 5.5-6. The farm has a closed system because of the small amount of water. If an open system is used then migratory birds will consume the fish.

- If the water coming into the fish farm is polluted then the fish will also be polluted and not suitable for consumption.
- Water in the Jordan Valley is saline and has an appropriate temperature for fish farming.
- Water coming out of the fish farm is rich in nitrogen and can be used in fodder and agriculture production.
- Some fish farms use the wastes of chicken without treatment to feed the fish and this causes a big problem in terms of polluting the fish and affects its export.

Jordan River Foundation:

- There is a comprehensive development project to be implemented by the Jordan River Foundation in Khazma and funded by the Ministry of Planning.
- A Wadi in the village needs to be fenced to protect the children of the village.
- A dairy plant is already present but the rent of the land is very expensive. The Khazma organization is trying with the help of the JRF to find a land where the plant can be located and where some cows can be raised.
- People need environmental and agricultural awareness.
- There is a need for a public space or park for children.
- There is a need for rehabilitation of the infrastructure.

Awqaf:

- There is no proof of property in the lands where mosques are located and the rest are allocations. There is a request that each municipality has its own cemetery. In addition there is no study on the ratio between mosques to people.
- Religious tourism is very important and there is a record of the number of visitors coming to Abu-Obeidah Sanctuary, which is supervised by the Royal Committee for the development of the companion's Sanctuary.
- Currently, there is a study in Dames Abu-Alhol to do a sanctuary.
- A residential area can be allocated for the implementation of Al-Zaka.

Cultural reserves and heritage management

- Poverty and unemployment lead to the abuse of archaeological sites.
- There is no awareness concerning the value of archaeological sites.
- Urbanization and infrastructure affect to a great extent archaeological sites.
- There are not enough resources to look for archaeological sites.
- Currently the government is in the process of modifying the archaeological law to protect archaeological sites. The law constitutes having a buffer zone of 5-25 meters away from the sites.
- There are heavy industries and quarries in the area; these should not be located less than 1 km away from the archaeological sites.
- There is a problem of illegal selling of archaeological goods.

Women of Khazma organization:

- They have a dairy plant and had some complaints and suggestions for it.
- Low-dense milk problem
- Suggestion of using grey water emerging from the dairy plant in the irrigation of a medical plants land.
- There are landslides in the valley in Khazma, which are dangerous especially for children, and so it should be fenced.

- There are garbage containers but the people still throw their wastes on the streets until the area became a waste dump.
- There is a request for a public area or garden for children to play.
- There are no trees to provide shade for the people.
- The road network is not bad.
- Public transportation is not efficient.

Jordan Valley Authority:

- The valley in Khazma has retaining walls and footpaths and suggests visiting the site with the people who are complaining.
- The best thing is to have an awareness campaign.
- There are no centers for the disabled in the area of Deir Alla but it seems that there is a plan in the Karn area to establish a centre for both disabled and the elderly.

Project Manager

- There is a problem of foreign employment and unemployment. Jordanians refuse to work as farmers because they prefer to work as employees, thus there should be awareness conducted in order to change the way people perceive good jobs and to accept handiwork. However, Jordan River Foundation thinks that if the Jordanian is given the appropriate salary he is willing to work.
- Employees in the Fish farm are Jordanian, however, they are hard to deal with since they do not like to work.
- In the farm of Zeid Al-Rifaii there are many active Jordanian women employees but men do not want to work and prefer that their wives work instead of them.
- The Jordan Valley Authority has given farmers pieces of land 12*24 m² but the problem is that children get married and live with their families and so the areas of lands are becoming too crowded. In addition, men are not finding any motivation to work because of the low returns and thus they send their wives to work or migrate to other countries.
- In addition the subject of natural reserves and the environment was also discussed.
- The Jordan Valley is an important migratory bird area and other living organisms.
- There is the Acacia tree and Arak, which is used to make the old tooth brushes (Miswak).
- There are medicinal plants in the area that should be protected and produced.
- There is aggressive urbanization towards natural lands.

Over grazing:

- There is over grazing that is affecting the important plant species. The fact that herders were prevented from using green areas brought individual grazing to an end. There is a change in the kind of agriculture from wheat into fruit trees which also decreased the effect of over grazing.

Illegal woodcutting:

- It has decreased first because of the change in the way of life where technology prevails and second because of the law preventing haphazard woodcutting.
- There is no specific place to be allocated as a protected area.

Sources of pollution:

- Fertilizers, inappropriate use of pesticides, uncovered or exposed wastewater, stagnant irrigation ponds in agricultural lands.

- The issue of using the remnants of crops and plants as fodder for animals while they are still filled with pesticides and so the animals are getting sick.
- Problem of the tomato paste industry that there is excess production that is more the capacity of the plant.

Quality of water:

- The water contains residues and thus people use filters.

12.3.3 Conclusions of the Focus Group

The following points and issues were mainly arrived at during the focus group discussions:

- Ownership of archaeological sites.
- Put archaeological sites in the name of the treasury.
- Put fences around archaeological sites to protect it from animals and human abuse.
- Provide facilities and a rest house, lights, and good roads to encourage tourism.
- Encourage people who have irrigation ponds with a capacity of 350m to use it in fish production but people have to consider the level of ammonia and minerals in water.
- Develop and improve the fish-farming sector so that it becomes accessible for everyone and in cheap prices. People should be educated on the fish market and fish consumption. If attention was given for the fish-farming sector then we will not be in need of importing fish.
- Need for a public space or park for children.
- Need for rehabilitation of the infra structure.
- Protection of archaeological sites and provision of services and facilities to encourage tourism.
- Need for public parks and recreational areas.
- Use of grey water in irrigation.
- Planting medicinal plants.
- Encourage eco tourism since the area is an important bird area and rich in cultural and archaeological sites.
- Emphasize sources of pollution.

13 FOCUS GROUP 3

13.1 Social Aspects – Northern Zone Focus Group

Representatives were invited in zone 1 of the project from northern municipalities and the industries and hotels present in the Jordan Valley.

13.1.1 Group Members

The names of the members of the tourism and environment Focus Group are shown in Table 23.

Table 23: The members of the social focus group

No.	Name	Institution
1.	Eng. Lubna Umeira	Ministry of Public Works and Housing
2.	Abdullah Al-Sawai	Farmer
3.	Mohammad Talaq	Farmer/retired from JVA
4.	Mohammad al-Khashan	Tabqat Fahil Municipality Member/retired from municipalities
5.	Salim Bshara	Noor Al-Hussein Foundation/president of Wadi Khaled cooperative in the Jordanian Himmeh
6.	Dr. Salem Al-Amarat	Deir Alla Municipality
7.	Adel Abu-Siam	Deir Alla Municipality/ member of Khaza cooperative and a farmer
8.	Eng. Mohammad Al-Aboud	Deir Alla Municipality
9.	Ahed Al-Mirsal	Mu'adi Municipality member/farmer
10.	Ali Fahed	Farmer
11.	Eng. Faisal Qaseer	Ministry of Education
12.	Mahmoud Hishmeh	Consolidated Consultants
13.	Dr. Fouzi Sahawneh	Consolidated Consultants
14.	Luba Hamdi	Consolidated Consultants

13.1.2 Discussions within Focus Group

The following subjects were discussed:

Education:

- 30-35% of schools in the area are owned by JVA not by the (directorate of education) .in order to change its ownership the directorate has to pay to the JVA.
- Most of the school buildings are rented.
- Classrooms are so crowded due to the increasing rate of population.
- School buildings are not provided with facilities such as: playgrounds, laboratories, Etc
- Teachers employed by the directorate are not distributed according to their field of education.
- Some teachers are not qualified.
- Teachers move from one area to another, which affects the educational system and the students.
- The educational system that consists of two learning periods during the day leads to poor educational quality.
- Dropouts of students from schools due to poor standards of living in order to work.
- No higher education institutions, collages, or universities.
- People suggested that the JVA should allocate more lands units for constructing schools. In addition, the directorate of higher education should construct governmental collages and universities in the area.

Health care system:

- Health care centers are enough, but there is a lack of medical instruments, qualified medical specialists, and medical laboratories

- Hospitals are not enough in the region, the bed/person ratio is 8 beds per 35000 persons, according to participants, which is a very low rate. Number of doctors per persons is also low.
- People suggested that more land units should be allocated for constructing hospitals
- Plant pests increase numerously in summer in addition to house mosquitoes and flies.
- Most health centers in the area are primary health care centers; people suggested that some of the centers should be developed to comprehensive health care centers.
- There is no sewerage network system, people still use cesspits which pollute ground water in the area.
- No trash dumps in the area.
- Participants suggested that agricultural guidance in the Ministry of Agriculture should make farmers aware of the best land use methods that depend on the land properties and nature, use of pesticides and fertilizers, and planting lands according to the society demands.

Roads and transportation network:

- The main road in the area is so narrow and crowded, people suggested that it should be expanded in width, but this is not easy due to the presence of illegal supermarkets and trade centers in the area that belong to the main road. Previously, the main road was planned to be 40m in width but it is just 12m wide now.
- In order to decrease the congestion on the main road, people suggested that more land units should be allocated for the construction of ring roads all around each village and town in the area.
- Public transportation is not sufficient and efficient and so bus trips should be increased.
- Special lanes or even special road networks should be allocated for trucks.

Sources of income and job opportunities:

- Most of the farmers do not own the lands they work in.
- Foreign employment is increasing with time due to their lower salaries and higher productivity compared to local employees. This decreases the employment rate among the native people.
- The most important resource of income is agriculture; however, the economic returns are not sufficient. People think that the problem is insufficient marketing not productivity.
- People prefer working in governmental jobs rather than agriculture since it is not economically feasible nowadays.
- Agricultural lands are decreasing due to the trend of using agricultural lands as residential units.
- Lands that lie near the borders with Israel were taken by the government since the war of 1967 and they are not in use until now. Owners of those lands suffer from poverty; participants think that the problem of poverty and unemployment could be solved if the government returns back those lands to their owners. In brief the lands on the Israeli Jordanian borders are not used for political reasons
- People suggested that more land units should be allocated for establishing:
 - Agricultural factories such as juice factories, tomato factories, and organic natural fertilizer factories.
 - Handcrafts training centers.
 - Slaughterhouses
- There is an extended unexploited area that is owned by the government, people think that it would be better if the government uses part of this land as residential units since

it is not agricultural. This will help in solving the problem of using agricultural lands for residential purposes.

Suggestions:

- People suggested that more land units should be allocated for the purpose of constructing public parks, swimming pools (since king Abdullah culvert is used by children for swimming), and cemeteries.
- The Wadi Khaled Organization representative urged that we raise the issue of giving the land that was acquired for building the Wadi Khaled Dam back to the local people of Himmeh to be used in agriculture. It was mentioned that the compensation people got in the 1970s is of no value and that people in the area are very poor and know only how to work in agriculture. Therefore, they need to have those agricultural farm units in order to generate income and jobs. This issue was emphasized by the locals who accompanied the Organization representative.
- Allocate more lands for residential uses since the area of land present is not enough especially that the population number is increasing.

13.2 Water and Agriculture – Northern Zone Focus Group

Representatives were invited in zone 1 of the project from the North Shouneh in the Jordan Valley.

13.2.1 Group members

The names of the members of the tourism and environment Focus Group are shown in Table 24.

Table 24: The members of the water and agriculture focus group

No.	Name	Institution
1.	Hani Al-Muhsen	Deir Alla Municipality
2.	Manseb Al-Qweisem	Tabqat Fahil Municipality
3.	Eng. Youssef Al-Sakran	Deir Alla Municipality
4.	Eng. AbdKareem Abu Zeina	New Mu'adi Municipality- Head of Municipality
5.	Amin Abdullah	Noor Al-Hussein Foundation
6.	Eng. Amer Al-Safadi	Agricultural Directorate of the Jordan Valley
7.	Eng. Ghazi Ahmad	Water Authority/Water Management of the north
8.	Ali Al-Faqeer	Agricultural Sector
9.	Eng. Dana Al-Bakheet	Ministry of Public Works and Housing
10.		Mu'adi Municipality
11.	Ali Oklah	Deir Alla Municipality
12.	Dr. Adnan Al-Salihi	Consolidated Consultants
13.	Dr. Munir Rusan	Consolidated Consultants
14.	Ruba Khoury	Consolidated Consultants

13.2.2 Issues Discussed within the focus group

The Quality of Water:

- Clean water
- Treated water
- Marginal water
- Mixed water (clean and treated)

- Using cropping patterns that suit the quantities of irrigation water and according to seasons.
- Soil type and its relation with plants and the quality of water used.

The Quantity of Water

- Quantity of water available now is sufficient but limited.
- Planting will be according to water quantities
- Water quantity fluctuations from year to year which leads to farmer's loss.
- New resources of water and its uses (Wehdeh Dam)
- Cropping Pattern and its economical effects compared with the quantity of water used.

Other Issues

- Marketing of Products
- The right management of farms
- The role of women
- The need for training courses
- The need for wastewater networks because its absence is causing groundwater pollution.

13.2.3 Discussion and Conclusions

- Water in the Jordan Valley is classified into three types; clean water, treated water and mixed water.
- Clean water is available in the area from many sources; Yarmouk River, several side wadis, Wadi Arab Dam, Ziqlab Dam and others.
- The source of irrigation water is classified as follows:
 - King Abdullah Canal is used for irrigating areas from Al-Adasiya tunnel till the end of Kreimeh area.
 - King Talal Dam is used for irrigating some of the middle areas.
 - Mixture from King Abdullah Canal & King Talal Dam is used for irrigating some areas in south Al-Karameh.
 - Al-Kafrein Dam and other small dams are used for irrigating some lands directly.
- According to Jordanian specifications EC range is (500-1,500) msiemens, the measured EC for irrigation water does not exceed 1000 msiemens and so it's within the standards and there is no harm from using it.
- Some farmers noted that reports revealed that the water in King Talal Dam is polluted and not suitable for irrigation or for raising fish. It was clarified that there are no such reports, and they could review all the reports issued by the water authority and royal scientific society which proves that the water of the dam is within the Jordanian Standards, however in some drought years the EC has increased a bit but this is not considered as pollution and still the water could be used to irrigate some kinds of plants that stand high EC.
- Try to use treated water in industry as much as possible.
- The cropping patterns could be classified according to irrigation water used; clean, treated, or mixed.
- It was noted that there is a treatment plant in Al-Diyyat and its water is used for irrigation but it still needs more time for studying. It was clarified that treated water from As-Samra WWTP is already used for irrigation after mixing it with King Talal Dam water, the results are very pleasant and there are no effects on crops.

- The need for training courses for farmers to enrich their knowledge and enable them to contribute in studies and experiments. It was clarified that there is already a number of organizations for the farmers funded by agencies; it just needs reorganization along with agricultural guidance centers to make it more effective.
- The need for water harvesting to be used for irrigation, which will minimize the quantity of water used for irrigation and to ask the government to give loans for the people to encourage them to do so. It was clarified that this has been already done in several projects such as the development of Zarqa river basin and the development of Yarmouk river basin, and the desert dams that contributes a lot in water harvesting.
- Most of the agricultural productions are vegetables, fruits, citrus, and grain. There is a need for an organization to guide the farmers and put a specific cropping pattern to follow. It was clarified that the organization exists since 1982 and so the issue is to make it more effective.
- Inform the farmer of the water budget of the area and let him choose the crops and areas to be planted according to the quantities of available water.
- Modify the irrigation networks in the farms to make it more efficient. It was clarified that there is already a department in the Water Authority to modify the irrigation networks inside the farms and who ever needs that have to let them know and they will do all appropriate studies and work.
- The kind of soil has not been changed due to the use of treated and mixed water and this was clear from previous years, however, in drought years the EC has increased a bit and some crops have been damaged.
- It was noted that Karameh Dam water has high EC and not suitable for irrigation. It was clarified that this was due to drought seasons, and now in winter water from KAC is used for leaching soil and in few years it will be back to normal, and that this water could be used for irrigating some kind of crops like palm that stand high EC.
- Marketing of crops:
 - Marketing is not in good condition and not sufficient because production is much more than demand.
 - To encourage marketing outside the country, there are already three marketing centers; Al-Qarn, North Shouneh and Al-Sawalha, but they need to be activated and to construct a company to organize the work of these centers.
 - To establish food factories to use all excess crops in the area.
 - To establish training centers for the local people in the area to train them and allow them to work in factories.
- To establish a funding center to compensate farmers in cases of disasters.
- To subsidize the farming of grains is a continuous recommendation from the government.
- Wastewater networks do not exist in the area which has a negative impact on ground water and the environment. So, the area is in need for wastewater networks and treatment plants, and the effluent of the WWTP could be used for irrigation after mixing.
- To give some concern to animals and animal raising in the area.
- Women role:
 - To establish handicraft factories for women and to train them.
 - To establish educational centers.
 - It was noted that women in JV have a great role, they represent (70-90) % of the working force of the Jordanian workers, and comes in the second rank after foreign workers.
 - To encourage women to take part in food factories and to train them to do so.

- To train the locals of the area to work in the lands in order to minimize the number of foreign workers.

13.3 Environment and Tourism – Northern Zone Focus Group

The names of the members of the tourism and environment Focus Group are shown in Table 25.

Table 25: The members of the environment and tourism focus group

No.	Name	Institution
1.	Eng. Khaled Anab	Sharhabil Bin Hasnah Municipality
2.	Mohammad Al-Amri	Presdient of the North Shuneh Awqaf
3.	Mousa Al-theeban	Mouath Bin Jabal Municipality member
4.	Dr. Ata Ayyoub	Jordan Environment Society/Deir Alla
5.	Eng. Munther Al-Bakheet	Municipality Head of Deir Alla Al-Jadeeda
6.	Eng. Anas Amaira	Jordan River Foundation
7.	Ahmad Al-Salihi	The Jordanian Mineral Himmeh Company
8.	Dr. Reem Al-Kharouf	Minsitry of Education
9.	Hatem Marii	Member in the Nour Al-Hussein Foundation/Jordanian Himmeh
10.	Ali Al-Hataleen	Mouaddi Al-Jadeeda municipality member
11.	Khaled Abu Abta	Tabqat Fahil municipality member
12.	Dr. Raul Nasr	Consolidated Consultants
13.	Majdi Salameh	Consolidated Consultants
14.	Noura Al-Qudat	Consolidated Consultants

Three aspects have been discussed in the environmental group: the economical, Environmental and transportation needs and problems for people living in the northern Ghor. These issues are summarized as follows:

- **Tabqat Fahil Municipality:** Services and utilities provided for people do not accommodate their needs; there are needs for playground areas and a swimming pool since many kids have drowned while playing in King Abdullah Canal. On the other hand, the head of the municipality indicated that the lack of parks and rest areas have caused tourism to withdraw.
- Concerning urban planning, farm units and residential buildings are established very close to each other and thus, pesticides and herbicides used in farming, adversely affect the buildings and the quality of air.
- There is a need for extended urbanization especially in Al Mashare' and Al Sheikh Hussein area.
- **Deir Alla and Al Kreimeh Municipalities:** Lack recreational facilities, and the farm units are way too small and being established aside to the residential buildings. **Deir Alla** complains from water pollution due to the absence of sewerage networks and the dependence on cesspit tanks. In addition, there are many violations concerning the main road in **Kreimeh** where it would end up narrow because people extend their small residential units while building and use part of the road area.
- Generally speaking, there is an unwise division of residential units. Some units are located in mountainous locations, where constructing access roads to those areas and providing waterlines is a problem.
- **Al Ma'adi Municipality:** claims for extended urbanization. Residents need playground areas for their kids and parks for recreation.
- Limited residential areas.
- The Municipality complains, especially during the summer, from the pollution caused by wastewater and solid wastes in South Twal/Al Deyyat solid waste dump area, which

provides a suitable ambient for flies and mosquitoes and other annoying insects, that is besides the unpleasant smell caused by the dump area.

- **Al Ardha area:** The president of the Jordan Environment Society indicated that the lack of proper planning lead to environmental problems where the factories have been established randomly, not taking into consideration the residential areas. The tomato paste factory is known to be of a major environmental problem there.
- Residential units are crowded and population growth has lead to increased dependence on cesspit tanks since wastewater networks are yet not available in many parts of the Ghor.
- The president of the JES suggests some ideas in managing solid waste such as plastic recycling and using organic fertilizers. Besides, EIA studies must always be done before implementing any project in the area.
- Agricultural roads that provide access to farms are needed in **Mu'ath Bin Jabal and Al Himmeh** Municipalities. In one winter, floods in Al Himmeh road caused many losses in the farms that didn't have access roads, this lead to isolation of the farms from the area around.
- The Jordanian Himmeh Company has a new project which will be located on a 42 dunums and consists of hot therapeutic pools and a hotel of 25 chalets and 10 rooms. This will provide spa tourism for the Himmeh area and employ local people from the **Al Mkheiba** area.
- The representative of **Al Shuneh Awqaf** complained about the existence of dump areas near water resources.
- Ancient monuments need to be protected and given more attention. In areas where the Companions shrine is present, people are increasingly using cemeteries nearby because of its religious importance causing them to be very crowded.
- Reusing treated water for agriculture was very well welcomed by the people. People are ready to pay certain fees for the operation of the wastewater treatment plant since they already pay for the sewerage service. However, constructing a central treatment plant was not a good idea because of the flat terrain in the area which will make construction very difficult and will need deeper excavations and thus affecting the ancient monuments. As a result, it is preferable to construct a treatment plant for each area instead of one central plant.
- Water harvesting has been successfully used in the irrigation of olive trees and others.
- **Ghor and Al Rayyan areas:** The Jordan River Foundation is implementing income-generating projects in order to alleviate the living conditions of the people in Ghor and **Al Rayyan** area. The project consists of establishing Al Rayyan center, which aims at training a number of women on certain handicrafts and marketing their work in different places and then help those ladies to start their own business. The handicrafts made use of raw materials from burnt banana leaves that are considered waste. However, the main problem facing women in the center is the lack of an efficient transportation system and lit roads.
- There is a need for youth and computer centers that will make the youth search for information easier and enhance their computer skills thus increasing their chances in finding a job.
- Another suggestion that was of interest to the residents is the spring festival that is thought to enhance tourism since the area is of a religious, cultural and natural significance. The spring festival requires rehabilitation of infrastructure, utilities, agricultural areas and the shore that is polluted with litters.
- Other suggestions were made concerning making places for feeding and raising cattle and more centers for handicrafts, where charity fund (Al Zakat) is capable of directing and funding people who have skills and marketing their work.
- One of the existing parks in the area is Pella Park.