

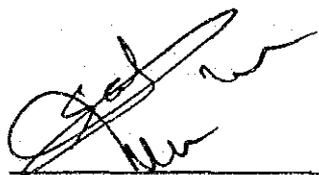
4. Minutes of Meetings

MINUTES OF MEETINGS
FOR
THE STUDY
ON
THE TOURISM DEVELOPMENT PLAN
IN
THE HASHEMITE KINGDOM OF JORDAN

AGREED UPON BETWEEN

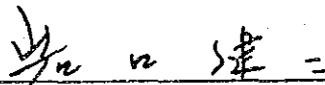
MINISTRY OF TOURISM & ANTIQUITIES
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

Amman, July 26th, 1994

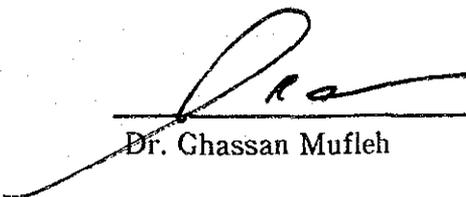


Dr. Safwan Toukan

Secretary General
Ministry of Planning



Mr. Kenji IWAGUCHI
Leader
Preparatory Study Team
Japan International
Cooperation Agency



Dr. Ghassan Mufleh

Secretary General
Ministry of Tourism and Antiquities

The Japanese Preparatory Study Team organized by Japan International Cooperation Agency (hereinafter referred to as "JICA"), headed by Mr. Kenji Iwaguchi visited The Hashemite Kingdom of Jordan from July 17th to 27th, 1994 for the purpose of discussing the Scope of Work for " THE STUDY ON THE TOURISM DEVELOPMENT PLAN" in The Hashemite Kingdom of Jordan (hereinafter referred to as "the Study").

The Japanese Preparatory Study Team exchanged views and had a series of discussions with representatives of Ministry of Tourism and Antiquities and Ministry of Planning (hereinafter referred to as "MOTA" and "MOP") and the organizations concerned, and also carried out field survey.

A list of those who participated in these discussions and field survey is shown in Annex (I).

The main items which were discussed by the Japanese Preparatory Study Team ,MOTA and MOP are as follows;

1. Both sides confirmed the title of the Study to be "The Study on the Tourism Development Plan".
2. Both sides agreed that the Study should be conducted in accordance with the Scope of Work, duly signed on July 26th, 1994.
3. Both sides agreed that the target-year of phase I and II studies shall be 2010 and 2000 respectively.
4. Jordanian side requested that the review of the tourism development plans recommended in the previous JICA study and the study on other potential areas should be included in the phase I study. Japanese side explained that the phase I study will cover whole country of Jordan , therefore , above mentioned plans and potential areas will be included.
5. Both sides agreed that the phase II study shall cover the priority zones from Amman to Aqaba along the King's Highway including Dead-Sea area,Wadi Araba to the west and along the Desert Highway to Wadi Rum and Mudawara at the Saudi Arabia border to the east.
6. Jordanian side requested that the relevant data collected from countries of neighborhood and with similar economic conditions should be presented in the study so as to find the weakness points in evaluation and identification of tourism development potential and constraints. Japanese side promised to make their best effort to collect relevant data.

 GRM

7. Jordanian side requested that the role of overall tourism development and the contribution of regional tourism development to national economy should be examined in the phase I study. Japanese side explained that the request should be taken into consideration in the study, but it will not be a detailed macro-economic analysis.
8. Both sides confirmed the importance of surveying and analyzing Japanese market for the Jordanian tourism.
9. Both sides agreed that the Government of The Hashemite Kingdom of Jordan would establish a Steering Committee consisting of following organizations under the chairmanship of MOTA for the purpose of the smooth implementation of the study.
 - (1) Ministry of Planning
 - (2) Ministry of Public Works and Housing
 - (3) Ministry of Transport
 - (4) Ministry of Municipal, Rural and Environmental Affairs
 - (5) Ministry of Energy and Mineral Resources
 - (6) Ministry of Water and Irrigation
 - (7) Ministry of Telecommunications and Post
 - (8) Department of Land and Survey
 - (9) Aqaba Governate
10. Jordanian side requested that Jordanian counterpart personnel take advantage of training in Japan related to the Study to promote effective technology transfer. Japanese side promised to convey this request to JICA Headquarters in Tokyo.
11. Both sides confirmed that the appropriate office space with necessary office equipment in Amman shall be provided by Jordanian side.
12. Both sides recognized the necessity of the Initial Environmental Examination for the Study. JICA will carry out the necessary environmental examination during the course of the Study.
13. Both sides recognized the necessity of holding a seminar in Amman to discuss the outcome of the study.
14. Jordanian side stressed the importance of analyzing and assessing the present laws and legislation which protects, controls and promotes national archaeological and touristic sites and which are supposedly being implemented through governmental Ministries and Institutions. Japanese side replied to take this matter into consideration.
15. Both sides confirmed the importance of coordinated and cooperated effort to make smooth and effective execution of the study.



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ANNEX 1

ATTENDANCE LIST

JORDANIAN SIDE

MOTA

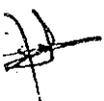
Dr.Moh'd Adwan	Minister
Dr.Ghassan Mufleh	Secretary General
Dr.Abdul-Ilah Abu-Ayyash	Assistant Secretary General
Mr.Adly Muhtadi	Director Public Relations and Marketing
Mr.Hamdi Hadidi	Head of Tourism Services
Mr.Mazen Tolhouni	Head of Environment Office
Mr.Haider Qussous	Head of Statistical Dept.
Mr.Omar Hayek	Planning and Studies

MOP

Dr. Hisham Al-Khateeb	Minister
Dr.Safwan Toukan	Secretary General
Mr.Salem Ghawi	Assistant Secretary General
Mr.Mustafa Zahran	Director of Projects Dept.I
Mr.Khaled Tarawneh	Director of Regional Planning Dept.
Mr.Yousef Batshon	Director of International Coop. Dept.
Dr.Mustafa Alsaleh	Assistant Director International Coop. Dept.
Eng.Ahmad Hindawi	Head of Telecom Sector,Tour Sector/Project Dept.I
Dr.Nael Al-Hajaj	Head Officer Bilateral Section

JAPANESE SIDE

Mr.Kenji Iwaguchi	Leader, Preparatory Study Team, Japan International Cooperation Agency (JICA)
Mr.Takuro Kasao	Member of Team, JICA
Mr.Daisaku Murakami	Member of Team, JICA
Mr.Yukihiro Aoki	Member of Team, JICA
Mr.Hironobu Ito	Member of Team, JICA
Mr.Kunio Ohashi	Member of Team, JICA
Mr.Yasuo Niimura	Member of Team, JICA
Mr.Toshihiro Shinohara	First Secretary, Embassy of Japan
Mr.Yasoyuki Mori	Resident Representative, JICA Jordan Office
Mr.Yuji Shirata	Assistant Resident Representative, JICA Jordan Office
Eng.Hani Al Kurdi	Research Coordinator JICA Jordan Office

 G.A.M.



5. Questionnaire

QUESTIONNAIRE

FOR

THE STUDY ON THE TOURISM DEVELOPMENT PLAN

IN

THE HASHEMITE KINGDOM OF JORDAN

July, 1994

JAPANESE PREPARATORY STUDY TEAM

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

Note :

- Underline shows most important items to be collected during a preparatory study
- Please mark for the Data/Item in the "Availability" which is available
- Please mark for the Data/Item in the "Availability" which is not available
- List of required data/reports are as per attached

The questionnaire is prepared by the Japanese Preparatory Study Team for the Study on the Tourism Development Plan in the Hashemite Kingdom of Jordan (hereinafter referred to as "the Study") so as to get basic information and data required for the Study. Please answer all the questions in English and also identify materials requested in this questionnaire. Answers need not be too much in detail but should be brief and precise.

However, it should be recognized that, because of its preliminary characteristic of this questionnaire, the Study Team would like to ask for additional date / information on the occasion of discussion with the Jordanian side.

Thank you for your cooperation.

I. GENERAL

1. The Preparatory Study Team would like to obtain general explanation and related information, if any, on the followings:
 - (1) Background and necessity of this Study
 - (2) Action having been taken / being taken by the international organizations (such as World Bank, USAID and UNESCO) and Jordanian side for the project.
 - (3) Possible action to be undertaken by the Jordanian side based upon the output of this Study.
 - (4) Present status and future role of MOTA, JTB (Jordan Tourism Beard) and RSCN (Royal Society for the Conservation of Nature)
 - (5) Present problems of tourism sector.

II. NECESSARY DATA

The Preparatory Study Team would like to collect relevant information, documents and maps listed in the attached questionnaire so as to bring back to Japan for the full scale study.

THE LIST OF NECESSARY DATA / INFORMATION

I. NATURAL CONDITIONS (1)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		YES/NO	PLACE OF DATA AVAILABLE	
1. Topography	(1) Topographic Maps (1:250,000 and 1:50,000)	YES	RJGC*	
	(2) Geographic Maps (1:250,000 and 1:50,000)	YES	"	
	(3) Charts of Sea area	YES	" Aqaba Port	
	(4) Aerial Photos	YES	RJGC*	
	(5) Vegetation Maps (Characteristics species)	YES	Min. of Agriculture	
	(6) Wildlife Maps (Characteristics species)	YES	RSCN*	

* RJGC ... The Royal Jordanian Geographic Centre

* RSCN ... Royal Society for Conservation of Natur

I. NATURAL CONDITIONS (2)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		YES/NO	PLACE OF DATA AVAILABLE	
2.Land Use	(1) Land Use Maps	YES	MMR&EA*	
	(2) Town planning maps	YES	"	
	(3) <u>Land use guidelines</u>	YES	"	
	(4) Building control guidelines	YES	"	
	(5) Design guidelines	YES	"	
	(6) <u>Land ownership</u> (Land availability)	YES	Dept of Land & Survey	
	(7) <u>Laws and Regulations of land use and development</u>	YES	MMR&EA*	

* MMR&EA --- Ministry of Municipal, Rural and Environmental Affairs

I . NATURAL CONDITIONS (3)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		YES/NO	PLACE OF DATA AVAILABLE	
3.Climate	(1) Temperature/Humidity (Monthly variations)	YES	Dept. of Statistics & Dept. Meteorology	Statistical Yearbook Annual Reports
	(2) Periods, durations and intensities of rainfalls	YES	"	"
	(3) Seasonal variations	YES	"	"
	(4) Mean duration of sunshine	YES	"	"
4.Oceanography	(1) Tidal current maps and tide levels	YES	Aqaba Port	"
	(2) Wave statistics	YES	"	"
	(3) Water quality	YES	MOW* Min. of Health	"
5.Natural Resources	(1) Water resources (coastal, lakes and rivers, waterfalls)	YES	MOW	Reports
	(2) Mountain resources (highlands, hills and valleys)	YES	RIGC	Maps
	(3) Wildlife resources (national parks, reserves and conservation area)	YES	RSCN	Reports

*MOW ... Ministry of Water and Irrigation

II. SOCIO-ECONOMIC CONDITIONS (1)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		YES/NO	PLACE OF DATA AVAILABLE	
1. Administration	(1) Administrative boundary maps (National and local government)	YES	MMR&EA	Maps
	(2) Hierarchy of main towns and resort centers (Decision-making authorities)	YES	Dept of Statistics	Year Book
2. Population	(1) Population, land area and population density	YES	"	
	(2) Main economic activities	YES	Min. of Planning	Five-Year Plan
	(3) Population by age and by sex	YES	Dept of Statistics	Year Book
	(4) Inter-regional migration/emigration	NO	Not Available	
	(5) Number of household	YES	Dept. Statistics	Year Book
	(6) Number of workers by industrial groups	YES	"	"

II. SOCIO-ECONOMIC CONDITIONS (2)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		YES/NO	PLACE OF DATA AVAILABLE	
3. Economy	(1) Gross domestic product (National and local government) (2) Gross product by industrial groups (3) Average family income and expenditures (4) Distribution of families by income class (5) Wholesale price index and consumer price index (6) Leisure time trends and annual paid holidays	YES	Min. of Planning	Five-Year Plans
4. Expenditures and receipts	(1) Balance of tourist expenditures and receipts (last 10 years)	YES	Central Bank	Annual Reports
5. Employment	(1) <u>Employment generated by tourism</u> (on hotels and travel trade only)	YES	Dept. Statistics Dept. Statistics Dept. Statistics	Reports Reports Reports
6. Government revenues	(1) <u>Government revenues from tourism</u> (taxes, rates, duties, etc.)	YES	NO Central Bank MOTA* Central Bank	Reports Reports Reports Reports

* MOTA ... Ministry of Tourism and Antiquities

II. SOCIO-ECONOMIC CONDITIONS (3)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		YES/NO	PLACE OF DATA AVAILABLE	
7. Transportation	(1) <u>Networks of railway, road, airline and waterway</u>	YES	Min. of Transport	Reports
	(2) Time-table of railway, airline, waterway and bus services	YES	"	"
	(3) Passenger-Kilometers of railway, road, air and water transport	YES	"	"
	(4) <u>Facilities, capacities and operations conditions:</u>	YES	"	"
	• <u>Railways</u>	YES	"	"
	• <u>Roads</u>	YES	"	"
	• <u>Ports</u>	YES	"	"
	• <u>Airports (Length of Runways)</u>	YES	"	"
	• <u>Ferries</u>	YES	"	"
	(5) Car ownership	YES	Traffic Dept	"

III. REGIONAL DEVELOPMENT (1)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		YES/NO	PLACE OF DATA AVAILABLE	
1. Present situation	(1) Telecommunication networks (Availability, Reliability, Quality, Total Capacity)	YES	TCC	Reports
	(2) <u>Energy supply</u> Electricity Gas	YES	Electricity Authority	Reports
	(3) <u>Water Supply</u>	YES	MOW	Reports
	(4) <u>Sewerage and refuse disposal</u> (Means of control, standards, effectiveness)	YES	MMR & EA	Reports
	(5) <u>National Park</u> (Reserves and conservation Area)	YES	RSCN	Reports
	(6) Activities polluting air and water	YES	Several	Reports
	(7) Removal of industrial dereliction	?	?	?
	(8) <u>Laws, regulations and guidelines of regional development</u>	YES	MMR & EA	Reports

III. REGIONAL DEVELOPMENT (2)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		YES/NO	PLACE OF DATA AVAILABLE	
2. Future plans	(1) <u>Future Development projects of:</u> <ul style="list-style-type: none"> • transportation facilities • telecommunications • energy supply • water supply • Sewerage and disposal facilities 	YES	Min. of Transport	Reports
		YES	TCC	
		YES	Min. of E & MR*	Reports
		YES	MOW	Reports
		YES	MOW and MMR & EA	Reports
	(2) <u>Airport expansion and construction plan</u>	YES	Min. of Transport	Reports
		YES	MOW	Reports
			MOW and MMR & EA	
			RSCN	
3. Construction and operation cost	(4) <u>Expansion and construction of parks and green zones</u>	YES	RSCN	Reports
	(1) <u>Publication of material at present</u>	YES	Contractors-Union	Monthly Reports Central Bank
	(2) <u>Publication of construction equipment price at present</u>	YES	"	"
	(3) <u>Publication of minimum wages at present</u>	YES	"	"

*TCC Tel Communication Corporation

*Min. of E & MR ... Ministry of Energy and Mineral Affairs

IV. TOURISM CONDITIONS (1)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		YES/NO	PLACE OF DATA AVAILABLE	
		1. Resources		
	(1) <u>Distribution map of tourist resources and facilities</u> (Visitor attractions, unique monuments, animals, spectacular features and dramatic landscapes)	YES	MOTA	Reports
	(2) Accessibility of main tourist or recreation sites	YES	MOTA	Reports
	(3) Capacities of main tourist or recreation sites	NO	Needs a Survey	Reports
	(4) <u>Antiquities</u>			
	(5) Traditions	YES	MOTA	Reports
	(6) Cyclical attractions (Festivals, carnivals, etc.)	YES	MOTA	Reports
	(7) Fishing / hunting areas	YES	MOTA	Reports
	(8) Recreation facilities	YES	MOTA	Reports
	(9) Catering facilities	YES	MOTA	Reports
	(10) Sports facilities	YES	MOTA	Reports
	(11) Manpower availability for tourism services and training facilities	NO	Man power needs a Survey	Reports

IV. TOURISM CONDITIONS (2)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		YES/NO	PLACE OF DATA AVAILABLE	
2. Industries	<p>(1) <u>Hotellers (last 5 years)</u></p> <ul style="list-style-type: none"> • No. of Hotels • Capacities • Room rates • Occupancy rates • List of hotels • Projected supply and its occupancy rates (next decade) • No. of guests per year <p>(2) Air carriers, Bus and railway companies</p> <ul style="list-style-type: none"> • List • Main routes • Fare (Normal and promotional) • Policies • Turnover (last 5 years) • No. of passengers (") • Passenger-kilometers (") • No. of flight by airline 	YES	MOTA	Statistics
		YES	"	"
		YES	"	"
		YES	"	"
		YES	"	"
		NO		
		YES	MOTA	Statistics
		YES	Min. of Transport	Reports & Statistics
		YES	Different Sources	"
		YES	"	"
		YES	"	"
		YES	"	"
		YES	"	"
		YES	"	"

IV. TOURISM CONDITIONS (3)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		YES/NO	PLACE OF DATA AVAILABLE	
	<p>(3) <u>Tour operators, Travel agents, Ground handlers</u></p> <ul style="list-style-type: none"> • Numbers • List • No. of Staff and offices • Turnover (last 5 years) • No. of tourist guides • Distribution by location and language • Guide fee • Type of tour for sale • Cooperation with foreign operators, if any • Registration system, if any • Availability of tour guide and interpreter • Sales approach (incl. cooperation with foreign operator), if any 	<p>YES YES YES YES YES YES YES YES YES YES YES NO</p>	<p>MOTA " " " " " " " " " " "</p>	<p>Reports & Statistics " " " " " " " " " " "</p>

IV. TOURISM CONDITIONS (4)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS	
		YES/NO	PLACE OF DATA AVAILABLE		
3. Tourist Product	<p>(1) Foreign arrivals (last 10 years)</p> <ul style="list-style-type: none"> • No. of foreign arrivals • By country of origin • By Main motivations • By range of expenditure • By type of travel • By main destinations • By main facilities used • By means of transport • By duration of stay • By month • Projected no. of foreign arrivals (next decade) • No. of travellers arrival by major tourism site <p>(2) Domestic travellers (last 10 years)</p> <ul style="list-style-type: none"> • No. of domestic travelers • By main motivations • By range of expenditure • By type of travel • By main destinations • By main facilities used • By means of transport • By duration of stay • Projected no. of Domestic travelers (next decade) 	YES	MOTA	Reports & Statistics	
		YES	"	"	
		YES	"	"	
		YES	"	"	
		YES	"	"	
		YES	"	"	
		YES	"	"	
		YES	"	"	
		YES	"	"	
		YES	"	"	
		YES	"	"	
		YES	"	"	
		YES	"	"	
		YES	"	"	
		NO		Needs a Survey	
		NO			
NO					

IV. TOURISM CONDITIONS (5)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		YES/NO	PLACE OF DATA AVAILABLE	
4. Marketing	(3) Jordanian travellers overseas (last 10 years)	NO	Needs a Survey	Some Reports
	• No. of Jordanian travellers Overseas	NO		
	• By main motivations	NO		
	• By range of expenditure	NO		
	• By type of travel	NO		
• By main destinations	NO			
• By main facilities used	NO			
• By means of transport	NO			
• By duration of stay	NO			
• Projected no. of Jordanian travellers (next decade)	NO			
5. Market information	(1) <u>Marketing and promotion of tourism in Jordan</u>	YES/NO	MOTA	
	(2) Government tourism policies	Some	Five-Year Plan	
	(3) MOTA priority projects	?	Study Required	
	(4) MOTA Budgets and resources	YES	MOTA	
	(1) <u>Analyses of competitive resorts in other countries</u>	NO		
	(2) <u>Authorities in charge of tourism development (development organizations)</u>	YES	MOTA	

IV. TOURISM CONDITIONS (6)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		YES/NO	PLACE OF DATA AVAILABLE	
6. Others	(3) <u>Laws, regulations and guidelines of tourist development.</u>	YES	MOTA	
	(4) Projects of tourism and recreational development	?		
	(1) Government policies of tourism development (Administration, budget, subsidies etc.)	?		
	(2) Incentive to the private sector	?		
	(3) List of major contractors (Name, address, capital)	YES	M.of Public Works	Official List
	(4) <u>List of major consultant companies for tourism development including Civil Engineering and Environment</u> (Name, address, no. of staff and consulting fee by class)	YES	MOTA	
	(5) Promotion Pamphlets	YES	MOTA	
(6) Number of Promotion Office in foreign countries by country	YES	MOTA		
(7) Man Power training scheme, if any by type of training	YES	VTC*	Reports	

*VTC ... Vocational Training Corporation

V. TOURISM ADMINISTRATION / POLICY

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		YES/NO	PLACE OF DATA AVAILABLE	
1. Tourism Administration / Policy	(1) Organization of Tourism Administration (Outline, organizational chart)	YES	MOTA	Chart
	(2) <u>Outline of MOTA</u> (Ministry of Tourism and Antiquities) (Organization, functions, budget, etc.)	NO		
	(3) Tourism Development Corporation/Fund at national/provincial level, if any	NO		
	(4) Organization/System for Tourism development/operation (other than MOTA)	NO		
	(5) Organization/System for Tourism Promotion (other than MOTA)	NO		
	(6) Laws and regulations to tourism (Ex. Tourism Basic Law, Travel Agency Law, Law for Improvement of International Tourist Hotel Facilities, if any)	YES	MOTA	Chart
	(7) Laws and regulations concerning tourism development	YES	MOTA	
	(8) Incentive measures/preferential treatment concerning tourism development/promotion (tax reduction, subsidy, etc.)	NO	Min. of Industry	

VI TOURISM DEVELOPMENT PLAN

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		YES/NO	PLACE OF DATA AVAILABLE	
1. Tourist Development Plan.	(1) National Economic and Social Development Plan (2) Existing tourism development (Outline, executing body, etc.)	YES	Min. of Planning MOTA	Document

VI. ENVIRONMENTAL ISSUES (1)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		YES/NO	PLACE OF DATA AVAILABLE	
1. Legislation	<ul style="list-style-type: none"> (1) <u>Law/guidelines on environmental impact assessment</u> (2) <u>Quality standards</u> (3) <u>Responsible ministry or agencies</u> (4) <u>Procedure for IEE/EIA, if any</u> 	YES	MMR&EA	Draft Law
2. International conventions on environmental conservation	<ul style="list-style-type: none"> (1) <u>Bilateral convention</u> (2) <u>Multilateral convention</u> 	YES YES YES	RSS MMR&EA Min. of Industry & Trade Min. of Health Min. of Planning	Documents
3. Present situation of the project area	<ul style="list-style-type: none"> (1) <u>Socio-economic environment</u> <ul style="list-style-type: none"> • <u>Number of people to be resettled and plan of resettlement or compensation</u> • <u>Experience of resettlement in previous project</u> • <u>Main industry or source of income of the residents</u> • <u>Number and distribution of schools, hospitals, religious facilities</u> • <u>Location of the community which might be split by the project</u> • <u>Cultural property or archaeological site</u> • <u>Use of river/lake water, i.e. domestic industrial and agricultural</u> • <u>Existence of common land</u> • <u>Historical of epidemic disease</u> • <u>Rights of fishery (coastal, lake and river)</u> 	NO ? YES	Ministries	
		YES YES	MOTA MOW	
		YES ? ?	Dept. Land & Survey	

VI. ENVIRONMENTAL ISSUES (2)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		YES/NO	PLACE OF DATA AVAILABLE	
	<ul style="list-style-type: none"> • Coverage of water supply system and sewerage system • Solid waste collection and disposal system 	YES	MOW	
	<ul style="list-style-type: none"> • <u>Availability of meteorological data</u> • <u>Availability of land use and vegetation map</u> • History of natural disaster, landslide earthquake and flood • Areas affected by soil erosion • <u>Change of water level of rivers and lakes, ground water in recent years</u> • <u>Location of environmentally vulnerable areas such as mangrove forest, coral reef, wetland, tideland</u> 	YES YES YES YES YES	Dept Meterology MMR&EA NRA* NRA* MOW	
	<ul style="list-style-type: none"> • Availability of oceanological data such as littoral drift, oceanological map • Species of valuable animals and plants living in the project area • <u>Location of particular areas officially protected such as national parks and natural parks</u> • Distribution of important landscape or scenery for tourism 	NO YES ? YES YES	 Port Authority RSCN MOTA	

VI. ENVIRONMENTAL ISSUES (3)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		YES/NO	PLACE OF DATA AVAILABLE	
	(3) Quality of life <ul style="list-style-type: none"> • Present air quality • Regulation on emission gas • Present water quality • Regulation on effluent • Present condition of soil contamination • Regulation for prevention of soil contamination • Present condition of noise and vibration • Regulation for prevention of noise and vibration 	YES YES YES YES YES YES ? ?	DOE DOE DOE* & MOW* DOE* & MOW* Min. of Agriculture Min. of Agriculture (only for car noise Traffic Dept. of Public Security)	

*DOE ... Department of Environment

*MOW ... Ministry of Water and Irrigation

6. 収集資料リスト

収集資料リスト

番号	資料の名称	版型	A ^o -ジ数	北-の別	著者/発行機関
1	地図 Archaeological Map Sheet No.1 AMMAN Scale:1/250000 April 1978			北-ナド	The Royal Jordanian Geographich Centre
2	Archaeological Map Sheet No.2 KARAK Scale:1/250000 March 1979			北-ナド	The Royal Jordanian Geographich Centre
3	Archaeological Map Sheet No.1 MA'AN Scale:1/250000 May 1981			北-ナド	The Royal Jordanian Geographich Centre
4	Archaeological Map Sheet No.1 MAHATTAT Scale:1/250000 June 1982			北-ナド	The Royal Jordanian Geographich Centre
5	National Atlas of Jordan PartII (Hydrology and Agrohydrology) -1986	A3	141	北-ナド	The Royal Jordanian Geographich Centre
6	Jordan Road Map Scale :1/750000			北-ナド	The Royal Jordanian Geographich Centre
7	The Tourist Map of AULUN Scale:1/5000			北-ナド	The Royal Jordanian Geographich Centre
8	The Tourist Map of JARASH Scale:1/5000			北-ナド	The Royal Jordanian Geographich Centre
9	The Tourist Map of AMMAN Scale:1/20000			北-ナド	The Royal Jordanian Geographich Centre
10	The Tourist Map of MA'DABA Scale:1/5000			北-ナド	The Royal Jordanian Geographich Centre
11	The Tourist Map of AL KARAK Scale:1/5000			北-ナド	The Royal Jordanian Geographich Centre
12	The Tourist Map of PETRA Scale:1/5000			北-ナド	The Royal Jordanian Geographich Centre
13	The Tourist Map of RAM Scale:1/38500			北-ナド	The Royal Jordanian Geographich Centre
14	The Tourist Map of AQABA Scale:1/10000			北-ナド	The Royal Jordanian Geographich Centre

番号	資料の名称	版型	ページ数	収録の別	著者/発行機関
15	開発計画 Economic and Social Development Plan 1998-1997	B5	211	初シナル	Ministry of Planning
16	Draft Management Plan for Petra Archaeological and Natural Park, 1993	A4	201	北-	UNESCO
17	経済統計 Twenty Ninth Annual Report 1992	B5	162	初シナル	Central Bank of Jordan
18	Monthly Statistical Bulletin Vol.30 No.5 May 1994	A4	108	初シナル	Central Bank of Jordan
19	Services Survey 1992	A4	108	初シナル	Department of Statistics
20	Industrial survey 1992	A4	122	初シナル	Department of Statistics
21	Statistical Yearbook 1992	A4	518	初シナル	Department of Statistics
22	環境 A Draft Jordan Environment Act, October 1992	A4	17	北-	Min. of Municipal and Rural Affairs & the Environment
23	Water Resources of Jordan Present Status and Future Potentials, 1993	A4	183	初シナル	Royal Society for the Conservation of Nature
24	Aqaba Coastal Resources Environmental Management Study in Jordan, Draft Final Report, June 1993 Vol.1,2,3	A4	133 103 178	北-	COWI Consult/Jouzy & Partners
25	National Environment Strategy For Jordan, August 1991	A4	223	北-	USAID/ICUN
26	Jordan Environmental Profile Status and Abatement, 1989	B5	273	初シナル	Abdullah Abd Er-Rahim
27	Introduction to Marine Life of Aqaba, 1982	A4	24	初シナル	Royal Society for Conservation of Nature

番号	資料の名称	版型	ページ数	資料の別	著者/発行機関
	一般図書				
28	High Above Jordan (Aerial Photographs)	B4	64	別冊	Jane Taylor
29	The Kings Highway	B5	165	別冊	Graeme Donnan, 1994
30	Petra	B5	256	別冊	Iain Browning, 1973
31	Petra	B4	80	別冊	Jane Taylor
32	その他 Jordan Electricity Authority Annual Report 1993	A4	52	別冊	Jordan Electricity Authority
33	道路関係資料; 交通量、道路網図、実施中及び計画プロジェクト・リスト	A4		別冊	Ministry of Public Works and Housing
34	The Rehabilitation of the Hedjaz Jordan Railway to be used for Tourism and Recreation	A4	13	別冊	MOTA, MOP and Hedjaz Jordan Railway
35	Jordan Tourism Sector Project Identification AID MEMOIRE July 9, 1994	A4	31	別冊	World Bank Mission
36	Cultural and Environmental Resources Management	A4	72	別冊	USAID
37	The Dana Project	A4	15	別冊	The Royal Society for the Conservation of Nature Jordan
38	Brochure of The Royal Society for the Conservation of Nature	A4	27	別冊	The Royal Society for the Conservation of Nature Jordan

7. ローカルコンサルタントリスト

LIST OF QUALIFIED CONSULTANT COMPANIES

ACCORDING TO THE GOVERNMENT TENDERS DIRECTORATE
MINISTRY OF PUBLIC WORKS - 14/4 & 23/7 / 93

SPECIALIZATION : CONSTRUCTION MATERIAL TESTING

NO.	CONSULTANT'S NAME	ADDRESS	TEL. NO.	CATE GORY	REMARKS
1.	ENGINEERING STUDIES FOR SOIL, MATERIAL TESTING & FOUNDATION COMPANY	P.O.B 5382 AMMAN	642806	A	
2.	ARAB CENTRE FOR ENGINEERING STUDIES	P.O.B 5504 AMMAN	810777	A	
3.	TOUQAN & SAKET GEOLOGY AND ENGINEERING STUDIES	P.O.B 926897 AMMAN	662405	A	
1.	ARAB ESTABLISHMENT FOR ENGINEERING & TECHNOLOGY	P.O.B 141290 AMMAN	815200	B	
2.	AMMAN CENTRE FOR SOIL AND ENGINEERING MATERIAL TESTING	P.O.B 968 AMMAN	848222	B	

LIST OF QUALIFIED CONSULTANT COMPANIES

ACCORDING TO THE GOVERNMENT TENDERS DIRECTORATE
MINISTRY OF PUBLIC WORKS - 14/4 & 23/7 / 93

SPECIALIZATION : SITE INVESTIGATION

NO.	CONSULTANT'S NAME	ADDRESS	TEL. NO.	CATE GORY	REMARKS
1.	ENGINEERING STUDIES FOR SOIL, MATERIAL TESTING & FOUNDATION COMPANY	P.O.B 5382 AMMAN	642806	A	
2.	ARAB CENTRE FOR ENGINEERING STUDIES	P.O.B 5504 AMMAN	810777	A	
3.	TOUQUAN & SAKET GEOLOGY AND ENGINEERING STUDIES	P.O.B 926897 AMMAN	662405	A	
4.	ARAB ESTABLISHMENT FOR ENGINEERING & TECHNOLOGY	P.O.B 141290 AMMAN	815200	A	
1.	MOHAMMAD ZUHAIR SHADID ENGINEERING OFFICE	P.O.B 141056 AMMAN	810709	B	
2.	AMMAN CENTRE FOR SOIL AND ENGINEERING MATERIAL TESTING	P.O.B 968 AMMAN	848222	B	

LIST OF QUALIFIED CONSULTANT COMPANIES

ACCORDING TO THE GOVERNMENT TENDERS DIRECTORATE
MINISTRY OF PUBLIC WORKS · 14/4 & 23/7 / 93

SPECIALIZATION : WATER AND SEWERAGE

NO.	CONSULTANT'S NAME	ADDRESS	TEL. NO.	CATE GORY	REMARKS
1.	ENGINEERING CONSULTANTS FOUNDATION COMP. "JOUZY- PARTNERS"	P.O.B 9112 AMMAN	662818	A	
2.	INTERNATIONAL CONSULTING ENGINEERING COMPANY	P.O.B 926307 AMMAN	660742	A	
3.	SIGMA CONSULTING ENGINEERS	P.O.B 20076 AMMAN	661031	A	
4.	DAR AL HANDASA CONSULTING ENGINEERS	P.O.B 2292 AMMAN	661448	A	
5.	SHBILAT & BADRAN CONSULTING ENGINEERING	P.O.B 182571 AMMAN	604200	A	
6.	CONSULTING ENGINEERING CENTRE	P.O.B 8180 AMMAN	661251	A	
7.	CONSOLIDATED CONSULTANTS FOR ENG., ENVIRON., AND BUILDING CO.	P.O.B 19830	644088	A	FOR WATER ONLY
8.	ARABTECH & TARDANEH J.V	P.O.B 7323 AMMAN	665297	A	
1.	ARKADIA ENGINEERING CO.	P.O.B 950543 AMMAN	661729	B	
2.	MIMAR CONSULTING ENGINEERS	P.O.B 925985 AMMAN	664134	B	
3.	JORDANIAN CONSULTING CO.	P.O.B 926963 AMMAN	606150	B	
4.	CONSOLIDATED CONSULTANTS FOR ENGINEERING, ENVIRON., AND BUILDING CO.	P.O.B 9830 AMMAN	644088	B	FOR SEWERAGE ONLY
5.	AMMAN CONSULTING ENGINEERING OFFICE	P.O.B 926346 AMMAN	662783	B	SUPERVISI- ON ONLY

LIST OF QUALIFIED CONSULTANT COMPANIES

ACCORDING TO THE GOVERNMENT TENDERS DIRECTORATE
MINISTRY OF PUBLIC WORKS - 14/4 & 23/7 / 93

SPECIALIZATION : ROADS

NO.	CONSULTANT'S NAME	ADDRESS	TEL. NO.	CATE GORY	REMARKS
1.	ENGINEERING CONSULTANTS FOUNDATION COMP. "JOUZY & PARTNERS"	P.O.B 9112 AMMAN	662818	A	
2.	INTERNATIONAL CONSULTING ENGINEERING COMPANY	P.O.B 926307 AMMAN	660742	A	
3.	CONSULTING ENGINEERING CENTRE	P.O.B 8180 AMMAN	661251	A	
4.	DAR AL HANDASA CONSULTING ENGINEERS	P.O.B 2292 AMMAN	661448	A	
5.	CONSOLIDATED CONSULTANTS FOR ENG., ENVIRON., AND BUILDING CO.	P.O.B 9830 AMMAN	644088	A	
6.	ARABTECH, JARDANEH J.V	P.O.B 7323 AMMAN	665297	A	
1.	JORDANIAN CONSULTING COMP.	P.O.B 926963 AMMAN	606150	B	
2.	ARABIC CONSORTUIM CONSULTING ENGINEERS	P.O.B 910957 AMMAN	644473	B	SUPERVISI- ON ONLY

LIST OF QUALIFIED CONSULTANT COMPANIES

ACCORDING TO THE GOVERNMENT TENDERS DIRECTORATE
MINISTRY OF PUBLIC WORKS - 14/4 & 23/7 / 93

SPECIALIZATION : BUILDING CONSTRUCTION

NO.	CONSULTANT'S NAME	ADDRESS	TEL. NO.	CATE GORY	REMARKS
1.	JAFAR TOUQAN CONSULTING CO.	P.O.B 2902 AMMAN	664668	A	
2.	SIGMA CONSULTING ENGINEERS	P.O.B 20076 AMMAN	661031	A	
3.	SHBILAT & BADRAN CONSULTING ENGINEERS	P.O.B 182571 AMMAN	604200	A	
4.	SUBBH ENGINEERING OFFICE	P.O.B 2075 AMMAN	665789	A	
5.	MIAMAR CONSULTING ENGINEERS	P.O.B 925985 AMMAN	664134	A	
6.	ARABTECH, JARDANEH J.V	P.O.B 7323 AMMAN	665297	A	
7.	CONSOLIDATED CONSULTANTS FOR ENG., ENVIRON., & BUILDING CO.	P.O.B 9830 AMMAN	644088	A	
8.	DAR-ALHANDASA CONSULTING ENGINEERS	P.O.B 2292 AMMAN	661448	A	
1.	AMAR CONSULTING ENGINEERS	P.O.B 9740 AMMAN	601314	B	
2.	INTERNATIONAL CONSULTING ENGINEERING COMPANY	P.O.B 926307 AMMAN	660742	B	
3.	KHAIAT ENGINEERING OFFICE	P.O.B 9272 AMMAN	685270	B	
4.	ARKADIA ENGINEERING CO.	P.O.B 950543 AMMAN	661729	B	
5.	AMMAN CONSULTING ENGINEERING OFFICE	P.O.B 926346 AMMAN	662783	B	

LIST OF QUALIFIED CONSULTANT COMPANIES

ACCORDING TO THE GOVERNMENT TENDERS DIRECTORATE
MINISTRY OF PUBLIC WORKS - 14/4 & 23/7 / 93

SPECIALIZATION : BUILDING CONSTRUCTION - 2

NO.	CONSULTANT'S NAME	ADDRESS	TEL. NO.	CATE GORY	REMARKS
6.	HABIB CONSULTING ENGINEERING FOUNDATION	P.O.B 35293 AMMAN	643768	B	
7.	MANAR CONSULTING ENGINEERS	P.O.B 811554 AMMAN	606278	B	
8.	COALITION FOR ENGINEERING CONSULTING "MADI & PARTNERS"	P.O.B 910107 AMMAN	639598	B	
9.	MODERN CONSULTING OFFICE	P.O.B 925796 AMMAN	661537	B	
10.	ENGINEERING CONSORTIUM COMP.	P.O.B 927079 AMMAN	663554	B	
11.	CONSULTING ENGINEERING CENTRE	P.O.B 8180 AMMAN	661251	B	
12.	ATALLAH DAWANI CONSULTING ENGINEERS	P.O.B 910268 AMMAN	629707	B	
13.	ENGINEERING DRAWINGS FOUNDATION.	P.O.B 926813 AMMAN	629600	B	
14.	ARABIC CONSORTIUM CONSULTING ENGINEERS	P.O.B 926813 AMMAN	644473	B	
15.	ISMAEEL BRAIWASH ENGINEERING OFFICE	P.O.B 5450 AMMAN	810237	B	SUPERVISI- ON ONLY

8. 環境資料情報

a. ジョルダン国内の重要な情報源

出典) NATIONAL ENVIRONMENT STRATEGY FOR JORDAN (1991)

・遺跡

(1)遺跡に関する情報を有する人物

<i>Name and subject of interest</i>	<i>Organization</i>
Dr. Ghazi Bisheh (Islamic Art and Architecture)	Director General of the Department of Antiquities
Dr. Mu'awiyah Ibrahim (Prehistory)	Institute of Anthropology and Archaeology, Yarmouk Univ.
Dr. Adnan Hadidi (Classical Archaeology)	National University
Dr. Fawzi Zayadin (Nabatean Archaeology)	Technical Assistant Director, Department of Antiquities
Dr. Assim el-Barghouti (Classical Archaeology)	King Sa'ud University, Riyadh
Dr. Kheir Yassin (Iron Age)	Archaeology Department, University of Jordan
Dr. Safwan Tell (Islamic Art and Architecture)	Archaeology Department, University of Jordan
Dr. Nabil el-Kheiry (Nabatean Archaeology)	Archaeology Department, University of Jordan
Dr. Sabri el-'Abadi (Ancient Inscriptions)	Archaeology Department, University of Jordan
Dr. Mahmoud Abu Talib (Akkadian Language and Writing)	Archaeology Department, University of Jordan
Dr. Zahida Safar (Nabatean Art)	Jordan Central Bank Museum Curator
Dr. Mujahid Muheisen (Prehistory)	Institute of Archaeology and Anthropology, Yarmouk Univ.
Dr. Lutfi Khalil (Ancient Metallurgy)	Archaeology Department, University of Jordan
Dr. Zeidan Kafafi (Neolithic Period)	Institute of Archaeology and Anthropology, Yarmouk Univ.
Dr. Mohammad Najjar (Bronze Age Pottery)	Excavation Section, Department of Antiquities
Dr. Khairieh 'Amr (Analysis of Pottery Raw Materials)	Archaeological Researcher, Department of Antiquities
Dr. Wa'el er-Rashdan (Islamic Archaeology)	Islamic Archaeology Section, Department of Antiquities
Dr. Khaled Abu Ghanimeh (Prehistory)	Department of Antiquities
Dr. Khalaf Tarawneh (Islamic Coins)	National Museum, Department of Antiquities
Dr. Fawaz el-Khreishah (Semitic Inscriptions)	Institute of Archaeology and Anthropology, Yarmouk Univ.
Mr. Hufzi Haddad (Restoration)	Department of Antiquities

Ms. Ruba Kana'an
(Vernacular Architecture)

Cultural Resource Management Programme, ACOR

Ms. Leen Fakhoury
(Architectural Conservation)

Department of Architecture, University of Jordan

Mr. Ammar Khammash (Conservation
of Traditional Architecture)

Ministry of Tourism and Antiquities

Rami G. Khouri
(Author, publisher)

Al Kutba, Publishers

(2)遺跡に関する専門家

Dr. Ghazi Bisheh	Director General of the Dept. of Antiquities
Dr. Adnan Hadidi	National University, Former Director of Antiquities
Dr. Fawzi Zayadin	Technical Assistant Director
Mr. Feisal el-Qudha	Administrative Assistant Director
Mr. Hufzi Haddad	Head of the Preservation and Restoration Section
Dr. Hussein Qandil	Inspector, museum curator
Ms. Nazmieh Rida	Head of the Cultural Relations Section
Mr. Ibrahim Haj Hassan	Head of the Laboratory Section
Mr. Ahmed Odeh	Museum curator
Mr. Sultan Shreideh	Head of the Irbid Department of Antiq. office
Mr. Ali al-Sa'idi	Museum curator, Salt
Mr. Abdul Sami' Abu Dayyeh	Inspector of Greater Amman
Ms. Hanan el-Kurdi	Head of the Archives Section
Ms. Siham Balqar	Curator, Museum of Jordan Antiquities
Mr. Musa ez-Zayyat	Director, Museum of Jordan Antiquities
Mr. Ali Saleh	Inspector of Jerash
Mr. Sami er-Rabadi	Inspector of Ajloun
Mr. Hazem Ibrahim	Inspector of Madaba, Madaba Museum curator
Mr. Nabil Bqa'in	Inspector of Karak
Ms. Muna Zaghloul	Head of the Periodicals and Publications Section
Dr. Zahida Safar	Jordan Central Bank Museum curator
Ms. Khawla Qusous	Head of the Registration Section
Ms. A'ida Mohammad Amin	Jerash Museum curator
Mr. Mohamad Rsheidat	Inspector of Um Qeis, museum curator
Dr. Khairieh 'Amr	Archaeological researcher
Dr. Wa'el er-Rashdan	Head of the Islamic Archaeology Section
Dr. Mohammad Najjar	Head of Excavation Section
Dr. Khalaf Tarawneh	Coin specialist, Museum of Jordan Antiquities
Dr. Khaled Abu Ghanimeh	Prehistory specialist
Mr. Tayseer Ateyyat	Inspector
Mr. Ghassan er-Ramahi	Inspector of Madaba
Mr. Sa'ad Hadidi	Inspector of Salt
Mr. Emseitef Emseitef	Assistant inspector of Greater Amman
Mr. Musa Smadi	Inspector of Jerash
Mr. Nyazi esh-Shab'an	Inspector of Petra
Mr. Suleiman Farajat	Inspector of Petra
Ms. Qamar Fakhouri	Registration Centre
Mr. Hakem Mahamid	Inspector of Karak
Mr. Khaled el-Jbour	Inspector of Mafraq

Mr. Ibrahim Al-Zu'bi	Inspector of Ramtha
Mr. Mohamed Abu 'Ebeileh	Inspector of Ajloun
Mr. Wajih Karasneh	Um Qeis Museum curator
Ms. Iman 'Uweis	Jerash Museum curator
Ms. Hanan Azar	Archives
Ms. Rula Qusous	Registration and Research
Ms. Rawia Nabil	Antiquities Librarian
Ms. Iman el-Qudha	Folklore Museum curator
Ms. Nuha el-'Absi	Folklore Museum assistant curator

(3)遺跡関連プロジェクト名及び担当者 (1980-1991)

Name of Project and Director

Abila
(Dr. W. Harold Mare)

Abu Snessle
(Suzanne Kerner)

Amman Citadel
(Dr. Rudolph Dornemann)

Amman Citadel, Ajloun - Kifranja Survey
(Dr. Joseph Greene)

Aqaba-Ayla
(Dr. Donald Whitcomb)

Azraq
(Douglas Baird and Andrew Garrard)

Bab Dhra, Feifa, Wadi Khmeizir
(Dr. Walter Rast, Dr. R. Thomas Schaub)

Basta
(H.J. Nissen and Mujahed Muheisen)

Da'jania, Qasr Bshir, Lejjun
(Dr. Thomas Parker)

Deir Ain Abata
(Konstantine Politis)

Lehun
(Denyse Homes-Fredericq)

Humayma
(Dr. John Oleson)

Iraq Dub
(Ian Kuijt)

Jordan Valley survey, Khirbet Khilda
(Dr. James Sauer)

Katarat Samra
(Dr. Albert Leonard)

Karak, Shobak and Quweira Castles
(Ms. Robin Brown)

Khirbet Kursi
(Abdul Jalil Amr)

Khirbet Faris
(Jeremy Johns and Allison McQuitty)

Khirbet Iskander
(Dr. Suzanne Richard)

Moab Survey
(Prof. J. Maxwell Miller)

Name of Project and Director

Qanawat Firaum
(Thomas Weber)

Qasr Burqu
(Alison Betts)

Southern Jordan Deforestation Survey
(Patricia Fall)

Teleilat Ghasul
(Peta Seaton)

Tell Abu Hamid
(Zeidan Kafafi and Genevieve Dollfus)

Tell Abu Khreis
(Peter Fischer)

Tell Abu Sarbut
(Edward Lagroa)

Tell Hamam
(Kay Prag)

Tell Umeiri, Tell Hesban
(Dr. Lawrence Geraty)

Tell Sa'idiyeh
(Jonathan Tubb)

Tell Hajjat
(Mr. Steve Falconer and Dr. Bonnie Magness)

Tell Iktanu
(Kay Prag)

Tell Maqass
(Lutfi Khalil)

Tell Nimrin
(Dr. David McCreery and Prof. James Flanagan)

Temple of Hercules, Amman
(Mohammed Najjar)

Temple of Zeus, Jerash
(Jacques Seigne)

Tor Um Dai
(Kenneth Russell)

Umayyad Palace, Amman
(Antonio Almagro)

Um Jimal
(Dr. Bert de Vries)

Um Walid
(Jacques Bujard)

・野生生物

(1)植物相及び植生

ジョルダン国内

Prof. Dr. Subhi Qasim	Plant Protection
Prof. Dr. Dawud Al Eisawi	Classification and Protection
Dr. Kamal Tadrus	Ranges and Protection
Dr. Esam Shunaq	Flora Environment
Dr. Jamil Lahham	Classification
Dr. Ahmad El-Oqleh	Forests and Classification
Eng. Maher Abu Ja'far	Management of National Parks and Forests
Dr. Mahmoud Juneidi	Management of Waterfalls, Forests and Ranges
Dr. Saleh Share'	Forests
Mr. Shihadeh M. Azza	Planning and Park Management IUCN Regional Councillor

海 外

V. H. Heywood	IUCN, England
Fakhri A. Bazaz	Harvard Univ., USA
Jim Thorsell	IUCN, Switzerland (Protected Areas)
Jeff McNeely	IUCN, Switzerland (Bio-Diversity)

(2)動物相及び分布域

ジョルダン国内

Prof. Dr. Ahmad Ed-Disi	Vertebrates
Dr. Alia Hatoug	Mammalian Ecology
Dr. Ibrahim Abu Yaman	Insects
Mr. Anis Mouasher	Birds

海 外

D. Harrison	Mammalogist, England
B. Nelson	Ornithologist, England

(3)環境教育

Dr. Muhammad Sabarini	Yarmouk Univ., Education Department
Dr. Isam Shurnaqa	Yarmouk Univ., Science Dept

(4)研究論文・技術レポート

Noteworthy research and reference documents have been grouped. A complete record of individual documents is kept by the RSCN and the Strategy Secretariat, Department of Environment:

- Abu Ja'far, Maher and Muhammad Balqar. Paper entitled "An Introduction to Wildlife Management in Jordan". (Abu Ja'far, c/o the RSCN; Balqar, c/o Aqaba Region Authority).
- Abu Sammur, Hasan and Suleiman Hanbali. Paper entitled "Climatic Description and Geography of Jordan" in Arabic. (Abu Sammur c/o University of Jordan; Hanbali, c/o Department of Environment).
- Agricultural Economics and Planning Department. (August, 1989). Agricultural Statistical Indicators 1981-1988, in Arabic and English. Statistics Division, Ministry of Agriculture. Amman.
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- Ahmad, Abdullah A. (1989). "Nature Conservation", Chapter 5 in *Jordan Environmental Profile-Status and Abatement*. Amman, Jordan.
- Al Eisawi, Dawud, Ahmad Disi and Alia Hatoug. Study No. 9 entitled "Wildlife in Jordan", in Arabic. University of Jordan.
- Al Eisawi, Dawud. Study No. 8 entitled "Vegetation in Jordan". Faculty of Science, University of Jordan.
- Disi, Ahmad and Alia Hatoug. Study No. 6 entitled "The State of Wildlife Animals in Jordan". Faculty of Science, University of Jordan.
- Disi, Ahmad and Alia Hatoug. Study No. 7 entitled "Birds", in Arabic. Faculty of Science, University of Jordan.
- El-Azzeh, Shehadeh. Paper entitled "Investment Projects in Wildlife and Habitat", in Arabic. Ministry of Tourism and Antiquities.
- El-Azzeh, Shehadeh. Paper entitled "Medical Use of Wildlife Plants" in Arabic. Ministry of Tourism and Antiquities.
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- Jones, T.A. and J.E. Clarke. (1990). "Azraq Oasis, Jordan". RAMSAR Convention Monitoring Procedure (Report No. 16). IUCN/IWRD, Gland, Switzerland.
- List No. 1-A entitled "List of Publications", and list No. 1-B entitled "Major References Used".
- List No. 2 entitled "Titles of Noteworthy Research in the Field of Wildlife".
- Lists No. 3-A and 3-B entitled "Environmental Factors Affecting Snake Distribution in Jordan".
- List No. 4 entitled "Grazing Reserves Established by the Ministry of Agriculture".
- List No. 5 entitled "Grazing Reserves Established by the Co-operative Corp."
- Ministry of Municipal and Rural Affairs and the Environment. (1989). "Wildlife" (Chapter on Wildlife in Jordan, pages 183-197) in *State of the Environment (Arabic)*. Edited by Sufyan Tell and Yaser Sara. Amman, Jordan.
- RSCN. *The Birds of Jordan (1990)*. Amman, Jordan (with coloured prints; in Arabic).
- Tadrus, Kamal. Paper entitled "Vegetation in Jordan", in Arabic. Ministry of Agriculture.

(5)地図・図表

- Barham. (1986). Table, Animal Resources Development in Jordan.
- Eisawai. (1983). Map of Plant Groups in Jordan.
- Jordan Co-operative Organization. List of grazing reserves.
- Kalmbert. (1972). Map of Plants for Jordan.

関係機関

(1)政府機関

- a) Ministry of Tourism and Antiquities, Department of Antiquities, and its regional offices
(P.O. Box 88. Amman-Jordan. Tel: 644336 - 641275)
(P.O. Box 224. Amman-Jordan. Tel: 642311)
- b) Ministry of Information and Culture
(P.O. Box 6140. Amman-Jordan. Tel: 636391)
- c) Natural Resources Authority, Ministry of Energy and Mineral Resources
(P.O. Box 7. Amman-Jordan. Tel: 811300)
- d) University of Jordan Arts Faculty
(University of Jordan. Amman-Jordan. Tel: 843555)
Department of Archaeology
Department of Geography
Department of Human Studies
Engineering Faculty
Department of Architecture
- e) Yarmouk University
(P.O. Box 566. Irbid-Jordan. Tel: 02-271100)
Institute of Archaeology and Anthropology
Jordan Studies Centre
- f) Royal Jordanian Geographic Centre
(P.O. Box 20214. Amman-Jordan. Tel: 845188)
- g) Royal Scientific Society
(P.O. Box 925819. Amman-Jordan. Tel: 844701)

(2)N G O

- a) Royal Society for the Conservation of Nature
(P.O. Box 6354. Amman-Jordan. Tel: 811689)
- b) Friends of Archaeology Society
(P.O. Box 2440. Amman-Jordan. Tel: 659987)
- c) Friends of the Museum, Yarmouk University, Irbid
(P.O. Box 566. Irbid-Jordan. Tel: 02-271100)
- d) Petra National Trust
(P.O. Box 312. Amman, Jordan. Telex 21323. Tel: 659978)
- e) ACOR, the American Centre of Oriental Research
(P.O. Box 2476. Amman-Jordan. Tel: 846117)
- f) IFAPO, Institute Francais d'Archeologie du Proche Orient
(P.O. Box 374. Amman-Jordan. Tel: 611872)
- g) BIAAH, British Institute at Amman for Archaeology and History
(P.O. Box 952071. Amman-Jordan. Tel: 841317)
- h) German Protestant Institute for Archaeology
(P.O. Box 183. Amman-Jordan. Tel: 842924)
- i) Foreign archaeological missions through their cultural attaches.

b. 環境関連の諸基準

飲料水の水質基準

THE HASHEMITE KINGDOM OF JORDAN
JORDANIAN STANDARD SPECIFICATIONS
FOR
" DRINKING WATER "
NO. (286)

MINISTRY OF TRADE AND INDUSTRY
AMMAN - JORDAN

* TRANSLATED FROM ARABIC TO ENGLISH

BY - HANI AL KURDI

JANUARY, 93

SPECIFICATIONS

MICROBIOLOGICAL CHARACTERISTICS

- . The Most Probable Number (MPN) of coliform organisms (colon bacteria) should not exceed 2.2/100 ml. of the tested water when multiple tube method was used. The number should be zero when membrane filtration technique was used.
- . The Tested (100) ml. should be free from faecal coliform organisms.

BIOLOGICAL CHARACTERISTICS

- . Drinking Water must be free from the following :-

<u>Organism</u>	<u>Guide line - Value</u>
a. PROTOZOA	0
b. HELMINTHS (PATHOGENIC)	0
c. FREE LIVING ORGANISM	0

* PHYSICAL CHARACTERISTICS

Physical " Natural " characteristics should not exceed the limits shown in the following table :-

CHARACTERISTIC	LIMIT PERMITTED	MAX. ACCEPTABLE LIMIT IF NO OTHER SOURCE COULD BE AVAILABLE
. TASTE	ACCEPTABLE TO MOST CONSUMERS	—
. ODOUR	ACCEPTABLE TO MOST CONSUMERS	—
. COLOUR	10 UNITS "PLATINUM - COBALT STANDARD"	15 UNITS
. TURBIDITY	1 UNIT " JAKSON CANDLE TURBIDIMETER "	5 UNITS
. PH LEVEL	NOT LESS THAN 6.5 NOT MORE THAN 9.00	—
. TEMPERATURE	BETWEEN 8°C TO 25°C	—

* CHEMICAL CHARACTERISTICS

POISNESS MATERIALS

THE POISNESS MATERIAL IN WATER SHOULD NOT EXCEEDS THE LIMITS SHOWN BELOW :-

CNOSTITUENT	MAX. LIMIT mg/L	
LEAD "Pb"	0.05	
SELENIUM "Se"	0.01	
ARSENIC "As"	0.05	
CHROMIUM "Cr"	0.05	
CYANIDE "CN"	0.1	
CADMIUM "Cd"	0.005	
MERCURY "Hg"	0.001	
ANTIMONY "sb"	0.01	
SILVER "Ag"	0.01	

CONSTITUENTS OF HEALTH SIGNIFICANCE

THE CONSTITUENTS SHOULD NOT EXCEEDS THE LIMITS SHOWN BELOW

CONSTITUENTS	LIMIT PERMITTED (mg/L)	MAX. ACCEPTABLE LIMIT IF NO OTHER SOURCE COULD BE AVAILABLE (mg/L)
TOTAL DISSOLVED SOLIDS (TDS)	500	1500
TOTAL HARDNESS TH (Ca Co3)	100	500
DETERGENTS (ABS)	0.5	1.0
ALUMINIUM (AL)	0.2	0.3
IRON (FE)	0.3	1.0
MANGANESE (Mn)	0.1	0.2
COPPER (Cu)	1.0	1.5
ZINC (Zn)	5	15
SODIUM (Na)	200	400
NICKEL (Ni)	0.05	0.1
CHLORIDE (CL)	200	500
FLOURIDE (F)	1.0	1.5
SULFATE (SO)	200	500
NITRATE (NO ₃)	45	70

RADIOACTIVE MATERIALS

THE RADIOACTIVE MATERIALS SHOULD NOT EXCEED THE LIMITS SHOWN IN THE FOLLOWING TABLE, IN CASE IT EXCEEDS THE LIMITS, ANALYSIS BY SPECILAIZED BODY SHOULD BE DONE TO FIND THE RADIOACTIVE MATERIALS, AND ITS EFFECT ON HEALTH.

CONSTITUENTS	MAX. LIMIT
ALPHA EMITTERS	0.1 Bq/L (EXCEPT RADON)
BETA EMITTERS	1 Bq/L

ORGANIC IMPURITIES

THE ORGANIC IMPURITIES SHOULD NOT EXCEED THE LIMITS SHOWN IN THE FOLLOWING TABLE.

CONSTITUENTS	MAX. LIMIT PERMITTED mg/L
a. COLORINATED HYDROCARBONS	
ENDRIN	0.0002
LINDAIN	0.004
METHOXYCHLOR	0.1
TOXAPHENE	0.005
b. CLOROPHENOXY	
2,4 DICHLOROPHENOXY ACETIC ACID	0.1
2,4 - 5 TRICHLOROPHENOXY PROPIONIC ACID.	0.01

OTHER ORGANIC IMPURITIESS WHICH ARE NOT LISTED IN THE ABOVE TABLE SHOLD COMPLY WITH WORLD HEALTH ORGANOZATION GUIDELINES.

工業用水の水質基準

FACTORIES WASTEWATER EFFLUENT CHARACTERISTICS

CHARACTERISTICS	MINIMUM ALLOWABLE LIMIT "MILIGRAM / LITER"			
	RE-USE FOR IRRIGATION PURPOSES	RECHARGEING UNDERGROUND WATER	EFFLUENT DISCHARGE TO	
			SEA	RIVERS, WADISS & RESERVOIRS
BOD	—	50	—	50
COD	—	150	200	150
DISOLVED OXYGEN	1	1	5	1
TOTAL DISOLVED SOLIDS	2,000	1,500	—	3,000
SUSPENDED SOLIDS	100	—	—	50
PH	6.5-8.4	6.5-9.0	5.5-9.0	6.5-9.0
COLOUR	—	15	75	15
CHANGE IN TEMPRETURE	—	—	4	—
FAT AND OIL CONTENTS	5	—	10	15
VINYL	0.002	0.002	1	0.002
DETERGENTS (ABS)	—	15	—	25
NITRATE- (NITROGEN)	30	12	—	12
AMMONIA	5	5	12	5
TOTAL NITROGYN	50	—	125	—
PHOSPHATE	—	—	—	15
CHLORIDE	350	500	—	500
SULFATE	400	500	—	500
FLOURIDE	—	1.5	—	1.5
BI-CARBONATE	500	—	—	—
SODIUM	—	400	—	—
MAGNISUM	—	—	—	—
CALCIUM	—	—	—	—
SODIUM ABSORPTION %	9	—	—	—
ALUMINIUM	5	0.3	—	5
AYSEMIC	0.1	0.05	0.1	0.05
BORON	1	1	—	1
CHROMIUM	0.1	0.05	0.3	0.1
COPPER	0.2	2	0.1	2
IRON	5	1	2	1
MANGANESE	0.2	0.2	0.2	0.2
NICKEL	0.2	0.1	0.02	0.2
LEAD	1.0	0.1	0.1	0.1
SELENIUM	0.02	0.05	0.02	0.02
CADMIUM	0.01	0.02	0.07	0.01
ZINC	2	15	—	15
CYANIDO	0.1	0.1	1.0	0.1
MERCURRY	0.001	0.001	0.001	0.001
MOST PROBABLE NUMBER (MPN) OF COLIFORM ORGANISIOL (in100mm)	—	—	5,000	—
FAECAL COLIFORMS (in 100mm)	1,000	1,000	—	1,000
INTENSTINAL NEMATODES (NUMBER / LITER)	< 1	—	—	< 1

Aqaba coastal Resources Environmental Management Study in Jordanで提案されている
環境基準

・排水の基準

Parameter	Maximum effluent concentration	Minimum purification in treatment plant	
	Proposal (EC, 202)	Proposal (EC)	
Settleable matters	1 ml/l (-,5)	—	—
ECOD ₅	20 ml/l O ₂ /l (25,30)	90 %	(70-90)
Total suspe. solids	30 mg/l (35-60,30)	90 %	(70-90)
COD	50 mg O ₂ /l (125,100)	80 %	(75)
Total phosphorus	1 mg P/l (1-2,-)	90 %	(80)
Total nitrogen	10 mg N/l (10-15,-)	80 %	(70-80)

Table 5: Proposed wastewater effluent standards for discharges to the Gulf of Aqaba. Figures in parentheses are taken from EC directive and from Jordan specification no. 202 for industrial wastewater.

・海洋の水質

<u>Nutrients:</u>	<u>Concentrations:</u>
Inorganic Phosphate (PO ₄ -P)	0.25 mg/m ³
Ammonium (NH ₄)	0.65 mg/m ³
Nitrate-Nitrite (NO ₃ +NO ₂)	1.31 mg/m ³
<u>Suspended Sediments:</u>	
Suspended matter (SMP)	3.85 mg/l
Sediment deposition	30 mg/cm ² /d
Chlorophyll "a"	0.59 mg/m ³
Hydrocarbons	0.25 ppm
Cadmium	0.20 ppb
Surfactant	35 ppb
Pesticides	10 ppb
Antifouling agents (TBTO)	0.01 ppb

These tolerance levels proposed for the Great Barrier Reef may be rather high for Aqaba Gulf, which is an extremely oligotrophic, isolated water body.

参考として、グレートバリアリーフ (オーストラリア) の例を示す。

・大 気

Proposed Air Quality Standards.

Pollutant	Measuring Time	Ambient Microgram/m ³	C-value microgram/m ³
Sulphur dioxide (SO ₂)	1 hour	350	250
	24 hours	125	
	1 year	50	
Nitrogen dioxide (NO ₂)	1 hour	400	125
	24 hours	150	
	1 year	100	
Particulates (TSP)	1 hour	350	100
	24 hours	200	
	1 year	100	
Total fluorides (as F)	1 hour		2
Hydrogen Chloride (HCl)	1 hour		50
Hydrogen Sulphide (H ₂ S)	1 hour		1
Ammonia (NH ₃)	1 hour		300

・測定方法

Examples of Ambient Measurement Methods

Pollutant	Analysis Method	Equipment for Analysis	Sampling Equipment
Sulphur dioxide	Colourmetric	Spectrometric	Gas
Carbon monoxide	NDIR	NDIR Analyzer	CO Analyzer
Nitrogen	Colourmetric	Spectrophotometer	Gas Sampler
Oxidant as O ₃	Colourmetric	Spectrophotometer	Gas Sampler
Suspended Particulates	Gravimetric	Scale	Hi-Vol
Lead	- Gravimetric Scale	Scale	Hi-Vol
	- Destruction AA	AA	

Explanations :

NDIR = Non Dispersive Infrared

Hi-Vol = High Volume Sampler

AA = Atomic Absorption

c. 水質分析単価

水質分析単価表 (1993)

Royal Scientific Societyの水質分析の単価を以下に示す。

Water and Soil Division

Biological Analysis:

No.	Tests	Unit	Abbr.	Rate (JD/Test)
1	Total Heterotrophic Bacterial Count.....	CFU/ml	TIBC	16.00
2	Total Coliform Count (Presumptive).....	MPN/100ml	TCC	20.00
3	Total Coliform Count (Confirmed).....	MPN/100ml	TCC	30.00
4	Total Fecal Coliform Count.....	MPN/100ml	TFCC	20.00
5	Chlorophyll (a).....	ug/L	Chl.a	18.00
6	Algae Type.....	-	AT	17.00
7	Algae Type & Count.....	Cells/ml or Units/ml	AT&C	20.00
8	Pathogenic Bacteria, each.....	CFU/100ml	P.B	27.00
9	Nonpathodes.....	E/L	N	33.00
10	Fungus.....	(+ve) or (-ve)	FG	20.00

Royal Scientific Society
Environmental Research Centre
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Physical & Chemical Analysis:

No.	Tests	Unit	Abbr.	Rate (JD/Test)	No.	Tests	Unit	Abbr.	Rate (JD/Test)
1	Log. Hydrogen Concentration.....	Sp	pH	1.50	28	Total phosphorus.....	mg/L	T-P	15.00
2	Electrical Conductivity.....	us/cm	EC	1.50	29	Cyanide (Fiber-D).....	mg/L	CN	9.00
3	Temperature.....	°C	T	1.00	30	Cyanide (Distillation).....	mg/L	CN-Dist	30.00
4	Dissolved Oxygen (Probe Analysis).....	mg/L	DO	3.00	31	Chemical Oxygen Demand.....	mg/L	COD	20.00
5	Dissolved Oxygen (By Titration).....	mg/L	DO	7.50	32	Biochemical Oxygen Demand.....	mg/L	BOD	22.50
6	Carbon Dioxide.....	mg/L	CO2	7.50	33	Permanganate Value.....	mg/L	PV	10.00
7	Bicarbonate.....	mg/L	HCO3	7.50	34	Methylene Blue Active Substances Detergents.....	mg/L	MBAS	15.00
8	Chlorine.....	mg/L	Cl2	3.00	35	Fat Oil and Grease (Gravimetry).....	mg/L	FOG	15.00
9	Hydrogen Sulfide (Colorimetry).....	mg/L	H2S	3.00	36	Fluoride.....	mg/L	F	7.50
10	Color.....	PCU	Col.	3.00	37	Chloride.....	mg/L	Cl	7.50
11	Turbidity.....	NTU	Turb.	3.00	38	Bromide.....	mg/L	Br	12.50
12	Acidity.....	mg/L	Acid.	7.50	39	Sulfate.....	mg/L	SO4	7.50
13	Alkalinity.....	mg/L	Alk.	7.50	40	Boron.....	mg/L	B	12.00
SOLIDS:					41	Sample Digestion for metal analysis (For one sample).....	-	SD	25.00
14	Total Dissolved Solids.....	mg/L	TDS	8.00	42	Metals Analysis (By AAS), each.....	mg/L	M	8.00
15	Total Suspended Solids.....	mg/L	TSS	8.00	43	Total Organic Halogens (By Coulomat).....	ug/L	TOX	30.00
16	Total Volatile Solids.....	mg/L	TVS	8.00	44	Polychlorinated Biphenyls in transformer oil.....	ug/L	PCBS	36.00
17	Total Volatile Suspended Solids.....	mg/L	TVSS	8.00	45	Phenols (Total by Colorimetry).....	ug/L	Ph.	20.00
18	Total Fixed Solids.....	mg/L	TFS	8.00	46	Phenols (10 Compounds by GC/FID).....	ug/L	Ph.	70.00
19	Total Fixed Suspended Solids.....	mg/L	TFSS	8.00	47	Trihalomethanes (GC/ECD).....	ug/L	THMs	50.00
20	Calcium.....	mg/L	Ca	7.50	48	Chlorinated Pesticides (11 Compounds by GC/ECD).....	ug/L	CP	130.00
21	Magnesium.....	mg/L	Mg	7.50	49	Polycyclic Aromatic Hydrocarbons (16 Compounds by GC/FID).....	ug/L	PAHs	100.00
22	Total Hardness (as CaCO3).....	mg/L	TH	7.50	50	Petroleum Aliphatics (total and representative individual compounds by GC/FID).....	ug/L	PATC	100.00
23	Ammonia.....	mg/L	NH3	7.50	51	Distilled Water (DW).....	-	DW	1.00
24	Nitrite.....	mg/L	NO2	7.50	52	Deionized Water (DIW).....	-	DIW	2.00
25	Nitrate.....	mg/L	NO3	9.00					
26	Total Nitrogen (Kjeldahl).....	mg/L	T-K-N	24.00					
27	Phosphate.....	mg/L	PO4	7.50					

