

Aqaba Earth / 1

PROG/2008/ 256

18 September 2008

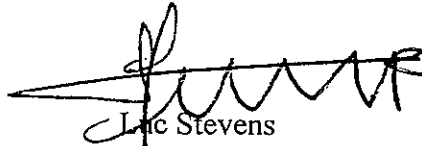
Excellency,

Subject: 00058381- Support to Building National Capacities for Earthquake Risk Reduction at Aqaba Special Economic Zone in Jordan

I have the honor to write in reference to your letter no. 5/3/1/7338 dated 31 August 2008 and return herewith, for your records, two duly signed and sealed copies of the project document "*Support to Building National Capacities for Earthquake Risk Reduction at Aqaba Special Economic Zone in Jordan*".

I would greatly appreciate your assistance in forwarding one original copy of the Project Document to the Aqaba Special Economic Zone Authority (ASEZA) and request them to assign a focal point in order to commence the implementation of project's activities.

Accept, Your Excellency, the assurances of my highest considerations.



Luc Stevens
UN Resident Coordinator
UNDP Resident Representative

H.E. Ms. Suhair Al-Ali
Minister of Planning and International Cooperation
Ministry of Planning and International Cooperation
Amman – Jordan

Attachments



جائزة الملك عبد الله الثاني
تميز الأداء الحكومي والشفافية
الدورة الثالثة (٢٠٠٦-٢٠٠٧)
الجائزة الذهبية

المملكة الأردنية الهاشمية

Ref. No. 5/3/1/7338
Date: 31/8/2008

الرقم
التاريخ
الموافق

H.E. Mr. Luc Stevens
UNDP Resident Representative
United Nations Development Program
Amman

Dear Excellency,

In reference to your letter dated 22 July 2008, please find attached herewith three duly signed copies of the project document for the "Support to Building National Capacities for Earthquake Risk Reduction at Aqaba Special Economic Zone in Jordan" project.

Accordingly, I would highly appreciate it, if you could counter-sign the said project documents and return two copies to the Ministry of Planning and International Cooperation, in order to share them with the Aqaba Special Economic Zone Authority.

Please accept my high esteem and consideration.

- 1 SEP 2008
M. Shraideh PM

UNDP - JORDAN		
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STAFF	ACTION	INFO
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Sincerely,

N. Shraideh
Suhair Al -Ali
Minister of Planning and
International Cooperation

Nasser Shraideh
Secretary General



Country: Jordan

Project Document

Project Title: Support to Building National Capacities for Earthquake Risk Reduction at Aqaba Special Economic Zone in Jordan

UNDAF Outcome(s): Enhanced capacity of the Government and CSOs to prevent, respond to and mitigate natural and man-made disasters

Expected CP Outcome(s): Enhanced capacity of the Government and CSOs to prevent, respond to and mitigate natural disasters

Expected CPAP Output(s): Natural and man-made disaster management plans with a focus on plans for the municipalities of Amman, Zarqa and Aqaba put in place

Implementing partner: Aqaba Special Economic Zone Authority (ASEZA)

Responsible Parties: Ministry of Planning and International Cooperation (MoPIC)

The project aims at conducting an earthquake risk assessment (ERA) for the city of Aqaba. It is anticipated that the outcomes of this project would provide the necessary tools for both legislators and scientists, to quantify the level of seismic risk affecting the city. Additionally, the results of the proposed project will develop a master plan for earthquake risk management which in turn will provide a framework for earthquake risk reduction.

Programme Period: 2008- 2011
 CPAP Programme Component: Output 2.3.1
 Project Title: Support to Building National Capacities for Earthquake Risk Reduction at Aqaba Special Economic Zone in Jordan
 Atlas Award ID: 00048311
 Start date: June 2008
 End Date: June 2010
 PAC Meeting Date: 12 May 2008

Estimated annualized budget: 280,000 USD

Total resources required: 560,000 USD

Total allocated resources: _____

- UNDP/TRAC 50,000 USD
- Other:
 - SDC 160,000 USD
 - UNDP/ BCPR 250,000 USD
 - ASEZA 100,000 USD

Unfunded budget: _____

In-kind Contributions _____

Agreed by (ASEZA- Implementing Partner): _____

Agreed by UNDP: _____



LIST OF ABBREVIATIONS:

APR	Annual Project Review Report
ASEZA	Aqaba Special Economic Zone Authority
AWP	Annual Work Plan
BCPR	Bureau for Crisis Prevention and Recovery
CBOs	Community Based Organizations
CP	Country Programme
DRMMP	Disaster Risk Management Master Plan
DRR	Disaster Risk Reduction
DSFS	Dead Sea Fault System
ERA	Earthquake Risk Assessment
FG	Focus Group
GIS	Geographical Information System
GMS	General Management Services
JCD	Jordanian Civil Defense
KM	Kilometer
MoPIC	Ministry of Planning and International Cooperation
NGOs	Non-governmental Organizations
NPM	National Project Manager
NRA	Natural Resources Authority
PAC	Project Appraisal Committee
PTC	Project Technical Committee
PB	Project Board
QPR	Quarterly Progress Report
RSS	Royal Scientific Society
SBAA	Standard Basic Assistance Agreement
SDC	Swiss Agency for Development and Cooperation
ToRs	Terms of References
TPR	Tripartite Review Meeting
UN	United Nations
UNDP	United Nations Development Programme
UNDP CO	United Nations Development Programme – Country Office

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I. ANNUAL WORK PLAN BUDGET SHEET

Year: 2008

EXPECTED OUTPUTS <small>And baseline, associated indicators & annual targets</small>	PLANNED ACTIVITIES <small>List activity results and associated actions</small>	TIMEFRAME				RESPONSIBLE PARTY	Funding Source	PLANNED BUDGET	
		Q1	Q2	Q3	Q4			Budget Description	Amount
Output 1									
Natural and man-made disaster management plans with a focus for the seismically active areas put in place	<p>1. Review the Disaster Risk Management legislation</p> <ul style="list-style-type: none"> - Developed legislation and laws for Aqaba city. 				ASEZA	GoJ	National Consultant GMS	7,600 400	
	<p>2. Developed risk reduction profile for Aqaba city</p> <ul style="list-style-type: none"> - Comprehensive summary of the essential data & statistics of the city. 				ASEZA	GoJ	National Consultant GMS	4,750 250	
	<p>3. Seismic hazard assessment for Aqaba city</p> <ul style="list-style-type: none"> - Geological and geophysical investigations augmenting the available database 				RSS ASEZA	BCPR GoJ	Contractual Services National Consultant GMS	22,000 11,400 600	
	<ul style="list-style-type: none"> - Earthquake scenarios (magnitude and location of major and moderate earthquakes). 				RSS ASEZA	BCPR GoJ	Contractual Services National Consultant GMS	11,000 4,750 250	
	<ul style="list-style-type: none"> - Workshop. - GMS 				ASEZA	GoJ	National Consultant	0	
Indicators: National emergency preparedness and mitigation plan for Aqaba formulated									
Targets: Aqaba urban development plans including disaster risk management plan.									
Earthquake preparedness and disaster mitigation measures for Aqaba City drafted and submitted to the government					RSS ASEZA	BCPR GoJ	Contractual Services National Consultant GMS	10,000 3,800 200	
Number of people from CSO, academia and Government training trained in disaster risk management.					RSS ASEZA	BCPR GoJ	Contractual Services National Consultant GMS	6,000 1,900 100	
					RSS ASEZA	BCPR	Contractual Services	0	
					RSS ASEZA	BCPR	Contractual Services	0	
					ASEZA	GoJ	National Consultant	0	

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5. Quantification of the earthquake expected damage and losses based on earthquake scenarios										
Related CP outcome: Enhanced capacity of Government and CSOs to prevent, respond to and mitigate natural and man-made disasters	- Earthquake expected damage and losses for a major earthquake					RSS ASEZA	SDC GoJ	Contractual Services National Consultant	0	
	- Earthquake expected damage and losses for a moderate earthquake.					RSS ASEZA	SDC GoJ	Contractual Services National Consultant	0	
6. Development of a disaster risk management master plan for Aqaba city (DRMMP)										
	- Proposed Disaster Risk Management Master Plan for Aqaba city					RSS ASEZA	UNDP GoJ	Contractual Services National Consultant	0	
	- Workshop and In-country consultations					ASEZA	BCPR	National Consultant	30,000	
7. Project Management and Monitoring										
	- Project Management team, offices					ASEZA	SDC	Local consultants GMS	25,000 2,000	
	- Audit, Monitoring and Evaluation					ASEZA	SDC	Local Consultants	2600 400	
TOTAL										145,000

Annual Work Plan Budget Sheet

Year 2009:

Handwritten signature and date: 11/11/09

EXPECTED OUTPUTS And baseline, associated indicators & annual targets	PLANNED ACTIVITIES List activity results and associated actions	TIMEFRAME				RESPONSIBLE PARTY	PLANNED BUDGET		
		Q1	Q2	Q3	Q4		Funding Source	Amount	
Output 1 Natural and man-made disaster management plans with a focus for the seismically active areas put in place	1. Review the Disaster Risk Management legislation - Developed legislation and laws for Aqaba city.					ASEZA	GoJ	National Consultant	0
Baseline: Jordan is located in high risk area for earthquakes. No strategies for disaster risk management plans are in place.	2. Developed risk reduction profile for Aqaba city - Comprehensive summary of the essential data & statistics of the city.					ASEZA	GoJ	National Consultant	0
Indicators: National emergency preparedness and mitigation plan formulated	3. Seismic hazard assessment for Aqaba city - Geological and geophysical investigations augmenting the available database - Earthquake scenarios (magnitude and location of major and moderate earthquakes). - Workshop.					RSS ASEZA	BCPR GoJ	Contractual Services National Consultant	0 0
Targets: Number of urban development plans including disaster risk management plans. Earthquake preparedness and disaster mitigation measures for the most seismically active areas drafted and submitted to the government Number of people from CSO, academia and Government training trained in disaster risk management.	4. Vulnerability functions for buildings, lifelines and infrastructure adapted for the specific types present in Aqaba - Inventory of buildings in GIS form. - Inventory of lifelines and infrastructure in GIS form. - Sets of vulnerability functions for the different categories of buildings, infrastructure and socio-economic conditions. - Sets of vulnerability functions for the different social vulnerability categories (sex disaggregated). - Workshop.					RSS ASEZA	BCPR GoJ	Contractual Services National Consultant GMS	22,000 9,500 500
Related CP outcome: Enhanced capacity of Government and CSOs to prevent, respond to and mitigate natural and man-made disasters.	5. Quantification of the earthquake expected damage and losses based on earthquake scenarios - Earthquake expected damage and losses for a major earthquake					RSS ASEZA	UNDP BCPR GoJ	Contractual Services National Consultant GMS	7,600 400
						RSS ASEZA	SDC GoJ	Contractual Services GMS National Consultant GMS	22,500 2,500 3,375 125

	- Earthquake expected damage and losses for a moderate earthquake.			RSS ASEZA	SCD GoJ	Contractual Services GMS National Consultant GMS	18,000 2,000 2,375 125
6. Development of a disaster risk management master plan for Aqaba city (DRMMP)							
	- Proposed Disaster Risk Management Master Plan for Aqaba city			RSS ASEZA	UNDP GoJ	Contractual Services National Consultant	0 0
	- Workshop and In- country consultations			ASEZA	GoJ	National Consultant	0
7. Project Management							
	- Project Management team and offices			ASEZA	SDC	Local Consultant GMS	45,500 5,500
	- Audit, Monitoring and Evaluation			ASEZA	SDC	Local Consultant GMS	3,200 800
TOTAL							332,000

Annual Work Plan Budget Sheet

Year 2010:



EXPECTED OUTPUTS And baseline, associated indicators & annual targets	PLANNED ACTIVITIES List activity results and associated actions	TIMEFRAME				RESPONSIBLE PARTY	PLANNED BUDGET		
		Q1	Q2	Q3	Q4		Funding Source	Amount	
Output 1 Natural and man-made disaster management plans with a focus for the seismically active areas put in place	<p>1. Review the Disaster Risk Management legislation</p> <ul style="list-style-type: none"> - Developed legislation and laws for Aqaba city. <p>2. Developed risk reduction profile for Aqaba city</p> <ul style="list-style-type: none"> - Comprehensive summary of the essential data & statistics of the city. <p>3. Seismic hazard assessment for Aqaba city</p> <ul style="list-style-type: none"> - Geological and geophysical investigations augmenting the available database - Earthquake scenarios (magnitude and location of major and moderate earthquakes). - Workshop. 					ASEZA	GoJ	National Consultant	0
<p>Baseline: Jordan is located in high risk area for earthquakes. No strategies for disaster risk management plans are in place.</p> <p>Indicators: National emergency preparedness and mitigation plan formulated</p> <p>Targets: Number of urban development plans including disaster risk management plans.</p> <p>Earthquake preparedness and disaster mitigation measures for the most seismically active areas drafted and submitted to the government</p> <p>Number of people from CSO, academia and Government training trained in disaster risk management.</p> <p>Related CP outcome: Enhanced capacity of Government and CSOs to prevent, respond to and mitigate natural and man-made disasters.</p>						RSS ASEZA	BCPR GoJ	Contractual Services National Consultant	0 0
						RSS ASEZA	BCPR GoJ	Contractual Services National Consultant	0 0
						RSS ASEZA	UNDP	Contractual Services	0
						RSS ASEZA	BCPR	Contractual Services	0
						ASEZA	GoJ	National Consultant	0
5. Quantification of the earthquake expected damage and losses based on earthquake scenarios									
						RSS ASEZA	SDC GoJ	Contractual Services National Consultant	0 0



0

	- Earthquake expected damage and losses for a moderate earthquake.				RSS ASEZA	SCD GoJ	Contractual Services National Consultant	0 0
	6. Development of a disaster risk management master plan for Aqaba city (DRMMIP)							
	- Proposed Disaster Risk Management Master Plan for Aqaba city	█	█		RSS ASEZA	BCPR GoJ	Contractual Services National Consultant GMS	20,000 4,750 250
	- Workshop and In- country consultations	█	█		ASEZA	GoJ	National Consultant GMS	7,600 400
	7. Project Management							
	- Project management team and offices	█	█		ASEZA	SDC BCPR	Local Consultant GMS	25,000 3,000 20,000
	- Audit, Monitoring and Evaluation	█	█		ASEZA	SDC	Local Consultant GMS	1400 600
TOTAL								83,000

II. MANAGEMENT ARRANGEMENTS

The project will follow the modality of National execution and the Executing Agency will be the Aqaba Special Economic Zone Authority (ASEZA). ASEZA has the necessary experience, is adequately staffed, and has sound financial status; the partnership with the RSS was justified because of the technical nature of the project. ASEZA has experience working with donors and has the necessary experience to work with the Research Institute in Jordan (see annex 1 for more details). A project Cooperation agreement will be signed between UNDP and ASEZA. The Ministry of Planning and International Cooperation in its role as Government Coordinating Authority will be responsible for the supervision of the Executing Agency's performance, assessment of progress, technical quality and achievement of objectives. While the day to day responsibility for the project lies with the executing agency, the Government Coordinating Authority retains ultimate responsibility on behalf of the Government.

ASEZA/ Infrastructure Commission will be responsible for the planning and overall management of project activities, reporting, accounting, monitoring and evaluation of the project. It will be accountable to the government coordinating authority and to UNDP for the production of outputs, the achievement of project objectives and the use of project resources. UNDP will also be responsible for the recruitment, contracting and supervision of Project Staff in coordination with ASEZA and following competitive recruitment processes. The recruitment will take place in the first month of project implementation as per the letter of agreement between UNDP and ASEZA for the provision of support services (annex 2). The project team will consist of the following:

- Project Manager
- Project admin/finance Assistant

A Project Board will be established to oversee the implementation of the project. It is the group responsible for making on a consensus basis management decisions for the project when guidance is required by the Project Manager. The Project Board will consist of representatives from the Ministry of Planning and International Cooperation, ASEZA, and UNDP. The Project Board should meet once every four months or as necessary when raised by the Project Manager (refer to annex 3 for TOR). The Project board is consulted by the Project manager for decision when Project Manager tolerances have been exceeded.

A Project Technical Committee (PTC) will be established to oversee the implementation of the project, and will comprise of the National Project Manager, UNDP, MoPIC, and ASEZA. The Project technical Committee members should meet once every four months or as the needs of the project, Annex 4 presents the full terms of reference and membership of the Project technical Committee. Inter-sectoral and inter-institutional Focus Groups (FG) will also be established and include technical representatives of the ASEZA, UNDP, RSS and from national government institutions, selected experts from technical agencies and academia, and advisers from UNDP and international partners. The focus group will meet according to the project's need and will have a clear responsibility (Annex 5 for TORs). All focus groups should meet together, as the Project Technical Committee (PTC), once per year to discuss the overall progress of the project and to review and approve the annual work-plan.

The Project Assurance role supports the Project Board by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed, the respective UNDP Programme Analyst holds the Project Assurance role for the UNDP Board member. The Board will at its discretion delegate this role as they see is fit.

The Project Manager has the authority to run the project on a day-to-day basis on behalf of the Project Board within the constraints laid down by the Project Board. The Project Manager is responsible for day-to-day management and decision-making for the project. His/her prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost (Annex 6).

The Royal Scientific Society (RSS), a not-for-profit scientific organization specializing in conducting scientific and technological research, testing and quality control, and development work related to the development process in Jordan, will provide technical support and scientific assistance to the project. RSS has undertaken similar projects in the Aqaba Special Economic Zone Authority (ASEZA). RSS has prepared seismic hazard maps of spectral acceleration for Jordan and Response spectra for different soil conditions, which will be included in future Jordanian building codes of practice, and a microzonation seismic hazard map of spectral acceleration for Aqaba City. Additionally, RSS has appraised the seismic vulnerability of buildings in Jordan and the current local construction practice, (refer to Annex 7). Through focus groups discussion, this project will engage the communities in disaster risk reduction by enhancing their knowledge of the risk parameter and the options for reducing this risk, building institutional strength and capabilities and developing a coalition of knowledgeable stakeholders whose collective contribution results in a safer community and environment.

RSS will provide its technical support to the national agencies in providing guidance and assistance for the undertaking of outputs detailed herein. RSS will work in close cooperation with ASEZA, the national and local agencies, the UNDP Country Office in transferring the knowledge to these institutions and to create mechanisms for sustainable action in the future (see annex 8). UNDP will sign a contract with RSS to cover the proposed technical support.

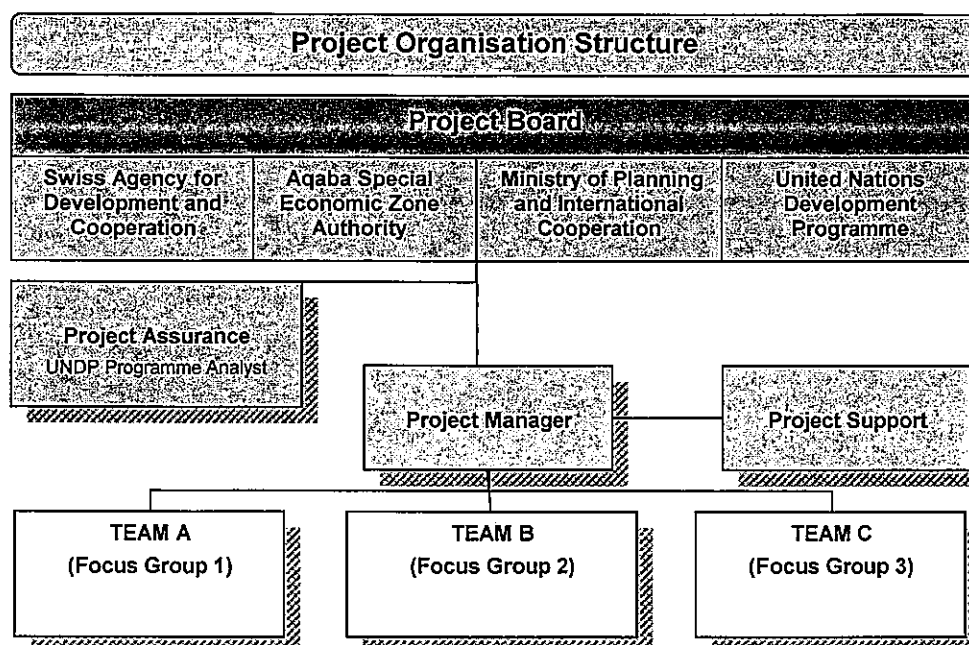
The Aqaba Special Economic Zone Authority (ASEZA) will be responsible for the planning and overall management of project activities, reporting, accounting, monitoring and evaluation of the project, supervision of the implementing partner and for the management and audit of the use of project resources. It will be accountable to the government coordinating authority (i.e. Ministry of Planning and International Cooperation) and to UNDP for the production of outputs, the achievement of project objectives and the use of project resources. It will facilitate dialogue and networking between the partners and utilize relevant expertise to support the project. UNDP will also be responsible for the recruitment and contracting of project staff in coordination with ASEZA.

ASEZA is a strategic implementation partner, offering the use of the necessary facilities, equipment, and services available at Aqaba in support of the implementation of the project activities. Additionally, the ASEZA trainers will also work closely with the project team to provide further technical support as needed throughout the project as well as linking the project beneficiaries to other services provided through the ASEZA.

ASEZA will provide the following areas of support to the project:

- Funding for the project (US \$ 100,000) in order to support the successful implementation.
- Exposure for the project - supporting events, advocating for the projects, and creating linkages with partners, donors, and other initiatives.
- Promoting and facilitating linkages with relevant governmental and non-governmental initiatives.
- Facilitating partnerships, coordinating roles, and mobilizing resources.

The above project management structure can be illustrated as follows:



The project will be implemented over 24 months with a total budget of US \$ (560,000) UNDP will provide \$ US 50,000 from its own TRAC resources, SDC will provide US \$ 160,000 and ASEZA will provide US \$ 100,000, UNDP/BCPR will provide \$ US 250,000.

UNDP will assist in its ability to build partnerships, especially with the SDC, coordinate between the various parties involved, obtain knowledge from global sources and experiences, and assist with fund raising efforts. UNDP will be the budget holder under the National Execution modality and will provide training to the Project Staff if needed on the execution modality. UNDP will charge 5% on the management of the government cost share contribution (annex 9) and 10% on the management of the SDC cost share contribution (General Management Services, GMS), annex 10. Financial advances will be transferred to the project on a quarterly basis upon request from the Project Manager, in accordance with Article VII of the Project Cooperation Agreement. The project must open a separate bank account in order to receive and disburse the funds transferred from UNDP.

Other Project Partners and their Roles

Swiss Agency for Development and Cooperation (SDC):

SDC currently is supporting a DRR program for the whole Region (Jordan, Syria and Lebanon). The overall goal of the programme is a contribution to ensure safe life and sustainable livelihood by minimizing the effects of natural disasters through the appropriate use of natural resources, a safe environment and improved coping mechanisms, thus contributing to poverty reduction and sustainable development in the region.

Four strategic objectives on capacity building, public awareness rising, establishing a policy dialogue on DRR as well a regional mechanism for knowledge exchange are defined at outcome level, based on several internal and external context and need assessments.

Among the projects in this program is a project for Seismic hazard mitigation in Jordan with the Royal Scientific Society, the project which meets the strategic objectives of the DRR program aims mainly to prepare seismic hazard maps for Jordan and Response spectra for different soil conditions. Furthermore, it will produce a micro-zonation seismic hazard map of spectral acceleration for Aqaba City which will be the base for the risk assessment project of the city. As a continuation of the ongoing project with RSS, SDC decided to contribute financially in

supporting the risk assessment project for the Aqaba City sharing this support with UNDP and other parties. SDC will follow up the progress of this project in the monitoring committee and ensure that the project will reach its goals at the end.

The Bureau for Crisis Prevention and Recovery (BCPR)

The Bureau for Crisis Prevention and Recovery (BCPR) is one of nine bureaux of the United Nations Development Programme (UNDP). BCPR is also the practice leader for crisis prevention and recovery within UNDP. A repository for tools, methods, and experience, BCPR advises UNDP Senior Management and supports UNDP Country Offices and Regional Bureaux on issues related to crisis prevention and recovery, natural disaster risk reduction and recovery, and cross-cutting issues such as early recovery and gender equality.

An advocate for crisis sensitivity within UNDP, BCPR works to ensure that UNDP's long-term development policies and programmes incorporate opportunities for disaster reduction.

Most importantly, BCPR provides technical expertise and funding to UNDP Country Offices that undertake programmes in conjunction with national government partners.

Country Projects constitute the majority of activities funded from BCPR's portion of the UNDP Core Budget and from the CPR TTF. Country Projects are originated by UNDP Country Offices with technical support and guidance provided by BCPR. These projects are formulated in close collaboration with national governments to address specific needs.

Deliverables Description:

Project objective and outcome:

The proposed project aims at carrying an integrated earthquake risk assessment for the city of Aqaba and thereby providing a tool for earthquake risk reduction in the region.

Deliverables

The projects deliverables are:

- New geological maps with active faulting systems
- Inventory of buildings, lifelines and infrastructure for the study area in GIS format.
- Sets of vulnerability functions for buildings, lifelines and infrastructure adapted for the specific types present in Aqaba.
- Sets of vulnerability functions for socio-economic indicators.
- Technical reports quantifying the earthquake expected damage and losses based on relevant earthquake scenarios. The reports will also include recommendations for earthquake risk mitigation strategies as well as cost-benefit analysis of earthquake resistant design in conformance with the stipulations of the national seismic code.
- Development of a Disaster Risk Management Master Plan (DRMMP) for Aqaba city.
- Three workshops, with full participation of Women and Youth, with the aim of dissemination of the acquired knowledge to public and policy makers.

Expected Results/outputs:

Output 1.1: Review the Legislation

The aim is to develop an understanding of current institutional mechanisms, legal and administrative authority and responsibility, which will result in an improved understanding of the structures and institutions involved in disaster management functions within the national institutions and ASEZA, their levels of responsibility and authority, and their inter-relationships. Also it will develop an understanding of the organizational and institutional strengths and weaknesses, and will identify the gaps in the planning and delivery of disaster management functions within the local government and local institutions.

This process will also develop a platform for facilitating stakeholders' participation in disaster reduction decision-making and practice at all levels. This platform will form the basis for the development of a coordination mechanism for inter-sectoral integration and broad stakeholders' consultation. Ultimately, these mechanisms will provide the necessary administrative, political, legal and technical power to support the implementation of a citywide Disaster Risk Management Master Plan. The mechanism should be supported and sustained by an inter-sectoral, inter-institutional focus group composed of all the stakeholders of the disaster management process including academia, CBOs women Organisations, business community, CBOs, and government institutions.

Indicative Activities:

- Organise consultation process involving all stake holders including women groups over legislative and institutional systems for Disaster Risk Reduction
- Developed legislation and laws for Aqaba city.

Output 1.2 Development of Risk Reduction Geo- Referenced Profile for Aqaba City

This output aims to establish a document which will represent a comprehensive summary of the essential data and statistics of the city. It will explain the disaster management structure of the city in the context of the national institutional and organizational arrangements. It will discuss the different hazard and vulnerability parameters. The risk profile will serve as a consensus reference document for practitioners, managers and policy makers, and will provide a benchmark for measuring progress in the future. The development of the document will also be an opportunity for consultation with stakeholders and for developing the channel of communication that would provide the basis for consensus and agreements on proposed organizational and institutional improvements to improve disaster risk management practices in the city and the country.

Indicative Activities:

- Comprehensive summary of the essential data & statistics including population data disaggregated by sex and age of the city.

Output 1.3: Seismic Hazard Assessment for Aqaba City

The results of the Aqaba microzonation study, which was carried out by the Building Research Center of the Royal Scientific Society with the funding of the Swiss Agency for Development and Cooperation (SDC), will be used to determine the possible earthquake scenarios for the risk assessment. The Aqaba micro-zonation study resulted in the following:

- Geological maps with active faulting systems (GIS format)
- Maps showing geotechnical information and soil classification (GIS format)
- Seismic hazard maps with spectral acceleration values at the surface, taking into consideration local site effects.

It is believed that further information is required regarding the segmentation of the main Dead Sea Transform Fault as well as information on the length of active faults in Aqaba. Available geological and geophysical data will be augmented through further investigation and data collection to identify and characterize the relevant seismic sources. The geological maps developed in the aforementioned project (microzonation of Aqaba) will be revised based on the acquired information.

This activity will result in a thorough characterization of the seismic hazard in Aqaba as related to direct effects of earthquakes. This activity would serve as the basis to identify possible earthquake scenarios that will be used in later activities (i.e., to run the earthquake scenarios and determine human and monetary losses).

This output would also include dissemination of the acquired knowledge to public and policy makers: Three workshops, with the aim of dissemination of the acquired knowledge will be held within the project duration. The workshops, specifically the one held towards the completion of the project, will also propose risk reduction strategies that will be based on the outcomes of the suggested project.

The intended workshops would serve as a major tool in spreading not only the acquired knowledge, but also the necessary awareness on the level of seismic threat and seismic risk within the study area and the variety of measures that can be implemented to reduce the earthquake risk to acceptable levels. The targeted audience would include decision-makers, policymakers as well as the engineering practitioners and members of the various community sectors that are expected to take part in the development of the Aqaba free economic zone. The first two workshops will be directed mostly towards the people working in the field of earthquake risk reduction, thereby allowing for better exchange of information and realization of needs, which in turn may affect the project's work plan.

Indicative Activities:

- Geological and geophysical investigations augmenting the available database.
- Earthquake scenarios (magnitude and location of major and moderate earthquakes).
- Workshop.

Output 1.4: Vulnerability Functions for Socio economic parameters (including Vulnerable Groups, women and youth) and Physical parameters (Buildings, Lifelines and Infrastructure) Adapted for the Specific Types Present in Aqaba.

An inventory of social (vulnerable groups; women, youth) as well as the physical functions (residential, commercial, hospitals and schools) and infrastructure, i.e. the various components of the built environment in Aqaba will be developed. Each of these components will be divided into a number of specific categories and vulnerability functions will be developed or adapted from the literature for each of these categories. Additionally, the results of the structural part of the study conducted by the Building Research Center of the Royal Scientific Society with funding of the Swiss Agency for the Development and Cooperation (SDC) regarding the traditional building system in Jordan, mainly stone masonry will be used.

The inventory of the built environment will be developed through a geographical information system which will allow for easy sharing of the information with other institutions or individuals carrying out risk assessment analyses.

Indicative Activities:

- Inventory of Buildings (GIS format).
- Inventory of lifelines and infrastructure (GIS format).
- Sets of gender sensitive social vulnerability functions in the study area
- Sets of physical vulnerability (for buildings and lifelines) in the study area.
- Dissemination of knowledge.

Output 1.5: Quantification of the Earthquake Expected Damage and Losses Based on Earthquake Scenarios.

This will include the development of scenario information, running the relevant earthquake scenarios related to the direct effects of earthquakes (landslides and liquefaction will not be considered) and determining the resulting damage for buildings and infrastructure. This would also result in best estimates for the number of casualties (injuries and deaths) for the different scenarios.

The values and spatial distribution of the losses would serve the development of an integrated earthquake risk management plan. Such a plan should include all the links of the earthquake risk reduction strategy, namely: mitigation, preparedness, emergency response and recovery and reconstruction. Each of the four branches of seismic risk reduction mentioned above relies heavily on the results of the ERA proposed for the city of Aqaba.

Earthquake risk assessment results in maps and analysis products associated with loss estimation assessment models. On the other hand, earthquake risk management may utilize the resulting maps for regulation of new and existing community development (urbanization). The maps can be used to identify which parts of a geographic area are "safest" for a certain type of construction and which parts are "hot spots" that must be avoided. Furthermore, the resulting maps provide community decision-makers and policymakers with a sound basis for enacting and implementing mitigation, preparedness, emergency response and recovery measures to best fit the economical constraints and limitations for the city and therefore integrating the process of risk reduction into community development.

Indicative Activities:

- Quantification of the earthquake-inflicted damage for a moderate earthquake scenario.
- Quantification of the earthquake-inflicted damage for a major earthquake scenario.

Output 1.6: Development of a Disaster Risk Management Master Plan for Aqaba City (DRMMP)

Aqaba city and the surround region are subject to major earthquakes, the Damiye earthquake in 1927 and the Aqaba earthquake in 1995 are recent proof. Large earthquakes can cause death, injury, major economic loss and social disruption.

Aqaba's population and infrastructure continues to grow at a rapid pace, steadily increasing the region wide risk of disastrous earthquakes. Response to a disaster of this magnitude will severely strain the resources of both the public and private sectors in the region and necessitate the development of a Disaster Risk Management Master Plan (DRMMP), in view of the fact that the capacity of Jordan to deal with natural hazard risk is still predominantly focused at the response stage and in need of strengthening in several areas to bring it more in line with contemporary risk reduction practices.

In this project we have the opportunity to build on (i) the existing knowledge and experiences gained from the ongoing project in Amman city, which aims at developing a disaster risk management master plan to be mainstreamed into urban development plan and (ii) the knowable that will be gained from conducting this project to equip the city of Aqaba with a DRMMP, which will be anchored in a sound institutional framework and will be based on the risk profile of the city.

This plan will be the foundation to make Aqaba seismically resistant at all levels, citizenry, business, and government, wisely living with the earthquake hazard that naturally exists in this region. This means that when earthquakes occur, there is little or no loss of life, injuries are kept to a minimum and property and infrastructure losses are minimized and not critical. It also requires rapid emergency response that is well-organized, effective, and with adequate resources. Recovery must be rapid with minimal loss of business, and a complete return to the prior, or better, standard of living.

The proposed DRMMP for Aqaba city shall address the three stages of the earthquake disaster cycle, (a) before the disaster, when preparedness and mitigation are important; (b) immediately after the disaster, when the emergency response capacity is needed; and (c) after the disaster,

when the city's capacity to recover quickly from the disaster is most important, as illustrated hereunder in Figure 1.

The DRMMP shall be prepared by researchers from the Royal Scientific Society (RSS) Consortium in collaboration with key persons from the Jordanian Civil Defense (JCD), Aqaba Special Economic Zone Authority (ASEZA) and people concerned. The proposed plan will utilize the results of Amman Project, which is under implementation by the Jordanian Civil Defense with the funding from the UNDP and SDC, and will build on it to enhance the outcomes of this project, such as:

- Revision of the legislation for defining ASEZA legislations and its relation to the national legislations.
- Including Aqaba city when conducting the training and public awareness programs for the ongoing Amman Earthquake Project. One or two persons from Aqaba Project may attend the training program for Amman Project.

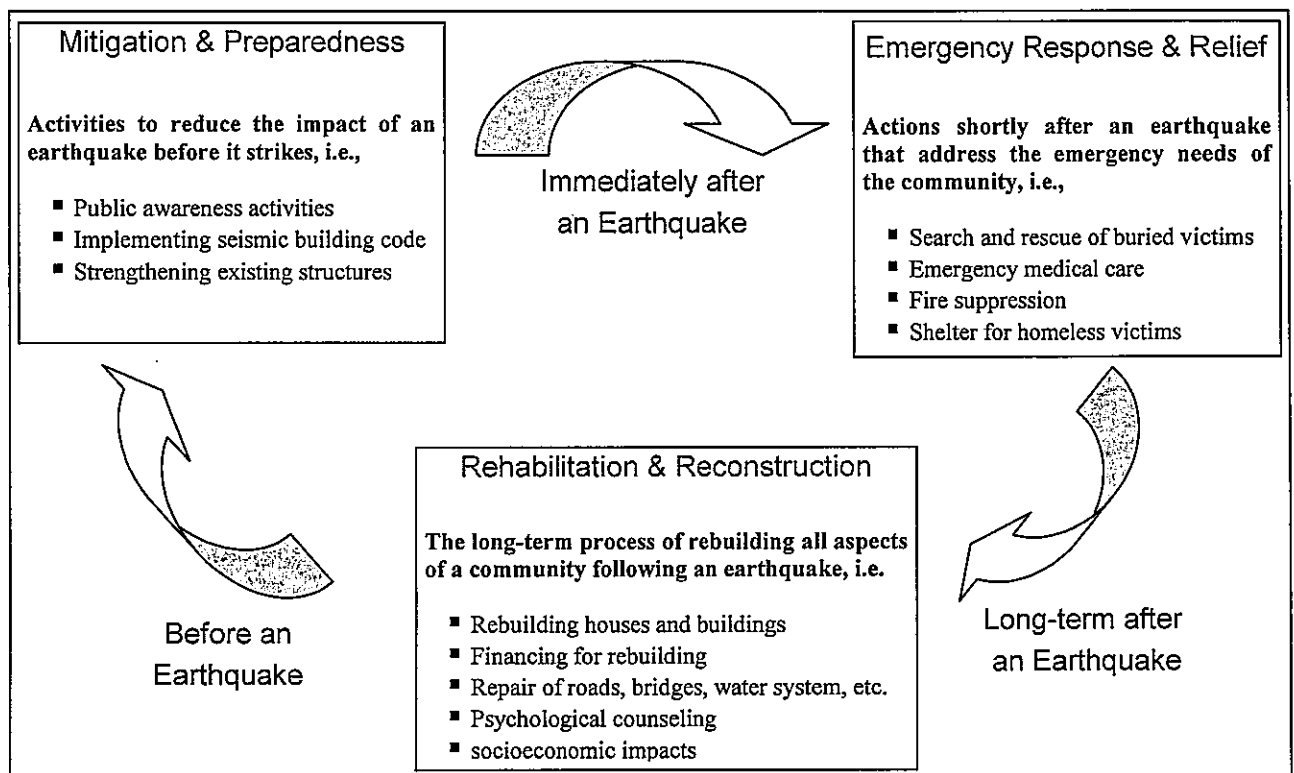


Figure (1): stages of the earthquake disaster cycle

Reduce Earthquake Hazard Through Mitigation.

- Promote the adoption and enforcement of technically sound and economically feasible codes, standards and procedures for the design and construction of new structures and additions to existing structures.
- Identify existing structures especially susceptible to earthquake damage and develop methods to reduce such damage.
- Establish a process reviewing construction documents and inspecting construction of buildings and structures for compliance with the seismic provisions of the building codes.
- Mitigate non-structural hazards for hospitals, schools and other critical facilities.
- Accelerate the program to assess, retrofit and/or replace bridges that do not meet current earthquake design standards.
- Minimize the risk for hazardous material spills and contamination that may be caused by an earthquake.
- Conduct critical lifeline co-location vulnerability studies.

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- Promote local government assessment of sites for new critical facilities and schools.
- Support educational, regulatory, legislative and market-based efforts to promote insurer ability to respond to seismic catastrophes.
- Mitigation from gender perspective.
- Casualties and economic losses can only be avoided by taking positive steps to ensure that structures and systems survive earthquake shaking with minimal damage.

Improve Emergency Response.

- Review the National Comprehensive Plan.
- Promote community emergency response teams.
- Promote development of emergency response plans at local levels.
- Evaluate training programs and promote training for local emergency management and volunteer agencies who respond to disasters.
- Enhance communication capability and coordination for emergency response between Jordan government and local governments and private groups.
- Enhance ability of emergency response personnel, materials and equipment to reach affected areas.
- Promote development of effective, coordinated response plans for utilities.
- Develop the capability to respond to multiple hazardous materials incidents.
- Response efforts need to be well coordinated, fast and efficient to reduce injury, additional loss of life, and further property destruction.

Improve Recovery.

- Identify and designate earthquake-resistant short- and long-term shelters.
- Train volunteers on rapid visual assessment of buildings.
- Enable entrepreneurs and small businesses to recover from an earthquake and to access funding at local and international levels in a timely manner so that economic recovery progresses.
- Enhance emergency management and coordination between the central and local agencies.
- Support identification of facilities and methods for disposal of uncontaminated debris and hazardous materials from collapsed structures.
- Enhance ability to provide crisis counseling mainly to women and youth to individuals in affected areas.
- The recovery process helps people resume their normal lives by reducing the emotional and economic impact of the disaster over the long term.

Assess Earthquake Hazard.

- Map and identify natural geologic hazards.
- Support region wide, real-time earthquake monitoring system.
- Develop a response team to identify and evaluate post-earthquake effects.
- Develop generalized soil profile parameters for ground shaking analysis.
- Readiness for an earthquake requires basic knowledge of expected earthquake locations and the effects of local site conditions on shaking, as well as rapid notification of their occurrence.

Indicative Activities:

- Proposed a Disaster Risk Management Master Plan for Aqaba city, which shall include cost-benefit analysis of earthquake-resistant design and recommendations for urban planners and city officials as well as Civil Defense.

- Dissemination of knowledge.

EARTHQUAKE MITIGATION FROM A GENDER PERSPECTIVE

The results of earthquake risk assessment studies are very crucial for earthquake preparedness planning and for developing strategies to minimize the risk from earthquakes. However, the socioeconomic impacts for these studies can not be overlooked. These studies can be seen as national planning and management tools which are fundamental for the reduction of incidental poverty and the wellbeing of the inhabitants.

The socio-economic problems are aggravated because of an earthquake occurrence. The consequences of the disaster usually hit women the hardest; women's rights and opportunities are violated more than those of other people. The gender specific effects of an earthquake may include:

Many families become gender unequal, due to the loss of husbands or wives, which caused many socio-economic and psychological problems.

The loss of children, relatives, houses, life in contemporary houses, the loss of jobs led not only to men's but also women's poverty. The loss of jobs led to uselessness, which in its turn sharpen the desperateness because of relative and house losses.

The violation of women's human rights in the family in general is more vivid during disaster situation than in normal living situations

Beside the many socio-economic problems, caused by the earthquake, there are health problems, which show up after the earthquake occurrence, especially in distant rural locations. This occurs due to degradation of living conditions as an earthquake effect, the poverty and great percentage of migration.

The men in such situation are less flexible and find the solution in aggressiveness and in discrimination against women. In addition, men bring the hardness of family living earning on women's shoulders' (problems of children, parents). However, women are traumatized too; they do not have jobs and are partially disabled. They become pressed and in desperate situations. All this lead to illnesses, and poverty, which were not a typical character of the community before.

If the solution to the socio-economic problems is connected to greater funds, enhancing the population's health awareness could stop the increase of diseases caused by such socio-economic problems. Also enhance responsibility (by participating in the solution of health problems) and the level of awareness among women through discussions could help.

Due to their contribution in the education sphere, women (equally with men) can play a key role in preparing emergency relief assistance provoked by natural disasters. Women have the potential to be key actors in environmental management and natural disaster mitigation because of their very proactive behaviour in protection and wellbeing of their household, their involvement in family community-based activities, and neighbourhoods.

Involving women equally with men in all levels of decision-making positions (in this project, in education, public awareness, capacity building and planning) will add the potential contribution they could make in disaster mitigation

III. MONITORING FRAMEWORK AND EVALUATION

The Project Manager will develop and submit a detailed project work plan at the outset of the project, and quarterly financial and progress reports to the UNDP country office. Additionally, one project progress reports (Annual Progress Report) at the end of each year, and a Terminal Report, three months before completion of all project activities will be submitted to UNDP. These documents will provide critical information and lessons learned regarding the effectiveness of the implementation strategy and the delivery of outputs.

The Project Board will meet every four months in order to take stock of the progress of the project. All stakeholders will also participate in a Terminal Tripartite Review Meeting (TPR) at the end of the project duration, where a Terminal Report highlighting the main achievements, results, and lessons learned will be reviewed and discussed. An independent evaluation could also be commissioned at the cost of the project if warranted given funds are available. At least two field visits should take place by UNDP CO during the life of the project. The project is subject to auditing at least once in its lifetime, in accordance with UNDP regulations.

In accordance with the programming policies and procedures outlined in the UNDP User Guide, the project will be monitored through the following:

Within the annual cycle on a quarterly basis

- A quality assessment shall record progress towards the completion of key results, based on quality criteria and methods captured in the Quality Management table below.
- An Issue Log shall be activated in Atlas and updated by the Project Manager to facilitate tracking and resolution of potential problems or requests for change.
- Based on the initial risk analysis submitted (see Table 1 for initial risk analysis), a risk log shall be activated in Atlas and regularly updated by reviewing the external environment that may affect the project implementation.
- Based on the above information recorded in Atlas, a Quarterly Progress Reports (QPR) shall be submitted by the Project Manager to the Project Board through Project Assurance, using the standard report format available in the Executive Snapshot.
- a project Lesson-learned log shall be activated and regularly updated to ensure on-going learning and adaptation within the organization, and to facilitate the preparation of the Lessons-learned Report at the end of the project
- a Monitoring Schedule Plan shall be activated in Atlas and updated to track key management actions/events

Annually

- **Annual Review Report.** An Annual Review Report shall be prepared by the Project Manager and shared with the Project Board and the Outcome Board. As minimum requirement, the Annual Review Report shall consist of the Atlas standard format for the QPR covering the whole year with updated information for each above element of the QPR as well as a summary of results achieved against pre-defined annual targets at the output level.
- **Annual Project Review.** Based on the above report, an annual project review shall be conducted during the fourth quarter of the year or soon after, to assess the performance of the project and appraise the Annual Work Plan (AWP) for the following year. In the last year, this review will be a final assessment. This review is driven by the Project Board and may involve other stakeholders as required. It shall focus on the extent to which progress is being made towards outputs, and that these remain aligned to appropriate outcomes.

RISK ANALYSIS

Risks

Risks associated with project implementation are envisaged to be low in view of the availability of the majority of the funding from UNDP and government sources, the support of RSS and the level of partners' interest in reducing the impact of disasters in Jordan. The initial risks identified are listed in the risk matrix below.

The main risks are the shortage of full-time officials allocated to this role at national level and the workload of officials at ASEZA. The latter in particular carry such a wide range of responsibilities that it will be hard for them to allocate sufficient time to meeting their disaster management responsibilities.

A medium risk is that there is a shortage of experienced administrators with the possible result that those who prove themselves able to handle rapidly developing portfolios efficiently will be rapidly promoted to positions in other parts of the organizations. While this disseminates the knowledge and experience of those officials, it also results in a loss of continuity and a need to revisit the training. The risk will be reduced by spreading the training as widely as possible through 'Train the Trainers' courses that assist ASEZA staff to spread their knowledge more widely.

Prior Obligations

The prior obligations necessary for smooth project implementation are the commitment of the Government of Jordan to its support and the contributions by the Government, UNDP and any donors who support the project.

Project Exit strategy and Sustainability

During the final 6 months of the project, ASEZA will focus efforts on designing and implementing the project's exit and sustainability plan.

The process will be executed in 3 phases; the first is closure and documentation of the preceding completed activities, then evaluating impact and satisfaction both on the beneficiary and the partner levels, and finally designing the expansion plan which includes lining up interested partners and fundraising.



The initial risks matrix

#	Description	Type	Impact & Probability	Countermeasures/ Management Response
1	The Inflation being addressed since the mid of 2007 in Jordan particularly and worldwide in general has affected the prices and wages of the different items and level of efforts for the national consultants.	Operational	P = 3 I = 3	- The Project Budget might be revised as necessary to accommodate the inflation whenever it is needed.
2	The lack of the qualified local experts needed for implementing many high technical specified activities of the project.	Technical	P = 3 I = 3	- Utilize the international experience available in certain project's partners, such as Amman Earthquake Project. - Encouraging the local experts to conduct such activities by providing full cooperation and support.
3	Lack of coordination among the concerned institution especially among the academic and research institutions, making it difficult to get the adequate data and information needed for implementing the different activities of the project.	Organizational	P = 3 I = 3	- More focus on the importance of such project for different parties involved. - Utilize the political well which is very clear from the directions and guidance being made by the central government to the concerned institutions to take full considerations of the natural disasters
4	Lack of awareness among the community and even at the decision-making level regarding the natural disasters risk in Jordan, making it very critical when addressing the seismic risk in Aqaba.	Technical	P = 3 I = 4	- Raising the awareness among both; the community and decision-making level.
5	The shortage of full-time officials allocated to this role at national level, which carry a wide range of responsibilities that it will be hard for them to allocate sufficient time to meeting their responsibilities.	Organizational	P = 3 I = 3	- Using the political well as a tool for convincing the concerned institutions for allocating more time for the officials working with this pioneer Project.
6	There is a shortage of experienced administrators with the possible result that those who prove themselves able to handle rapidly developing portfolios efficiently will be rapidly promoted to positions in other parts of the organizations.	Organizational	P = 3 I = 3	- Spreading the training as widely as possible through 'Train the Trainers' courses that assist ASEZA staff to spread their knowledge more widely

Quality Management for Project Activity Results

OUTPUT 1: Natural and man-made disaster management plans with a focus for the seismically active areas put in place		
Activity Result 1 (Atlas Activity ID)	Review the existing legislation on disaster risk management	Start Date: Q3-2008 End Date: Q4-2008
Purpose	Whereas, many different agencies and institutions at various levels of government have substantial responsibilities in the fields of earthquake emergency response and recovery planning and seismic safety, there is a pressing need to review the current institutional mechanisms, legal and administrative authority and responsibility in order to achieve the following: <ul style="list-style-type: none"> - Developing an improved understanding of the structures and institutions involved in disaster management functions within the national institutions and ASEZA, their levels of responsibility and authority, and their inter-relationships. - Review the existing legislation in the law to support certain disaster risk management measures in line with Hyogo framework. 	
Description	An inter-sectoral and inter-institutional Focus Group (FG) consisting of all stakeholders of the disaster management process including selected experts from technical academia, business community, national government institutions, and advisers from UNDP, SDC, and BCPR will be established to review the current legislation and prepare the necessary documentation.	
Quality Criteria	Quality Method	Date of Assessment
Drafted legislation and laws for Aqaba city following UNDP/BCPR approach in other cities such as Manila, Kathmandu, Mumbai, and Amman.	<ul style="list-style-type: none"> - Feedback from participants; - Compare obtained results with those for Amman project; and - Feedback from external experts review. 	End of Q4-2008

OUTPUT 1: Natural and man-made disaster management plans with a focus for the seismically active areas put in place		
Activity Result 2 (Atlas Activity ID)	Developed risk reduction profile for Aqaba city	Start Date: Q3-2008 End Date: Q4-2008
Purpose	To establish a comprehensive summary of the essential data and statistics of Aqaba city, which will explain the disaster management structure of the city in the context of the national institutional and organizational arrangements.	
Description	Based on the results obtained in the previous activity, a risk profile for Aqaba city will be developed to serve as a consensus reference document for practitioners, managers and policy makers, and will provide a benchmark for measuring progress in the future. The development of the document will also be an opportunity for consultation with stakeholders, men and women, and for developing the channel of communication that would provide the basis for consensus and agreements on proposed organizational and institutional improvements to improve disaster risk management practices in the city and the country.	
Quality Criteria	Quality Method	Date of Assessment
Developed risk reduction profile for Aqaba city following UNDP/BCPR approach in other cities such as Manila, Kathmandu, Mumbai, and Amman.	<ul style="list-style-type: none"> - Compare the developed risk reduction profile for Aqaba city with that for Amman city; and - Feedback from external review. 	End of Q4-2008

OUTPUT 1: Natural and man-made disaster management plans with a focus for the seismically active areas put in place		
Activity Result 3 (Atlas Activity ID)	Seismic hazard assessment for Aqaba city	Start Date: Q3-2008 End Date: Q2-2009
Purpose	To determine the most probable earthquake scenarios for Aqaba city based on geological	

	and geophysical investigations, as well as knowledge of historical seismicity and to disseminate the acquired knowledge.	
Description	National experts in related fields, geology, geophysics, geotechnics, seismology, etc. with the support of international expertise will collect and review the available geological and geophysical data to identify and characterise the hazard parameters, and the possible earthquake scenarios expected in Aqaba city.	
Quality Criteria	Quality Method	Date of Assessment
<ul style="list-style-type: none"> - Developed geological maps with active faulting systems (GIS format). - Developed maps showing geotechnical information and soil classification (GIS format). - Prepared seismic hazard maps with spectral acceleration values at the surface, taking into consideration local site effects. 	<ul style="list-style-type: none"> - Feedback from participants. - Compare obtained results with the new seismic sources (Barcelona - RELEMR Conference 2006) and the results of RSS study funded by the SDC. 	End of Q4-2008
<ul style="list-style-type: none"> - Prepared earthquake scenarios (magnitude and location of major and moderate earthquakes). 	<ul style="list-style-type: none"> - Feedback from participants. - Workshop reports. - External review and feedback 	End of Q2-2009

OUTPUT 1: Natural and man-made disaster management plans with a focus for the seismically active areas put in place

Activity Result 4 (Atlas Activity ID)	Vulnerability functions for buildings, lifelines and infrastructure adapted for the specific types of disasters present in Aqaba	Start Date: Q4-2008 End Date: Q3-2009
Purpose	<ul style="list-style-type: none"> - To conduct an inventory of buildings. - To conduct an inventory of lifelines and infrastructure.. - To set social vulnerability functions for Aqaba city. - To set physical vulnerability functions for buildings and lifelines for Aqaba city. - To disseminate the acquired knowledge. 	
Description	<p>An inventory of social and physical functions (residential, commercial, hospitals and schools) and infrastructure, i.e. the various components of the built environment in Aqaba will be developed. Each of these components will be divided into a number of specific categories and vulnerability functions will be developed or adapted from the literature for each of these categories.</p> <p>The inventory of the built environment will be developed through a geographical information system which will allow for easy sharing of the information with other institutions or individuals carrying out risk assessment analyses.</p>	
Quality Criteria	Quality Method	Date of Assessment
<ul style="list-style-type: none"> - Produced maps showing Inventory of buildings in GIS format. - Produced maps showing Inventory of lifelines and infrastructure in GIS format. - Developed sets of social and physical vulnerability functions of buildings and lifelines in Aqaba city. 	<ul style="list-style-type: none"> - Feedback from participants. - Workshop reports. - External review and feedback 	End of Q3-2009

OUTPUT 1: Natural and man-made disaster management plans with a focus for the seismically active areas put in place

Activity Result 5 (Atlas Activity ID)	Quantification of the earthquake expected damage and losses based on earthquake scenarios	Start Date: Q3-2009 End Date: Q4-2009
Purpose	- To determine the Earthquake expected damage and losses for a moderate earthquake	

	- To determine the Earthquake expected damage and losses for a major earthquake	
Description	This will include the development of scenario information, running the relevant earthquake scenarios related to the direct effects of earthquakes (landslides and liquefaction will not be considered) and determining the resulting damage for buildings and infrastructure. This would also result in best estimates for the number of casualties (injuries and deaths) for the different scenarios.	
Quality Criteria	Quality Method	Date of Assessment
<ul style="list-style-type: none"> - Quantification of the earthquake-inflicted damage for a moderate earthquake scenario prepared. - Quantification of the earthquake-inflicted damage for a major earthquake scenario prepared. 	<ul style="list-style-type: none"> - Feedback from participants. - Workshop reports. - External review and feedback 	End of Q4-2009

OUTPUT 1: Natural and man-made disaster management plans with a focus for the seismically active areas put in place		
Activity Result 6 (Atlas Activity ID)	Development of a disaster risk management master plan for Aqaba city (DRMMP)	Start Date: Q1-2010 End Date: Q2-2010
Purpose	To equip the city of Aqaba with a DRMMP that will be anchored in a sound institutional framework and will be based on the risk profile of the city.	
Description	<p>Under this deliverable, there is an opportunity to build on (I) the existing knowledge and experiences gained from the ongoing project in Amman city, which aims at developing a disaster risk management master plan to be mainstreamed into urban development plan and (ii) the knowable that will be gained from conducting this project to equip the city of Aqaba with a DRMMP.</p> <p>The proposed DRMMP for Aqaba city shall address the three stages of the earthquake disaster cycle, (a) before the disaster, when preparedness and mitigation are important; (b) immediately after the disaster, when the emergency response capacity is needed; and (c) after the disaster, when the city's capacity to recover quickly from the disaster is most important.</p>	
Quality Criteria	Quality Method	Date of Assessment
Master-plan developed through close consultation and involvement of experts from BCPR and SDC and in line with some approved standards in this field.	<ul style="list-style-type: none"> - Compare obtained results with those for Amman project; and - Feedback from external review. 	End of Q2-2010

IV. LEGAL CONTEXT

This document together with the CPAP signed by the Government and UNDP which is incorporated by reference constitute together a Project Document as referred to in the SBAA and all CPAP provisions apply to this document.

Consistent with the Article III of the Standard Basic Assistance Agreement, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

The implementing partner shall:

1. put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
2. Assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document".



The outcomes of the suggested assessment of the seismic risk in Aqaba would provide the necessary information for legislators and scientists as well, to quantify the level of seismic risk affecting the city (study area). The first step in the process of mitigating earthquake hazards in a region is to define the level of acceptable risk versus the actual risk level, in order to implement effectively mitigation measures and strategies to lower, if necessary, the level of seismic risk to acceptable limits and thereby minimize human and financial losses to "acceptable" levels. Running earthquake scenarios and determining the expected levels of building damage and the number of fatalities and injuries are crucial for preparedness plans that must be based on realistic estimates of damage and fatalities. Damage and fatalities' estimates are also needed during the "response" stage wherein efficient emergency plans are needed to manage and reduce earthquake losses, both human and financial. The earthquake risk assessment study of the city of Aqaba will provide city officials with the information required to develop a master plan for earthquake risk management which in turn will provide a framework for earthquake risk reduction.

Moreover, an assessment of the seismic risk in Jordan at large, part of which is the risk assessment for Aqaba, is required to enable the insurance section to come up with reasonable estimates for insurance premiums for buildings and infrastructure. In summary, an earthquake risk assessment would serve the goals of all parties engaged in the process of human life protection and sustained development.

The project is in line with recommendations of the UN Common Country Assessment CCA (2008-2011) to enhance capacity of the Government and CSOs to prevent, respond to and mitigate natural and man-made disasters and to UNDP country programme and the UNDP Country Programme and Action Plan CPAP (2008-2011) to enhance capacity of the Government and CSOs to prevent, respond to and mitigate natural and man-made disasters UNDP country programme.

It complements ongoing UNDP interventions including Support to Building National Capacities for Earthquake Risk Reduction at Amman Municipality in Jordan project which aims to establish an integrated disaster risk management process, which will equip the city of Amman with a Disaster Risk Management Master Plan (DRMMP) that is anchored in a sound institutional framework and will be based on the risk profile of the city, and the UNDP regional project "Sub-regional Facility for Cooperation in Disaster Reduction among the Arab States", which will support the strengthening of regional and national capacities through the development of a sub-regional platform to facilitate the sharing and networking of knowledge and the development of common approaches to training and capacity building based on good practices and experience within the sub region, as well as the RSS/ SDC project under implementation and aimed at the mitigation of seismic hazard in Jordan.

STRATEGY

The main objective of the proposed project is to conduct an earthquake risk assessment (ERA) for the city of Aqaba. The results of the risk assessment can be used by policy makers to set plans for the different links of the seismic risk mitigation chain: that is to integrate risk assessment and risk management. In order to do so, realistic and cost-effective public policies should be enacted and implemented to determine the unacceptable level of seismic risk and then community specific mitigation measures should be devised and implemented to reduce the community's vulnerabilities and unacceptable risks.



Although Aqaba is one of the very few cities in Jordan that already has developed an emergency plan for earthquakes, the city plan is only focused on the co- and post seismic intervention. However, the disastrous effects of large earthquakes can be greatly reduced if proper plans are set up in advance to tackle mitigation, preparedness, emergency response, and recovery and reconstruction measures and regulations. Such plans need to be based on realistic and comprehensive ERA studies for the area under consideration, which include the following:

- Assessment of the earthquake hazard and determination of earthquake scenarios.
- Assessment of the seismic vulnerability of buildings and engineering construction in the area.
- Calculation of the expected damage in the city for different earthquake scenarios.

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**STANDARD LETTER OF AGREEMENT BETWEEN UNDP AND THE GOVERNMENT FOR
THE PROVISION OF SUPPORT SERVICES**

Dear Mr. Husseni Abu Ghaida,

1. Reference is made to consultations between officials of *the Government of Jordan* (hereinafter referred to as "the Government") and officials of *UNDP* with respect to the provision of support services by the UNDP country office for nationally managed programmes and projects. UNDP and the Government hereby agree that the UNDP country office may provide such support services at the request of the Government through its institution designated in the relevant programme support document or project document, as described below.

2. The UNDP country office may provide support services for assistance with reporting requirements and direct payment. In providing such support services, the UNDP country office shall ensure that the capacity of the Government-designated institution is strengthened to enable it to carry out such activities directly. The costs incurred by the UNDP country office in providing such support services shall be recovered from the administrative budget of the office.

3. The UNDP country office may provide, at the request of the designated institution, the following support services for the activities of the programme/project:

- (a) Identification and/or recruitment of project and programme personnel;
- (b) Identification and facilitation of training activities;
- (a) Procurement of goods and services;

4. The procurement of goods and services and the recruitment of project and programme personnel by the UNDP country office shall be in accordance with the UNDP regulations, rules, policies and procedures. Support services described in paragraph 3 above shall be detailed in an annex to the programme support document or project document, in the form provided in the Attachment hereto. If the requirements for support services by the country office change during the life of a programme or project, the annex to the programme support document or project document is revised with the mutual agreement of the UNDP resident representative and the designated institution.

5. The relevant provisions of the Standard Basic Assistance Agreement (SBAA) between the Authorities of the Government of Jordan and the United Nations Development Programme (UNDP), signed by the Parties on 12 January 1976 (the "SBAA"), including the provisions on liability and privileges and immunities, shall apply to the provision of such support services. The Government shall retain overall responsibility for the nationally managed programme or project through its designated institution. The responsibility of the UNDP country office for the provision of the support services described herein shall be limited to the provision of such support services detailed in the annex to the programme support document or project document.

6. Any claim or dispute arising under or in connection with the provision of support services by the UNDP country office in accordance with this letter shall be handled pursuant to the relevant provisions of the SBAA.



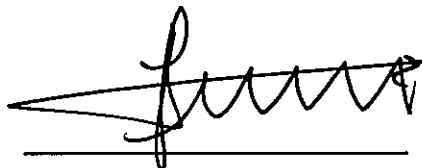
7. The manner and method of cost-recovery by the UNDP country office in providing the support services described in paragraph 3 above shall be specified in the annex to the programme support document or project document.

8. The UNDP country office shall submit progress reports on the support services provided and shall report on the costs reimbursed in providing such services, as may be required.

9. Any modification of the present arrangements shall be effected by mutual written agreement of the parties hereto.

10. If you are in agreement with the provisions set forth above, please sign and return to this office two signed copies of this letter. Upon your signature, this letter shall constitute an agreement between your Government and UNDP on the terms and conditions for the provision of support services by the UNDP country office for nationally managed programmes and projects.

Yours sincerely,



Signed on behalf of UNDP
Luc Stevens
Resident Representative



For the Government
Husseni Abu Ghaida
Chief Commissioner
1 August 2008





Attachment

DESCRIPTION OF UNDP COUNTRY OFFICE SUPPORT SERVICES

1. Reference is made to consultations between Aqaba Special Economic Zone Authority (ASEZA), the institution designated by the Government of Jordan and officials of UNDP with respect to the provision of support services by the UNDP country office for the nationally managed programme or project Support to Building National Capacities for Earthquake Risk Reduction at Aqaba Special Economic Zone in Jordan, *the Project*.

2. In accordance with the provisions of the letter of agreement signed on 1 August 2008 and the project support document, the UNDP country office shall provide support services for the *Project* as described below.

3. Support services to be provided:

Support services (insert description)	Schedule for the provision of the support services	Cost to UNDP of providing such support services (where appropriate)	Amount and method of reimbursement of UNDP (where appropriate)
1. Procurement of goods: <ul style="list-style-type: none">• Vehicle• Computers• Software	Third Quarter 2008 – Forth Quarter 2009	Following UPL	-
2. Procurement of Services: <ul style="list-style-type: none">• Contractual services for Companies	Third Quarter 2008	Following UPL	-
2. Identification and/or recruitment of project personnel <ul style="list-style-type: none">• Project Manager• Project Assistant	Third Quarter 2008	Following UPL	-
3. Identification and facilitation of training activities	Third Quarter 2008 – First Quarter 2010	Following UPL	-

Annex 3: Terms of Reference – Project Board (BP)

Composition

- UNDP-Jordan
- Ministry of Planning and International Cooperation
- Aqaba Special Economic Zone Authority

Duties

- Provide strategic guidance to project implementation
- Coordinate information sharing among the major project stakeholders
- Plan and guide external project reviews and evaluations
- Guide response to external project reviews and evaluations
- Monitor project implementation against the project strategy and guide adjustments in implementation
- Identify and secure support and supporters to the project from the private sector;
- Facilitate co-ordination with other government projects and programmes;
- Facilitate consultation with, and participation of, a broad range of stakeholders;

Procedures

- The PB shall conduct business through meetings convened three times per year.
- At the first meeting of the PB, the PB members will review this TOR and the PB membership, and adopt changes as appropriate
- The National Project Manager will organize the meetings and act as Secretary and will prepare and distribute all concerned documents in advance of meetings, including the meeting agenda.
- In between meetings, PB business will be conducted through e-mail, coordinated by the Project Coordinator

Input

At least 3 formal meeting per year through the duration of the project



Annex 4: Terms of Reference- Project Technical Committee (PTC)

Composition

- UNDP-Jordan
- Aqaba Special Economic Zone Authority
- Ministry of Planning and International Cooperation
- Swiss Agency for Development and Cooperation

Duties

- Provide strategic guidance to project implementation
- Coordinate information sharing among the major project stakeholders
- Plan and guide external project reviews and evaluations
- Guide response to external project reviews and evaluations
- Monitor project implementation against the project strategy and guide adjustments in implementation
- Identify and secure support and supporters to the project from the private sector;
- Facilitate co-ordination with other government projects and programmes;
- Facilitate consultation with, and participation of, a broad range of stakeholders;

Procedures

- The PTC shall conduct business through meetings convened three times per year.
- At the first meeting of the PTC, the PTC members will review this TOR and the PTC membership, and adopt changes as appropriate
- The Project Coordinator will organize the meetings and act as Secretary and will prepare and distribute all concerned documents in advance of meetings, including the meeting agenda.
- In between meetings, PTC business will be conducted through e-mail, coordinated by the Project Coordinator

Input

At least 3 formal meetings per year throughout the duration of the project

Annex 5: Terms of References – Focus Groups

The Focus Groups are composed of representatives of key stakeholders and selected experts and future users.

The aims of the Focus Groups are multiple, including:

- Provide input to the development of the various components of the project
- Provide access to information
- Ensure representation and participatory process and gather consensus
- Create an environment of collaboration and develop stakeholders coalition
- Ensure knowledge sharing and knowledge transfer
- Provide continuity in representation
- Develop mechanisms for ownership and sustainability

The size of each Focus Group will vary depending on its objectives. While it is important to have a wide representation, it is also necessary to strike a balance in terms of having a manageable group. Most importantly, the group should be made of informed participants who can represent the interests of their agency/constituency adequately and constructively. Hence, the members of each Focus Group should be carefully selected with special emphasis on the representatives of Women's NGOs and CBOs. Each Focus Group will have a chair who will lead the focus group meetings and will keep the group cohesive, focused and informed.

ASEZA will be in charge of the creation and the coordination of the Focus Groups in consultation with the PAC and the Project Board. The role and working conditions of the Focus Groups will be clearly defined and communicated to the members of each group. The Focus Groups will meet as necessary to keep them informed on the progress of the study, and to seek their input, and to ensure coordination and sharing of information. One of the key functions of the focus group is to participate in the workshops.

Annex 6- Terms of Reference (the National Project Manager)



Description of Responsibilities

The National Project Manager (NPM) has the responsibility for the national delivery of the project's outcomes and activities in accordance with the project document and agreed work plan. He/She will serve on a full-time basis and will be committed to the day-to-day management of the project and for its successful implementation in line with the UNDP standards. The specific tasks and responsibilities include the following:

Project management (75%)

- Provide overall management and planning for the implementation of the national project's outcomes, outputs and activities according to the project document and annual workplan;
- Participate in conferences, workshops, meetings to provide input in the strategic planning & implementation of the project.
- Establish coordination mechanisms and maintain continuous liaison with UNDP-CO and the national implementing agency.
- Develop and submit a detailed work program for the national execution of the project and the delivery of outputs.
- Ensure that the project activities are delivered on time according to the workplan and assure quality control.
- Document project activities, processes and results.
- Provide financial oversight and ensure financial accountability for the Project (monitor and manage the allocation of available budget to project activities, undertake all necessary financial arrangements, processes, requests for authorizations, payments).
- Ensure preparation & timely delivery of narrative & financial reporting (quarterly, progress and annual reports) submitted to UNDP; taking into account the norms and standards for project monitoring and reporting are properly met.
- Provide management oversight to daily operational and administrative aspects of project (procurement, recruitment, staff supervision); Supervise all staff assignments, consulting agreements and procurements;
- Identify and appoint national experts/consultants, in conjunction with UNDP, to be hired for the implementation of specific project components or training of the project, develop TOR and agreements, and follow-up on performance.
- Initiate, in coordination with the UNDP, the Project Board, and ensure that the Project acts as the Secretariat for the Board (calling for meetings, preparing and consulting on agenda, steering discussions, follow-up on decisions, keep members informed on the progress, etc.).
- Establish and manage office facilities as needed to support project activities.
- Ensure sound programme monitoring and evaluation.
- Develop a resource mobilization strategy for the national component of the project; maintain effective liaison with funding partners and further develop the project's resource base, whenever possible.

Project Outreach (Education, Awareness, Networking) (25%)

- To prepare & perform awareness campaign & presentations to target audiences (decision makers, universities, general public ...).
- Attend as appropriate national, regional and international events to enhance information sharing and dissemination and lessons learned.
- Establish continuous liaison with media providing updates on the project.
- Document and disseminate lessons learned and best practices.
- Participate in, & contribute to, the regional activities and network established by the Sub-regional Facility in Disaster Management Project; a network for influence, exchange, support, capacity-development and knowledge management.
- Contribute to, and draw from, relevant knowledge management networks

Relationships

The National Project Coordinator will:

- Report directly to the UNDP regarding project performance, administrative and financial issues.
- Be accountable to the UNDP for the achievement of project objectives, results, and all fundamental aspects of project execution.
- Maintain regular communication with UNDP and the National Steering Committee members.

Qualifications and Experience

The National Project Coordinator will have the following qualifications, or be able to demonstrate:

Education

- An advanced university degree (MSc) in any appropriate discipline related to Engineering, Geology, Disaster Management, project management.
- Additional qualifications or experience related to marketing and communication will be advantageous

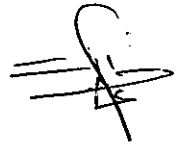
Experience, Skills and Competencies

- A minimum of seven years national experience in project development and management; related to Earthquake Reduction and /or Disaster Management or any other related field.
- Proven knowledge of the environmental and/or engineering sector in the country; overview knowledge of the region is an added asset.
- Previous success in resource mobilization;
- Proven ability to work with a variety of people including government officials, international and national NGOs, local stakeholders, experts and consultants.
- Strong leadership, managerial and team-building skills; committed to enhancing and bringing additional value to the work of the team as a whole.
- Proven experience in facilitating and chairing meetings and/or workshops.
- Excellent communication, presentation and facilitation skills.



- A proven ability to manage budgets.
- Good organizational and planning skills and a proven ability to adhere to deadlines.
- A proven ability to provide financial and progress reports in accordance with reporting schedules.
- Good computer skills;
- Fluency in verbal and written English and Arabic.

Annex 7: ASSESSMENT OF SEISMIC HAZARD IN JORDAN



Summary

Probabilistic hazard maps for Jordan are developed using a homogeneous probabilistic seismic hazard assessment. The resulting maps quantify seismic hazard in terms of peak ground acceleration, PGA, and of spectral acceleration, SA, (at 0.1, 0.2, 0.3, 0.5, 1.0 and 2.0 seconds) for a probability of exceedance of 10% in 50 years for rock sites. The study area is divided into 18 discrete homogeneous seismic sources and the seismic parameters are assigned accordingly. The ground motion attenuation models developed by Ambraseys et al. (1996) in terms of PGA and SA are chosen to relate the expected ground motion at a site with the magnitude and distance of the earthquake. Using SEISRISK III to carry out the hazard computations, and assuming that earthquake occurrences follow a Poisson distribution, the probabilities that any acceleration value is exceeded are determined by integration over all seismic sources. To provide engineers with appropriate design tools, the resulting spectral acceleration values are used to develop a macrozonation map for Jordan as well as the corresponding response spectra.

Introduction

The Jordan Dead Sea Transform (JDST) that borders the northwestern side of the Arabian plate and extends over a length of 1100 km from the northern Red Sea to Turkey constitutes the major source of seismicity in Jordan. Geological and geophysical evidences disclose that Jordan transform is characterized by a major left-lateral shear with a multi stage occurrence and a total cumulative displacement of 107 km. Recent studies have showed that, the rate of slip along some of the fault segments are in the range of 4-6 mm per year [Klinger et al., 2000].

Other major geological structures that branch of the transform are known to be associated with additional hazard. Statistical analysis of historical and instrumental earthquakes reveals that seismicity of the area is divided into two successive time periods: the first is active with a maximum probable earthquake magnitude of 6-7 on Richter scale which is expected to occur every 40-80 years. This active period lasts for an average of 160 years and is followed by a less active period with lower magnitude earthquakes, that are not expected to exceed 6 on Richter scale, and lasts for an average period of 220-230 years [Natural Resources Authority, 2001].

Over the last three decades numerous studies were carried out to assess the seismic hazard in Jordan using probabilistic methods. The Building Research Center of the Royal Scientific Society of Jordan in close cooperation with the Institute of Earth Sciences "Jaume Almera", CSIC, Spain, has developed a new generation of seismic hazard maps for Jordan. The developed maps were intended to quantify seismic hazard in terms of Peak Ground Acceleration, PGA, and Spectral Acceleration, SA, (at 0.1, 0.2, 0.3, 0.5, 1.0 and 2.0 seconds) for a probability of exceedance of 10% in 50 years for rock sites. Full details on the Jordan seismic hazard assessment and mapping can be found in the technical report [Jimenez, 2004] submitted by Jaume Almera.

Methodology

The probabilistic approach presented by Cornell [Cornell, 1968] and programmed by McGuire [McGuire, 1976] was used for the assessment of seismic hazard. The following points outline the assessment approach:

The area under study was divided into discrete homogeneous seismic sources.

Based on the Jordanian seismic catalogue and including both historical and instrumental records, seismic parameters characterizing the magnitude frequency and the maximum magnitude were assigned to each of the seismic sources.

An appropriate attenuation model was chosen to relate the expected ground motion at a site with the magnitude and distance of the earthquake. The uncertainty of the ground motion values about the predicted mean was considered in the computations.

Assuming that earthquake occurrences follow a Poisson distribution, the probabilities that any acceleration value is exceeded were determined by integration over all seismic sources, ground motion values and magnitudes.

Seismogenic Source Model

The definition and characterization of seismogenic sources for Jordan seismic hazard mapping was established based on an updated version of the Jordanian earthquake catalog of both historical and instrumentally recorded earthquakes that span over the period (1-1999) A.D. The Jordanian earthquake catalog consists of two main parts historical and instrumental. The historical part contains 52 major earthquakes that struck the area over the period (1-1899) A.D., whereas the second part of the catalog contains a much larger number of more recent earthquakes spanning over the period of (1900-1999) A.D.

Based on the geology, the local and regional tectonics of the country; historical and instrumental seismic data; and micro-earthquake surveys 14 seismic sources were initially defined [Building Research Center, 2004] as area sources enclosed by latitudes of 27.0oN and 35.5oN and longitudes of 32.0oE and 39.0oE. These sources were redesigned and upgraded at a later stage to 18 sources. In the adopted final seismogenic source model, all sources were defined as area source models even where the fault zones are well defined both from geological and seismological grounds. This is justified by the finite width of fault zones, their inclination and the inherent uncertainty in hypocenter determinations, specifically uncertainty in the epicenters of historical earthquakes. Narrow area sources (about 20 km in width) have been established for the Dead Sea Transform system and wider sources for those zones related to areas of more distributed seismicity.

Both geometry and seismic parameters of the Yamune-Roum, the Gulf of Suez (northern and southern parts), Cyprus and the three parts of SE-Mediterranean Faults were adopted from SESAME project [Jimenez et al., 2001 and 2003] that modeled seismicity in the Mediterranean. On the other hand, geometry and seismic parameters of the Palmira source were adopted from the RELEMR-MERC project [Amrat et al., 2001], [Shamir et al., 2001], [Shapira and Hofstetter, 2001]. Seismic parameters of the remaining sources, namely the b-constant of Gutenberg-Richter relationship [Gutenberg and Richter, 1965], the upper bound magnitude M_{max} and the annual rate of seismic activity λ_4 , were determined using the Kijko and Sellevol approach [Kijko and Sellevol, 1989 and 1992].

Figure 1 delineates the adopted source model consisting of 18 seismogenic sources and regional seismicity above magnitude ML 4.0 (where ML designates local magnitude values) as given by the Jordanian seismic catalog. The seismogenic sources and their parameters are summarized in Table 1.

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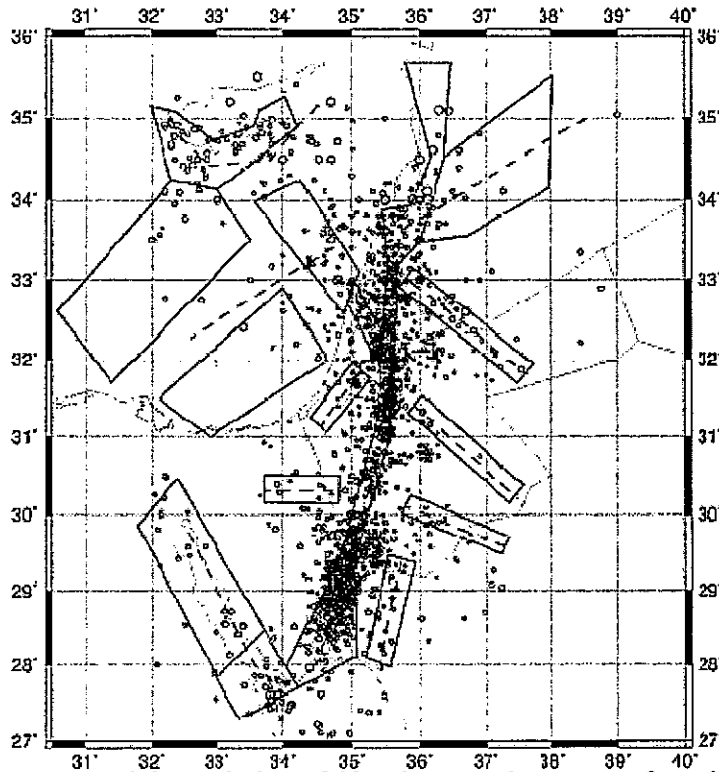


Figure 1: Seismic source model consisting of 18 seismicogenic sources & regional seismicity

Table 1: Seismogenic sources: area, width, earthquake location uncertainty and source parameters

Source	Area (km ²)	Width (km)	σ (km)	Source parameters		
				b-value	M_{max}	λ_4
Dead Sea-Jordan River	4003	20	5	0.75	7.5	0.33
Wadi Araba	3964	20	5	0.82	6.6	0.11
Yamune-Roum	11141	----	5	0.92	8.0	1.47
Palmira	22256	----	10	0.96	6.0	0.12
Gulf of Aqaba	10949	35-80	5	0.85	6.5	1.51
Gulf of Suez-South	8228	----	10	1.07	7.0	0.54
Gulf of Suez-North	22745	----	10	0.80	7.0	0.19
Sirhan Faults	7332	30	10	0.71	7.0	0.05
Fara' Haifa	2145	20	5	0.86	5.8	0.09
SE Mediterranean 1	35984	----	20	0.80	5.8	1.75
SE Mediterranean 2	22607	----	20	1.05	5.8	0.49
SE Mediterranean 3	10416	----	10	0.92	7.5	0.09
Cyprus	12327	----	10	0.98	8.0	2.74
Wadi Karak	6323	20	10	0.44	4.7	0.023
SE Maan	4337	30	10	0.29	4.6	0.029
East of Gulf of Aqaba	6168	40	10	0.40	5.9	0.054
Central Sinai	4294	40	20	0.30	4.0	0.010
North East Gaza	3248	30	10	0.34	4.5	0.022

Attenuation Relationships

Ambraseys et al. [Ambraseys et al., 1996] relationships for both Peak Ground Acceleration (PGA) and Spectral Acceleration SA in terms of M_S were used for the hazard computation. Table 2 presents the attenuation relationships from Ambraseys et al. (1996) for PGA and SA ordinates at 5% damping for 0.1s, 0.2s, 0.3s, 0.5s, 1.0s and 2.0s period in g units and site class rock ($V_s > 750$ m/s, where V_s is shear wave velocity).

The application of Ambraseys et al. (1996) relationships [Ambraseys et al., 1996] requires magnitude values given in terms of surface-wave magnitude, M_S . To handle the required magnitude conversion, as most of magnitude values in the Jordanian seismic catalog are given in terms of local magnitude, M_L , a regression has been formed on the magnitude values from the catalog. A single linear regression fit, given by Equation 1, was derived for the whole range of magnitudes:

$$M_S = 1.11M_L - 0.50, R^2 = 0.98 \quad (1)$$

Where, M_S : Surface-wave magnitude;

M_L : Local magnitude; and

R^2 : R-squared value or coefficient of determination.

Table 2: Attenuation relationships from Ambraseys et al. (1996)

Attenuation Relationship (Ambraseys et al. (1996))	h (km)	σ_{\log}
$\log \text{PGA [g]} = -1.48 + 0.266 M_S - 0.922 \log r$	3.5	0.25
$\log \text{SA 0.1 [g]} = -0.84 + 0.219 M_S - 0.954 \log r$	4.5	0.27
$\log \text{SA 0.2 [g]} = -1.21 + 0.284 M_S - 0.922 \log r$	4.2	0.27
$\log \text{SA 0.3 [g]} = -1.55 + 0.338 M_S - 0.933 \log r$	4.2	0.30
$\log \text{SA 0.5 [g]} = -2.25 + 0.420 M_S - 0.913 \log r$	3.3	0.32
$\log \text{SA 1.0 [g]} = -3.17 + 0.508 M_S - 0.885 \log r$	4.3	0.32
$\log \text{SA 2.0 [g]} = -3.79 + 0.503 M_S - 0.728 \log r$	3.2	0.32

Where,

PGA: Peak ground acceleration in terms of g;

SA: Spectral acceleration in terms of g;

M_S : Surface-wave magnitude;

d: Shortest distance from the site to the surface projection of the fault rupture in km;

h: Focal depth of earthquake;

σ_{\log} : Standard deviation; and

$$r^2 = d^2 + h^2 \quad (2)$$

Computational Technical Procedure and Results

The above-mentioned seismic source model is contained in the region between latitudes 27°N and 36°N, and longitudes 30.5°E and 38°E.

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Hazard computations using SEISRISKIII [Bender and Perkins, 1987] have been performed for the area stretching from 28°N and 34°N, and longitudes 33.75°E and 40°E at a grid interval of 0.1° (approximately 9 km) with a total number of computation nodes of 3355. The computations have been carried out for PGA and SA, for 0.1s, 0.2s, 0.3s, 0.5s, 1.0s and 2.0s period, at a 10% probability of exceedance in 50 years. Figures 2, 3 and 4 below display maps of PGA, SA for 0.2s period and SA for 1.0s period, respectively.

Figure 2 shows maximum PGA values of about 0.25g in the immediate vicinity of the Dead Sea, mainly in the northern parts of Jordan. Values of PGA decrease rapidly as one moves to the eastern parts of the country with approximately near zero values on the northeastern borders. Similar observations apply to the two maps of spectral acceleration. Computation results clearly indicate that, compared with countries of higher seismic risk, seismicity in Jordan can be described as "moderate".

In a recent study conducted by Yucemen et al. [Yucemen et al., 2005], it was concluded that the hazard computed for four main cities in Jordan was highly dependent on the model used for magnitude distribution.

Consideration of the characteristic earthquake model as an alternative to the exponential magnitude distribution for major faults revealed that PGA and SA values were 1.4 to 1.6 times more than those obtained based on the assumption that earthquake magnitudes are exponentially distributed. Thereby, indicating the importance of the use of an appropriate recurrence model.

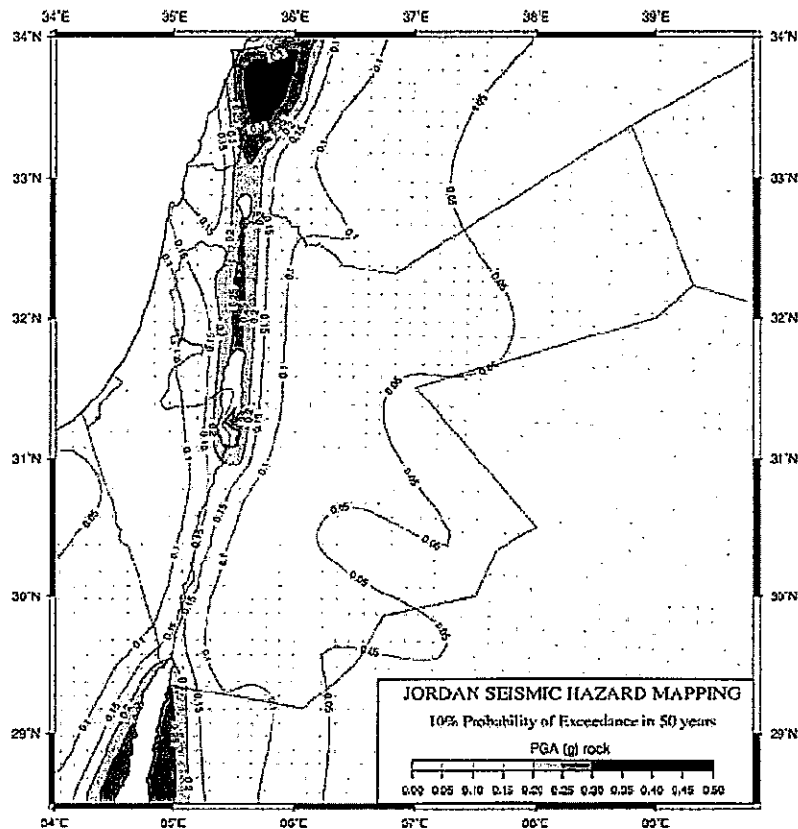


Figure 2: PGA contours at 10% probability of exceedance in 50 years and computation nodes

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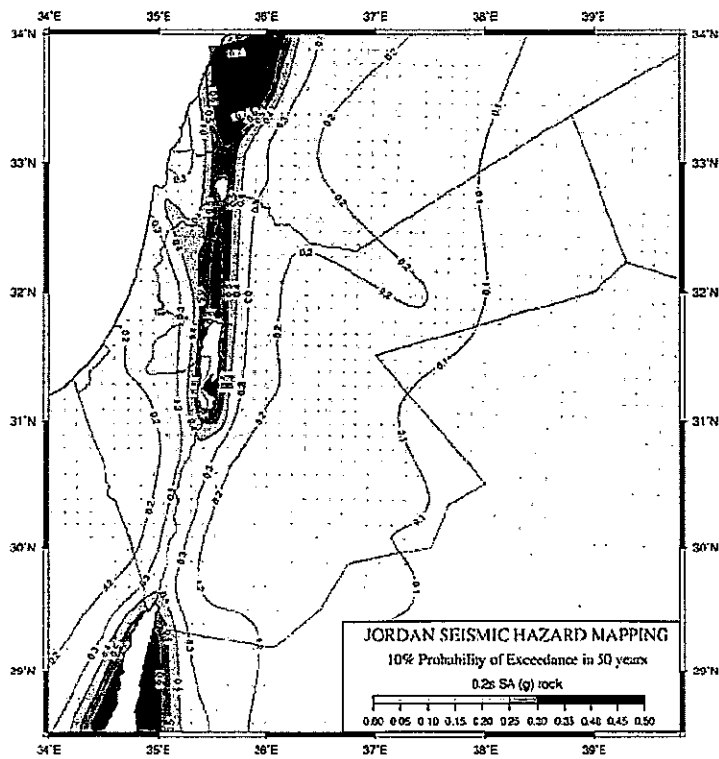


Figure 3: SA (0.2s) contours at 10% probability of exceedance in 50 years and computation nodes

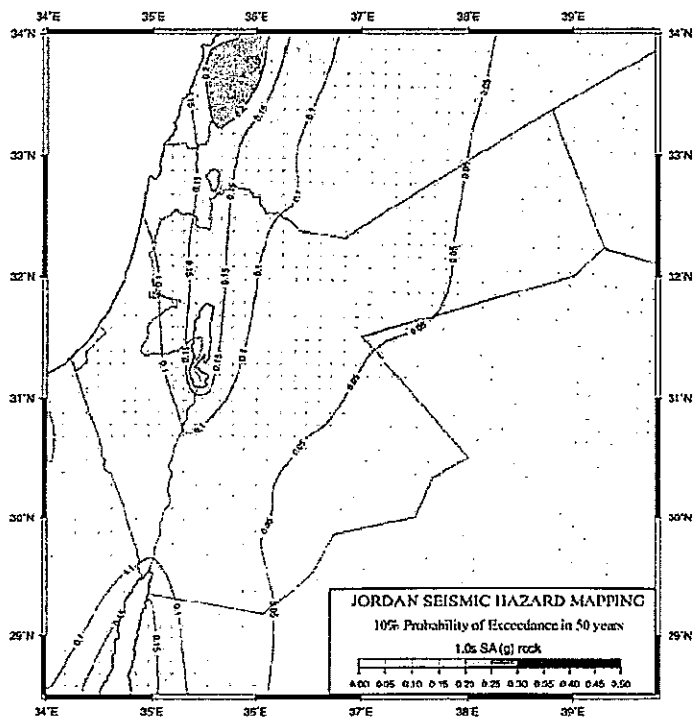
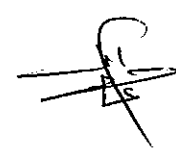


Figure 4: SA (1.0s) contours at 10% probability of exceedance in 50 years and computation nodes



Macrozonation and Response Spectra

To develop the required response spectra for structural design, the following methodology was adopted. Jordan was initially divided into five different zones, as shown in Figure 5, and an elastic response spectrum was developed for each zone. As the seismic zonation adopted in the Jordanian Code for Earthquake-Resistant Buildings [Jordanian National Building Council, 2005] follows that of the Uniform Building Code, UBC, [International Conference of Building Officials, 1997], the shape of the developed spectrum was pinned to that of the Uniform Building Code.

Considering soil type SB, (site class rock, $V_s > 750$ m/s), for which the hazard values were computed, the spectral acceleration of the UBC spectrum is given (in terms of the gravitational acceleration, g) by four equations of a linear single degree of freedom system for four intervals of the vibration period (T):

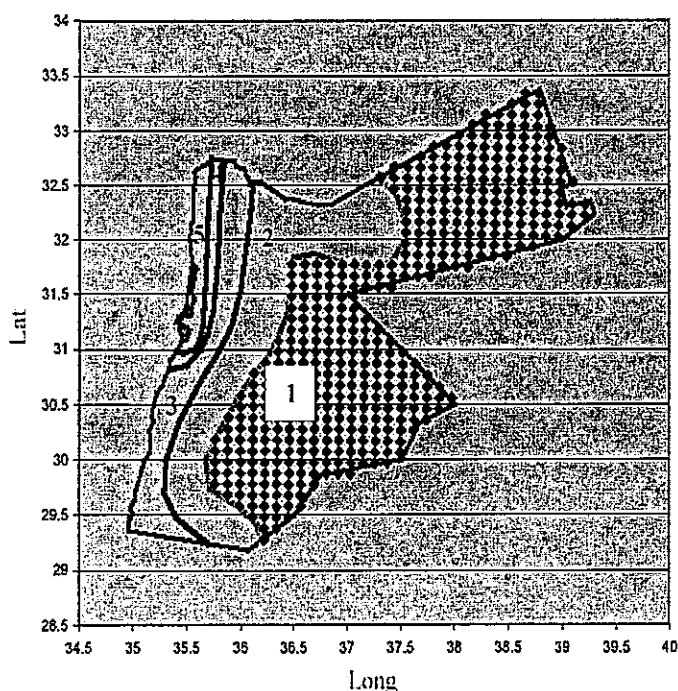
for	$T = 0$	$SA = C_a$	(3)
	$0 < T < T_o$	$SA = ((2.5C_a - C_a) T/T_o) + C_a$	
	$T_o \leq T \leq T_s$	$SA = 2.5C_a$	
	$T > T_s$	$SA = C_v/T$	

where $T_s = C_v/2.5C_a$ (4)

$T_o = 0.2T_s$

C_a and C_v are numerical coefficients for the soil type under consideration

It should be noted that for soil type S_B , the C_a and C_v values are equal.



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Figure 5: Initial zoning suggested for Jordan with the computation nodes of Zone 1

For each of the five initial zones, the average of the computed spectral acceleration values (for periods of 0.1, 0.2, 0.3, 0.5, 1.0 and 2.0 seconds) for the nodes within the zone were used to build the spectrum. In the eastern zones, the median plus sigma values were used and the spectral envelop was chosen to provide conservative values all over the range of periods considered as shown in Figure 6. In the central and western zones, the spectral envelop was chosen based on the response spectra using both median and median plus sigma values with a less conservative fit in the region between 0.08 and 0.4 seconds. Figure 7 displays spectra fitting for zone 4.

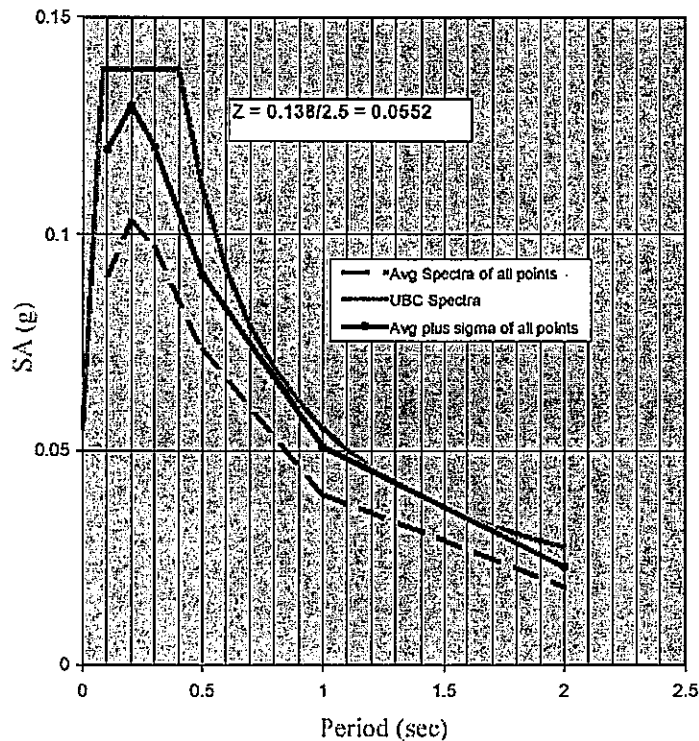


Figure 6: Spectrum fitting for Zone 2

The spectral acceleration value of the spectrum plateau of the fitted curve (i.e., SA value for periods between 0.08 and 0.4 seconds) was used to calculate the Z value, which is directly related to the effective peak ground acceleration, for the considered zone as given by Equation 5:

$$Z = \text{value of the spectrum plateau} / 2.5 \quad (5)$$

Table 3 summarizes the resulting Z values for the five considered zones. Although the eastern part of Jordan showed low hazard values in terms of the effective peak ground acceleration, a minimum Z value of 0.06 was arbitrarily assigned to the two most eastern zones.

Based on the results presented in Table 3, zones 1 and 2 were merged into a single zone with a Z factor of 0.06. Similarly, the two central zones, zones 3 and 4, were merged into a unified zone with a Z factor of 0.10 whereas the western zone was assigned a Z value of 0.15. Figure 8 displays the final macrozonation suggested for Jordan whereas Figure 9 displays the response spectra for the three suggested zones.

However, it should be pointed out that this suggested zoning scheme differs from that adopted in the Jordanian Code of four seismic zones: 1, 2A, 2B and 3 with Z values of 0.075, 0.15, 0.20 and 0.30, respectively.

In view of available data and until further refined information can be gathered on attenuation models suitable for the local geology and crustal formations in Jordan, the results of this assessment instigate robust and long term strategies for the mitigation of seismic hazard in Jordan. Future efforts should be directed towards verification of historical seismic events embodied in the seismic catalogue as these major events have a great impact on the seismic parameters, specifically M_{max} , derived for the different sources and thereby on the computed hazard values

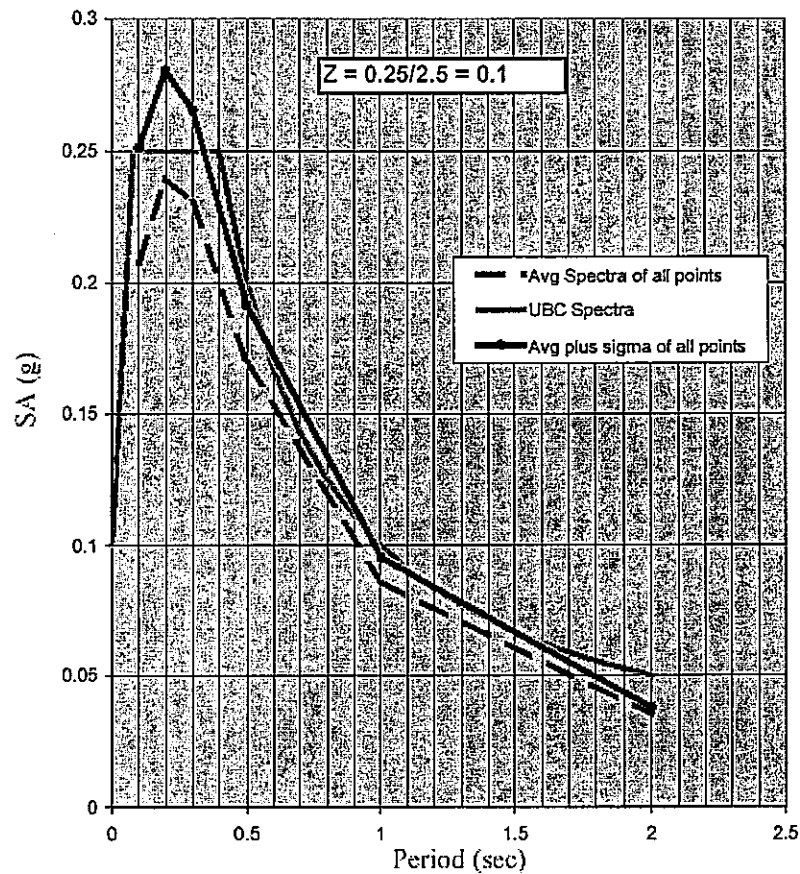


Figure 7: Spectrum fitting for Zone 4

Table 3: Z values for the five suggested zones

Zone Number	Plateau value	Computed Z value	Suggested Z value
1	0.093	0.037	0.06
2	0.138	0.055	0.06
3	0.210	0.084	0.10
4	0.250	0.100	0.10
5	0.370	0.148	0.15

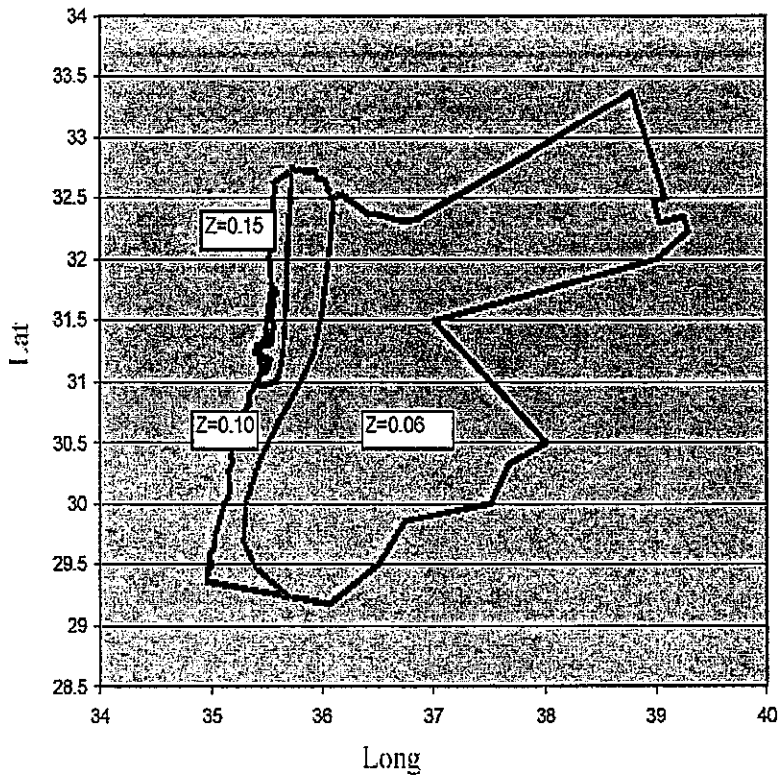


Figure 8: Proposed macrozonation map for Jordan

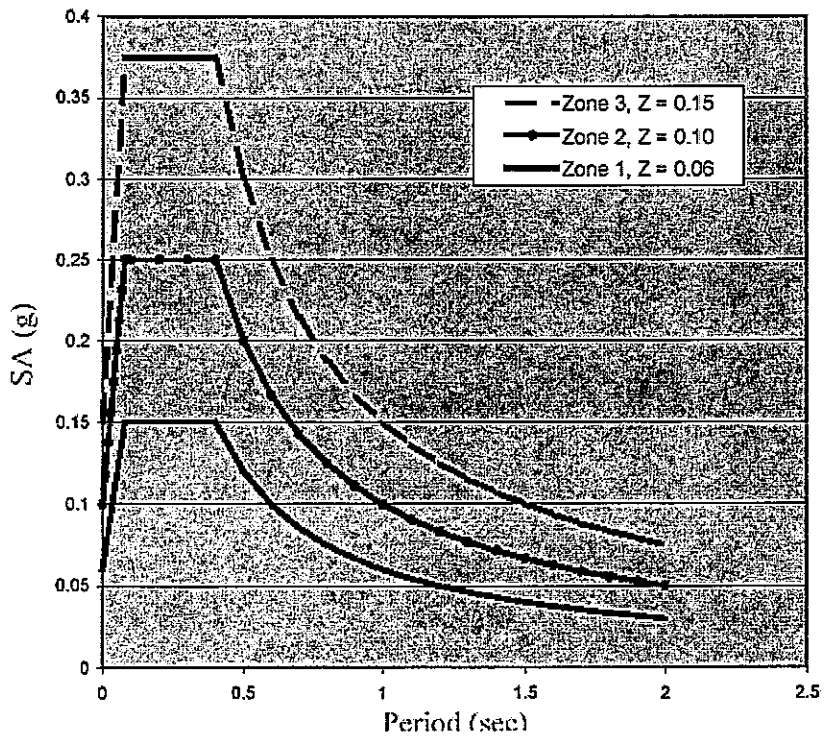


Figure 9: Proposed response spectra for



Seismic Risk Assessment for Aqaba Project

**Proposal Submitted to the United Nations Development
Program, UNDP for Funding**

**By: The Building Research Center (BRC), Royal Scientific
Society (RSS), Jordan**

April, 2008

1. BACKGROUND

Historically, Aqaba city, the orphan port in Jordan and its only access to sea, has been subjected to a number of devastating earthquakes. Ayla, the early Islamic port of Aqaba was founded about 650 A.D., and it remained an important port until it was heavily damaged by an earthquake in 1068 A.D. Although, it has been a long time since the last damaging earthquake struck the area, but recent seismological and archaeological studies clearly indicate a high possibility for large earthquakes affecting the city and other urban centers on both sides of the Dead Sea Transform System. The Dead Sea Transform System extends from Aqaba in the south through Wadi Araba, the Dead Sea and River of Jordan and enters the Syrian borders, continuing through Syria and Lebanon and ending in southern Turkey and constitutes the major source of seismicity in Jordan. In a recent assessment of the seismic hazard in Jordan, carried out by the Building Research Center of the Royal Scientific Society in collaboration with the Institute of Earth Sciences/Spain, Aqaba was categorized as a zone of moderate seismicity with peak ground acceleration (PGA) in the range of (0.15–0.25) g, where g is the gravitational acceleration of (9.81) m/s². These PGA values were calculated for rock soils, shear wave velocity exceeding (750) m/s and for a (10) % probability of exceedance in (50) years. Keeping in mind local site effects and topographical effects, structures such as buildings, lifelines and infrastructure are expected to experience a higher level of vibration therefore posing a higher level of seismic demand.

Needs for Seismic Risk Assessment for Aqaba

Aqaba was recently allocated as a special economical zone opening the door for huge investments especially in the area of tourism and relevant services. The vast urban and population growth expected in Aqaba within the coming few years will increase substantially the seismic risk in this area.

In order to minimize human and financial losses due to earthquakes, seismic risk which is a function of the seismic hazard and the vulnerability of the built environment in addition to the monetary value of the buildings and the infrastructure, must be assessed.

The outcomes of the suggested assessment of the seismic risk in Aqaba would provide the necessary information for legislators and scientists as well, to quantify the level of seismic risk affecting the city (study area). The first step in the process of mitigating earthquake hazards in a region is to define the level of acceptable risk versus the actual risk level, in order to implement effectively mitigation measures and strategies to lower, if necessary, the level of seismic risk to acceptable limits and thereby minimize human and financial losses to "acceptable" levels. Running earthquake scenarios and determining the expected levels of building damage and the number of fatalities and injuries are crucial for preparedness plans that must be based on realistic estimates of damage and fatalities. Damage and fatalities' estimates are also needed during the "response" stage wherein efficient emergency plans are needed to manage and reduce earthquake losses, both human and financial. The earthquake risk assessment study of the city of Aqaba will provide city officials with the information required to develop a master plan for earthquake risk management which in turn will provide a framework for earthquake risk reduction.

Moreover, an assessment of the seismic risk in Jordan at large, part of which is the risk assessment for Aqaba, is required to enable the insurance section to come up with reasonable estimates for insurance premiums for buildings and infrastructure. In summary, an earthquake risk assessment would serve the goals of all parties engaged in the process of human life protection and sustained development.

The project is in line with recommendations of the UN Common Country Assessment CCA (2008-2011) to enhance capacity of the Government and CSOs to prevent, respond to and mitigate natural and man-made disasters and to UNDP country programme, and the UNDP Country Programme (2008-2011) to enhance capacity of the Government and CSOs to prevent, respond to and mitigate natural and man-made disasters UNDP country programme.

It complements ongoing UNDP interventions including Support to Building National Capacities for Earthquake Risk Reduction at Amman Municipality in Jordan project which aims to establish an integrated disaster risk management process, which will equip the city of Amman with a Disaster Risk Management Master Plan (DRMMP) that is anchored in a sound institutional framework and will be based on the risk profile of the city, and the UNDP regional project "Sub-regional Facility for Cooperation in Disaster Reduction among the Arab States", which will support the strengthening of regional and national capacities through the development of a sub-regional platform to facilitate the sharing and networking of knowledge and the development of common approaches to training and capacity building based on good practices and experience within the sub region, as well as the RSS/ SDC project under implementation and aimed at the following:

- Preparing seismic hazard maps of spectral acceleration for Jordan and Response spectra for different soil conditions as suggested by the Swiss review. These maps shall be included in future Jordanian building codes of practice;
- Preparing a microzonation seismic hazard map of spectral acceleration for Aqaba City. The objective of this microzonation project is not only to furnish the information necessary for future development of the area but also to develop expertise among Jordanian specialists in the field of seismic hazard mitigation and microzonation.;
- Assessment of the seismic vulnerability of buildings in Jordan; and
- Assessment of the current local construction practice, and defining its deficiencies and methods to improve structural performance of future buildings.

2. OBJECTIVES

The main objective of the proposed project is to conduct an earthquake risk assessment (ERA) for the city of Aqaba. The results of the risk assessment can be used by policy makers to set plans for the different links of the seismic risk mitigation chain: that is to integrate risk assessment and risk management. In order to do so, realistic and cost-effective public policies should be enacted and implemented to determine the unacceptable level of seismic risk and then community specific mitigation measures should be devised and implemented to reduce the community's vulnerabilities and unacceptable risks.

Although Aqaba is one of the very few cities in Jordan that already has developed an emergency plan for earthquakes, the city plan is only focused on the co- and post seismic intervention. However, the disastrous effects of large earthquakes can be greatly reduced if proper plans are set up in advance to tackle mitigation, preparedness, emergency response, and recovery and reconstruction measures and regulations. Such plans need to be based on realistic and comprehensive ERA studies for the area under consideration, which include the following:

- Assessment of the earthquake hazard and determination of earthquake scenarios;
- Assessment of the seismic vulnerability of buildings and engineering construction in the area; and
- Calculation of the expected damage in the city for different earthquake scenarios.

3. METHODOLOGY

In order to carry out an integrated earthquake risk assessment for the city of Aqaba and achieve the objectives of this proposed project, the following methodology will be adopted during a period of 24 months.

- Assessment of seismic hazard based on the seismo-tectonic structure, surface geology and local site conditions. Both macro and micro scale hazard assessment are required in the analysis of urban seismic risk.
- Calculation of hazard values in the city resulting from deterministic hazard analysis, which is from scenario earthquakes.
- Inventory of buildings, lifelines and infrastructure for a selected target area within the city.
- Classification of the vulnerability of the built environment to earthquake damage for the target area. Damage to infrastructure and lifelines will be addressed in general terms based on the intensity levels of ground shaking.
- Realization of damage scenarios (building damage, fatalities and casualties and people left homeless). The quantification of building losses is directly related to casualties, planning of emergency response, first aid and emergency shelter needs.
- Development of a Disaster Risk Management Master Plan for Aqaba city
- Public dissemination of the project's results to the public and policy makers to enable proper disaster mitigation and response planning.

Detailed Implementation Plan for full duration of the project

The proposed work will be divided into five work packages as follows:

Work package 1: Seismic hazard assessment for Aqaba city

The results of RSS/SDC project under implementation, Mitigation Earthquake Hazard in Jordan), which are:

- Geological maps with active faulting systems in GIS format;
- Maps showing geotechnical information and soil classification GIS format; and
- Seismic hazard maps with spectral acceleration values at the surface, taking into consideration local site effects.

Will be used and modified based on the new seismic sources (Barcelona - RELEMR Conference 2006) to produce a new micro-zonation map for Aqaba city. It is anticipated to include the new map in the Earthquake-Resistant Structures Code.

It is believed that further information is required regarding the segmentation of the main Dead Sea Transform Fault as well as information on the length of active faults in Aqaba. Available geological and geophysical data will be augmented through further investigation and data collection to identify and characterize the relevant seismic sources. The geological maps developed in the aforementioned project will be revised based on the acquired information. This part of the project will be carried out with geological and geophysical experts from RSS consortium in collaboration with consultants from NRA and private sector.

This activity will result in a thorough characterization of the seismic hazard in Aqaba as related to direct effects of earthquakes (landslides and liquefaction will not be considered). This activity would serve as the basis to identify possible earthquake scenarios that will be used in later activities (i.e., to run the earthquake scenarios and determine human and monetary losses).

This output would also include dissemination of the acquired knowledge to public and policy makers: Two workshops, with the aim of dissemination of the acquired knowledge will be held within the project duration. The workshops, specifically the one held towards the completion of the project, will also propose risk reduction strategies that will be based on the outcomes of the suggested project.

The intended workshops would serve as a major tool in spreading not only the acquired knowledge, but also the necessary awareness on the level of seismic threat and seismic risk within the study area and the variety of measures that can be implemented to reduce the earthquake risk to acceptable levels. The targeted audience would include decision-makers, policymakers as well as the engineering practitioners and members of the various community sectors that are expected to take part in the development of the Aqaba free economic zone. The workshops will be directed mostly towards the people working in the field of earthquake risk reduction, thereby allowing for better exchange of information and realization of needs, which in turn may affect the project's work plan.

Indicative Activities:

- Geological investigation of the study area;
- Geophysical investigation of the study area;
- Determination of most probable earthquake scenarios for the study area; and
- Dissemination of knowledge.



Work Package 2: Set of vulnerability functions for buildings, lifelines and infrastructure adapted for the specific types present in Aqaba

An inventory of buildings (residential, commercial, hospitals and schools) and infrastructure, i.e. the various components of the built environment in Aqaba will be developed. Each of these components will be divided into a number of specific categories and vulnerability functions will be developed or adapted from the literature for each of these categories.

The inventory of the built environment will be developed through a geographical information system (GIS) which will allow for easy sharing of the information with other institutions or individuals carrying out risk assessment analyses.

Indicative Activities:

- Inventory of Buildings in GIS format;
- Inventory of lifelines and infrastructure in GIS format;
- Sets of vulnerability functions for buildings and lifelines in the study area; and
- Dissemination of knowledge.

Work Package 3: Quantification of the earthquake expected damage and losses based on earthquake scenarios

This will include the development of scenario information, running the relevant earthquake scenarios and determining the resulting damage for buildings and infrastructure. This would also result in best estimates for the number of casualties (injuries and deaths) for the different scenarios.

The values and spatial distribution of the losses would serve the development of an integrated earthquake risk management plan. Such a plan should include all the links of the earthquake risk reduction strategy, namely: mitigation, preparedness, emergency response and recovery and reconstruction. Each of the four branches of seismic risk reduction mentioned above relies heavily on the results of the ERA proposed for the city of Aqaba.

Earthquake risk assessment results in maps and analysis products associated with loss estimation assessment models. On the other hand, earthquake risk management may utilize the resulting maps for regulation of new and existing community development (urbanization). The maps can be used to identify which parts of a geographic area are "safest" for a certain type of construction and which parts are "hot spots" that must be avoided. Furthermore, the resulting maps provide community decision-makers and policymakers with a sound basis for enacting and implementing mitigation, preparedness, emergency response and recovery measures to best fit the economical constraints and limitations for the city and therefore integrating the process of risk reduction into community development.

Indicative Activities:

- Quantification of the earthquake-inflicted damage for a moderate earthquake scenario.
- Quantification of the earthquake-inflicted damage for a major earthquake scenario.

Work Package 4: Development of a Disaster Risk Management Master Plan for Aqaba city

Based on the results of this study and the outcomes of Amman Project, a Disaster Risk Management Master Plan (DRMMP) for Aqaba city will be developed. This plan will be the foundation to make Aqaba seismically resistant at all levels, citizenry, business, and government, wisely living with the earthquake hazard that naturally exists in this region. This means that when earthquakes occur, there is little or no loss of life, injuries are kept to a minimum and property and infrastructure losses are minimized and not critical. It also requires rapid emergency response that is well-organized, effective, and with adequate resources. Recovery must be rapid with minimal loss of business, and a complete return to the prior, or better, standard of living.

Indicative Activities:

- Proposed Disaster Risk Management Master Plan for Aqaba city
- Dissemination of knowledge.

4. DELIVERABLES

The projects deliverables are:

- New geological maps with active faulting systems;
- Inventory of buildings, lifelines and infrastructure for the study area in GIS format;
- Sets of vulnerability functions for buildings, lifelines and infrastructure adapted for the specific types present in Aqaba.
- Technical reports quantifying the earthquake expected damage and losses based on relevant earthquake scenarios. The reports will also include recommendations for earthquake risk mitigation strategies as well as cost-benefit analysis of earthquake resistant design in conformance with the stipulations of the national seismic code;
- Development of a Disaster Risk Management Master Plan for Aqaba city
- Three workshops with the aim of dissemination of the acquired knowledge to public and policy makers.

5. NEEDED FUNDS

It is expected that the total budget needed to execute all the activities of the project is One Hundred and Eighty Thousands US Dollars (\$ 180,000), as illustrated in Tables 1 and 2 hereunder. Details about the Offeror (RSS Consortium) and the resources are illustrated in Appendix 1, and detailed breakdown of the budget per activity is illustrated in Appendix 2.

**Table (1): Annual work plan budget sheet
Year: 2008-2009**

Expected Outputs and Indicators including Annual Targets	Planned Activities	Timeframe				Responsible Party	Planned Budget			
		Year 2008		Year 2009			Source of Funds	Budget Description	Amount (\$US Dollars)	
		Q3	Q4	Q1	Q2					
Seismic Hazard Assessment for Aqaba	Geological and geophysical investigations	x				RSS Consortium	BCPR	Personnel	18,500	
			x				BCPR	consumables	0	
							BCPR	Use of Equipment	0	
							BCPR	Travel	0	
							BCPR	Management	0	
	Earthquake scenarios		x				RSS Consortium	BCPR	Personnel	16,000
				x				BCPR	Consumables	1,500
					x			BCPR	Management	0
								BCPR	Conducting Training	12,000
								BCPR	Personnel	20,000
Vulnerability functions for buildings, lifelines and infrastructure adapted for the specific types present in Aqaba.	Inventory of buildings in GIS format		x			RSS Consortium	BCPR	Consumables	0	
				x			BCPR	Travel	0	
					x			BCPR	Management	0
	Inventory of lifelines and infrastructure in GIS format		x				RSS Consortium	BCPR	Personnel	23,000
				x				BCPR	Travel	2,000
					x			BCPR	Management	1,500
								UNDP	Personnel	15,000
	Sets of vulnerability functions for the different categories of buildings, infrastructure and socio-economic conditions.									
	TOTAL									109,500

Table (2): Annual work plan budget sheet
Year: 2009-2010

Expected Outputs and Indicators including Annual Targets	Planned Activities	Timeframe				Responsible Party	Planned Budget		
		Year 2009		Year 2010			Source of Funds	Budget Description	Amount (\$US Dollars)
		Q3	Q4	Q1	Q2				
Vulnerability functions for buildings, lifelines and infrastructure adapted for the specific types present in Aqaba. (Continuation)	Inventory of buildings in GIS form	X				RSS Consortium	BCPR	Personnel	12,500
							BCPR	Use of Equipment	0
							BCPR	Travel	0
							BCPR	Consumables	0
	Inventory of lifelines and infrastructure in GIS format	X				RSS Consortium	BCPR	Personnel	8,500
	Sets of vulnerability functions for the different categories of buildings, infrastructure and socio-economic conditions	X				RSS Consortium	UNDP	Personnel	15,000
Quantification of the earthquake expected damage and losses based on earthquake scenarios	Earthquake expected damage and losses for a moderate earthquake	X	X			RSS Consortium	SDC	Personnel	24,000
							SDC	Management	0
		X	X			RSS Consortium	SDC	Personnel	10,500
Development of a Disaster Risk Management Master Plan for Aqaba city	Development of a Disaster Risk Management Master Plan for Aqaba city			X		RSS Consortium	SDC	Management	0
							SDC	Conducting Training	0
						RSS Consortium	UNDP	Personnel	0
TOTAL				X	X	RSS Consortium	UNDP	Management	0
							UNDP	Consumables	0
									70,500

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Appendix 1

MANAGEMENT PLAN

Offeror Description

Royal Scientific Society (RSS) is a non-governmental (NGO) non-profit institution that works under the umbrella of Al Hassan Science City. The Building Research Center (BRC) of RSS is a technical center that fosters the development of the construction industry in Jordan. BRC aims at enhancing and developing construction materials and systems, design procedures, buildings codes and specifications as well as testing and calibration. BRC provides consulting and technical services associated with civil engineering research and practice. Appraisal and rehabilitation of structures including condition evaluation, repair and retrofitting, is only one of the themes that BRC is known to be competent for research and research & development.

BRC is engaged in the development of codes, specifications and manuals for guidance in the design and construction practice in Jordan. RSS was commissioned by the Ministry of Public Works and Housing (MPWH) for the development of more than 33 codes that address the different areas of the construction process. RSS, represented by its President, is a member of the Jordan National Building Council which issues the building codes. BRC Director is also a member of the Technical Committee for Codes formed by the council.

BRC, represented by its Director, is also a member of the National Technical Committee for Earthquakes that was formed by the Minister of Public Works and Housing to assess and encourage studies related to earthquake engineering.

BRC has also well established relation with the Jordan Engineering Association (JEA), and has always played a major role in the dissemination of acquired knowledge and know how and in improving training opportunities for young engineers as well as training courses on several specialized subjects related to design of new buildings and repair and rehabilitation of existing buildings. BRC, represented by its Director, is a member of the Board of Directors of the Engineering Training Center (ETC).

Over the past two decades, BRC has been seriously engaged in the area of mitigation of seismic hazard in Jordan. BRC carried out several studies concerning:

- Retrofit and repair of structures affected by the November 1995 Aqaba earthquake.
- Assessment of seismic hazard in Jordan and development of hazard maps.
- Development of building codes including seismic code.
- Microzonation and local site effects.
- Assessment of seismic vulnerability of low-rise residential buildings.
- Structural testing of wall panels.
- Modeling and analysis of structures to determine dynamic properties of local structural elements.

Due to limited resources, BRC had to seek the collaboration of external (regional and international) support in carrying out the above mentioned studies. Keeping in mind that BRC is the only research institute in Jordan that is devoting its effort to the subject of seismic risk (integrating all links of the seismic risk cycle), and the impact of this effort on the safety and welfare of the national and regional community.

Offeror Experience in Similar Projects

BRC of RSS has conducted the following projects:

- Earthquake Resistant Buildings Code.
- Study on evaluating earthquake hazards and methods of mitigating their environmental impact. The project was supported by the higher Council for Science and Technology (HCST).
- Seismic Hazard Mitigation in Jordan. The project is funded and supported technically through the Swiss Agency for Development and cooperation (SDC). The project includes two main parts: One seismological and the other structural. In the seismological part seismic hazard maps for Jordan were prepared and a pilot microzonation study was carried out for the city of Aqaba including shear wave velocity measurements as well as ambient vibration measurements.
- Assessment Criteria of Earthquake-Damaged Concrete Buildings. The purpose of the project is to produce a report and a field manual that serve as a blueprint for efficiently setting up and carrying out rapid operations of post-earthquake building inspection in populated areas stricken by an earthquake. Such inspection will identify those buildings that are safe for immediate use or occupancy, and those that are unsafe so that people will be kept away from using or entering them.
- Retrofit and repair of structures affected by the November 1995 Aqaba earthquake, such as Aqaba Observation Tower for the Port Cooperation, and the Filtration Unit for the Phosphate Mines Company.

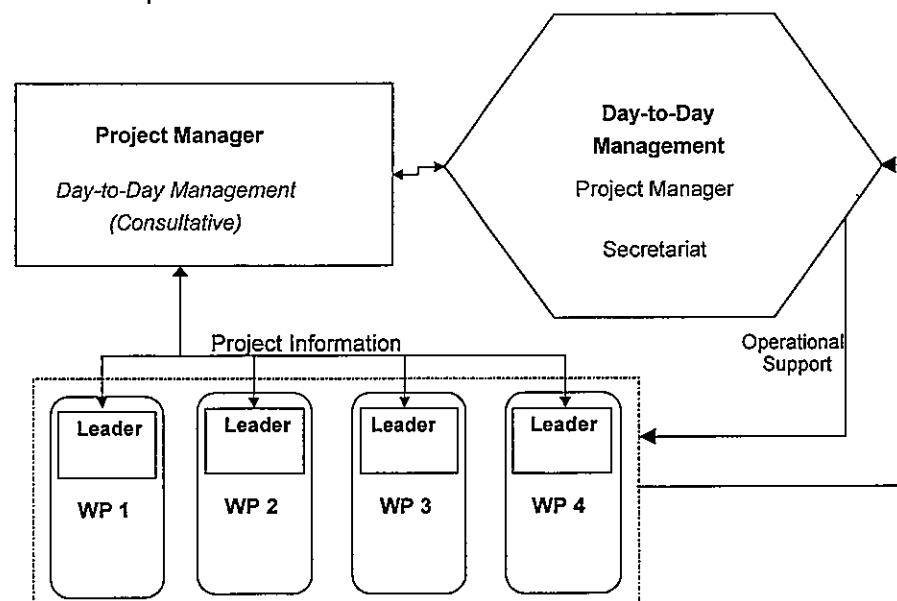
General Offeror Management Approach

In such projects, the Director of the BRC selects a research team from the experienced staff and external expertise headed by a project manager, secretariat and a leader for each work package.

The work team is responsible for carrying out the project activities in accordance with their expertise following the time schedule and work plan. Additionally, the work team is responsible for preparing the deliverables following the milestones.

On the other hand, the project manager oversees all aspects of the project using planning, monitoring and controlling processes. The Project Manager is responsible for co-ordination and completion of the project and to this end will perform a variety of tasks including setting deadlines, assigning responsibilities, and monitoring and summarizing progress of the project.

The management structure is presented in schematic form herein under.



Responsibilities of the Project Manager and the Secretariat

On behalf of BRC/RSS, Dr. Tareq Al Hadid will be responsible for the technical, financial and administrative management on a day-to-day basis. Dr. Al Hadid has during the last twelve years participated as principal researcher in a number of projects, as can be seen in his C.V. (attached herewith), of which projects funded by the Higher Council of Science and Technology (HCST), European Community (EC) and the Swiss Agency for Development and Cooperation (SDC). He has sound technical experience in the assessment of seismic hazard in Jordan, assessment of seismic vulnerability of residential buildings and microzonation and local site effects.

Dr. Al Hadid will be the official contact point for the UNDP and ASEZA. The role of the project manager is summarized in the following table:

Role of Project Manager	
Reporting to	ASEZA and UNDP
Detailed Role	<p>The Project Manager has the authority to run the project on a day-to-day basis (on behalf of Executing Entity: ASEZA). The Project Manager should have sufficient latitude to exercise a wide degree of creativity in performing the following tasks:</p> <p>Planning and problem-solving tasks</p> <p>The Project Manager is responsible for planning the project in order to accomplish its goals or produce the deliverables required within the timeframe, cost and agreed quality.</p> <p>The Project Manager must continuously monitor progress in terms of the status of the plan and the budget and report to ASEZA and UNDP monthly and organizing and managing status meetings and board meetings.</p> <p>The Project Manager should identify, log, analyze and manage potential and actual issues and risks, taking corrective action by tackling day-to-day issues head on and reviewing how more serious issues and risks might affect scope, schedule, quality and cost.</p> <p>Team management tasks</p> <p>The Project Manager may work directly with the researchers or with their Work Package Leaders to estimate effort, plan activities and negotiate consensus among individual team members on their appointed tasks.</p> <p>A Project Manager may need to be experienced in providing a team with direction and vision, including motivating people to perform, listening to people, providing feedback, recognizing strengths and providing challenges.</p> <p>The Project Manager is likely to be responsible for bringing the project to a close, which may include creating an end of project report or evaluation document.</p> <p>Technical and quality tasks</p> <p>Understand and question requests coming from researchers and technical staff and to evaluate what is reasonable or possible.</p> <p>Ensures that all project team members understand and follow methodologies, processes and standards.</p> <p>The Project Manager is responsible for the project's commitment to quality – also referred to as fitness for purpose or specification level.</p> <p>Organizing tasks</p> <p>The Project Manager need to generate needed document, including requirement specifications, contracts, schedules, personnel records, project reports, communication (email) records, design specifications, meeting agendas, minutes and status reports.</p> <p>The Project Manager need to create a structure for project documentation and remain conscientious in using it and ensuring that the rest of the team understands and uses it.</p>

Whereas, the secretariat will report directly to the project manager and their responsibility is illustrated in the table hereunder.

Role of Secretariat Day to day management	
Legal and contractual	Permanent contact point for the project manager and the research team, responding to any relevant requests and maintaining a high level of communication.
Financial and administrative	Managing the delivery and the follow-up of administrative and financial documents, and thus reduce the delays during the project and meeting deadlines.
	Easing the project manager of administrative tasks and notifying the research team of due dates.
	Preparing and animating the official meetings

Responsibilities of the Work Package Leaders

The work package leaders will be responsible for the technical follow up of their specific work packages and will work in close collaboration with the project manager for the general project management.

The responsibilities of the work package leaders are presented in the table hereunder.

Role of Work Package Leaders	
Work Progress	Reporting and follow up of deliverables and milestones (scheduling) to the project Manager.
	Initiating and participating actively to the technical meetings necessary for work progress and report minutes.
	Reporting of the WP progress at each meeting.
Quality	Ensuring the accomplishment of the technical objectives of the work package.
	Assessing the quality of the outputs from their WP including the level of quality of their own deliverables.
	Archiving all documents related to the work package he/she is leading.
Global Project Management	Referring to the project manager in case of major issue that affects the completion of the work foreseen.

Quality Assurance

The policies and procedures of the RSS quality system, which is contained in a Primary Quality Manual for the whole of RSS and the secondary quality manual concerning BRC, will be followed for the homogenization of the quality of the results and to avoid the negative effects of technical and non-technical risks. Quality will be followed through several indicators: planning, milestones, reports and deliverables. Since the control of the project risks is a continuous process, BRC quality officer will be in charge of the continuous follow-up, and a session dedicated to risk will be held during each meeting. The secretariat of the project will take care of recording the documentation associated to this risk control.

V. ANNEXES:

Annex 1: SITUATION ANALYSIS



Background

Historically, Aqaba city, the orphan port in Jordan and its only access to sea, has been subjected to a number of devastating earthquakes. Ayla, the early Islamic port of Aqaba was founded about 650 A.D., and it remained an important port until it was heavily damaged by an earthquake in 1068 A.D. Although, it has been a long time since the last damaging earthquake struck the area, but recent seismological and archaeological studies clearly indicate a high possibility for large earthquakes affecting the city and other urban centers on both sides of the Dead Sea Transform System. The Dead Sea Transform System extends from Aqaba in the south through Wadi Araba, the Dead Sea and River of Jordan and enters the Syrian borders, continuing through Syria and Lebanon and ending in southern Turkey and constitutes the major source of seismicity in Jordan.

On November 22, 1995 the Gulf of Aqaba region was shaken by a strong earthquake with magnitude of 6.2 on Richter scale that was felt at distances of up to 600 km. This was one of the largest earthquakes that occur along the Dead Sea fault system (DSFS) during the 20th century. This earthquake was followed by an aftershock sequence that lasted for more than one year, with numerous shocks exceeding a magnitude of 5.0. Buildings and lifeline systems in the epicentral region performed poorly during the earthquake.

In a recent assessment of the seismic hazard in Jordan, carried out by the Building Research Center of the Royal Scientific Society in collaboration with the Institute of Earth Sciences/Spain, Aqaba was categorized as a zone of moderate seismicity with peak ground acceleration (PGA) values ranging between 0.15g and 0.25g where g is the gravitational acceleration of 9.81m/s². These PGA values were calculated for rock soils (shear wave velocity exceeding 750 m/s) and for a 10% probability of exceedance in 50 years. Keeping in mind local site effects and topographical effects, structures (buildings, lifelines and infrastructure) are expected to experience a higher level of vibration therefore posing a higher level of seismic demand.

Needs for Seismic Risk Assessment for Aqaba

Aqaba was recently allocated as a special economical zone opening the door for huge investments especially in the area of tourism and relevant services. The vast urban and population growth expected in Aqaba within the coming few years will increase substantially the seismic risk in this area.

In order to minimize human and financial losses due to earthquakes, seismic risk which is a function of the seismic hazard and the vulnerability of the built environment in addition to the monetary value of the buildings and the infrastructure, must be assessed.

RESOURCE PLAN



Key Personnel

Tareq Al Hadid: Director, BRC; he assumed the post of director of the RSS Building Research Centre (BRC). Dr. Al Hadid obtained his PhD. degree in civil engineering from the University of Sheffield in England. He held several posts at the BRC and abroad. He carried out several research studies among which are mitigation of seismic risk in Jordan, seismic hazard mapping, microzonation of Aqaba and assessment of seismic vulnerability of residential stone-concrete buildings, the Use of Advanced Composites as Replacement to Steel in Marine and Industrial Structures as Protection to Concrete Deterioration in addition to Application of Fiber Plastics as External Reinforcement for Concrete Structures with High Content of Moisture and Salt, in addition to a number of structural studies concerning the assessment and retrofitting. Dr. Hadid is a member of several engineering associations in Jordan and abroad. He also has several publications.

Amal Al Far: Head of the Civil Studies Division and Researcher at the Building Research Center of the Royal Scientific Society, she has PhD. Degree in Civil Engineering from the Technical University of Braunschweig at Germany, 2006. The main interests are in earthquake engineering, retrofitting and rehabilitation of deteriorated concrete structures, durability of concrete structures, and application of advanced materials. She carried out several research studies among which are mitigation of seismic risk in Jordan, the application of fiber plastics as external reinforcement for concrete structures with high content of moisture and salt, in addition to a number of structural studies concerning the assessment and retrofitting.

Adnan Khasawneh: Researcher at the Building Research Center, has PhD. in Civil Engineering from Kharkov University, Ukraine 1990. Areas of interest are Piled foundation and Earthquake engineering Major projects include mitigation of seismic risk in Jordan including Jordan seismic hazard mapping, microzonation of Aqaba and assessment of seismic vulnerability of residential stone-concrete buildings, a number of structural studies concerning the assessment and retrofitting, in addition to the supervision on construction of Ajloun Exchange Building design to resist earthquake forces.

Hanan Nimry: Assistant Professor at Jordan University, she has a PhD. in Civil Engineering from Jordan University, 2002. Main interests are in Earthquake Engineering; Engineering Seismology; Structural Analysis, Modeling and Testing. She carried out several research studies among which are: Seismic Performance of Stone-Concrete Bearing Walls and Infilled Frames, Co-author of the Jordanian Code for Earthquake Resistant Buildings, Mitigation of Seismic Risk in Jordan including Jordan seismic hazard mapping, microzonation of Aqaba and assessment of seismic vulnerability of residential stone-concrete buildings, a number of structural studies concerning the assessment and retrofitting.

Bassam Sunna': Geologist in the private sector, he has three masters; he has M.Sc. Geology and Chemistry, M.Sc. Geology Research & D.I.C. and M.Sc. Petroleum Reservoir Engineering "British Council Scholarship".

Jamal Qtaishat: Director of National Building Council Affairs and Earthquake Technical Committee Reporter at the Ministry of Public Works and Housing, he has a Ph.D. in Civil Engineering from International Civil engineering Institute, 1992.

Tawfiq Al Yazjeen: Head Jordan Seismological Observatory (JSO), and Head of the Jordanian National Data Center Unit at the Jordan Seismological Observatory, he has a PhD in Geophysics. His experience is in the seismology field (Broad Band seismic stations Installation), seismic data analysis and earthquake location problems using the relevant softwares, extensive use of HYPO71PC, SEISAN programs, PC-DAC for seismic digital analysis and UNIX. He got good



experience in SAC and geotool software, and Oracle by using SQL language. He is responsible for establishment an Educational and Research Seismological Center at the University of Jordan.

Eid Al-Tarazi: Dean of Natural Resources & Environmental Sciences at the Hashemite University, he has a PhD in Investigation and Assessment of Seismic hazard from the Institute of Geophysics, Ruhr University Bochum, Germany, 1992.

Rawan Al-Sarayrah: Geologist at the Royal Scientific Society, she has a master degree in the Applied Geology from the Hashemite University. Her thesis was about the Evaluation of Seismic Risk in Greater Amman Area Utilizing Microtremor Measurements.

Hatem Qteefan: Geologist at the Royal Scientific Society, he has a master degree in the Applied Geology from Pakistan.

Mohammad Al Awabdeh: Geologist at the Royal Scientific Society, he has a bachelor degree in the Applied Geology from the University of Jordan.

María-José Jiménez: Geophysics working for the Institute of Earth Sciences "Jaume Almera", Barcelona – Spain.

Douglas Bausch: Natural Hazards Specialist, working at the Mitigation Division of the FEMA Region.

Facilities

- Furnished Offices fully equipped with computers and internet access.
- Relevant Softwares (Arc Info (GIS), HASUS, SAP 2000, Shake 2000, PROKON, GEODAS, and ETABS)
- Seismograph earthquake recorder
- Ambient vibration recorder (LEONARDS)
- GEOSIG strong motion recorder

Plans for Expansion

RSS is in the process for establishing an Earthquake Engineering Center with the following mission:

- Planning and implementation of multidisciplinary research project.
- Operation of structural laboratory and devising and implementing experimental investigation.
- Providing an educational platform for school and universities on the various aspects of seismic risk.
- Providing consultancy to the local community.
- Dissemination of knowledge to the national and international community.
- Training engineers and people from the civil defense and related institutes.
- Spreading seismic awareness to decision makers.
- Development and updating of seismic design codes.
- Development of national and regional plans for seismic risk assessment based on probable earthquake scenarios.
- Development of national and regional seismic risk mitigation plans.

Appendix 2



COMPOSITION AND QUALIFICATION OF CONSULTANCY:

BRC/RSS nominates the following persons to meet the required expertise for conducting this project (See attached CV's):

Project Manager: Dr. Tareq Al Hadid

Geologist and Geophysist Experts: Dr. Tawfiq Al Yazgeen, Bassam Sunna' María Jiménez, Mohammad Al Awabdeh, and Hatem Qteefan.

Structural Engineers: Dr. Amal Al Far, Dr. Hanan Nimry, and Dr. Jamal Qtaishat.

Seismologists: Dr. Eid Al-Tarazi and Rawan Al-Sarayrah.

Geotechnical Engineer: Dr. Adnan Khasawneh.

GIS Specialists: Eng. Mohammad Horani, Eng. Tala Awad Allah, and Dr. Douglas Bausc.

Data Entry: Ruba Maratouq and Razan Farouq.

Duration of Consultancy and Level of Efforts

The duration will be twenty four months from the start of the consultancy, and the level of effort will be according to the following table:

Specialist	Working Days
Project Manager Dr. Tareq Al Hadid	7.5 days
Geologist and Geophysist Dr. Tawfiq Al Yazgeen, Bassam Sunna', Dr. María Jiménez, Mohammad Al Awabdeh, and Hatem Qteefan	240 days
Structural Engineer Dr. Amal Al Far, Dr. Hanan Nimry, and Dr. Jamal Qtaishat	236 days
Seismologist Dr. Eid Al-Tarazi and Rawan Al Sarayrah	260 days
Geotechnical Engineer Dr. Adnan Khasawneh	225 days
Computer Specialist Eng. Mohammad Horani, , Eng. Tala Awad Allah and Dr. Douglas Bausch	240 days
Secretary and Data Entry Persons Ruba Maratouq and Razan Farouq	155 days

Break Down of the Budget

1. Personnel Cost

According to the human resources deployed for the project and the effort distribution shown in the above table, the breakdown of personnel cost based on daily cost, assuming 5 working days per week and 25 % overhead, is presented hereunder.

Details of Salaries of the Acquired Staff on Daily Basis

Personnel	Working Days		Salary/Day (US \$)	Total (US \$)
	Per Person	Total		
Project Manager Dr. Tareq Al Hadid	7.5	7.5	200	1,500
Total		7.5		1,500
Geologist and Geophysist				
Dr. Tawfiq Al Yazgeen	20	240	100	2,000
Bassam Sunna'	40		100	4,000
Mohammad Al Awabdeh	100		50	5,000
Hatem Qteefan	50		160	8,000
Dr. María Jiménez	30		300	9,000
Structural Engineer				
Dr. Amal Al Far	200	236	160	32,000
Dr. Hanan Nimry	24		125	3,000
Dr. Jamal Qtaishat	12		125	1,500
Seismologist				
Dr. Eid Al-Tarazi	60	260	125	7,500
Rawan Al Sarayrah	200		80	16,000
Geotechnical Engineer				
Dr. Adnan Khasawneh	225	225	160	36,000
Computer Specialist				
Eng. Mohammad Horani	140	240	100	14,000
Dr. Douglas Bausch	20		500	10,000
Eng. Tala Awad Allah	80		100	8,000
Secretary and Data Entry Persons				
Ruba Maratouq	80	155	50	4,000
Razan Farouq	75		40	3,000
Total		1356		163,000

The human resources involvement will be 1356 person-days spreaded over 24 months.

GRANT AGREEMENT MADE ON 9 SEPTEMBER 2008

BETWEEN

**THE SWISS AGENCY FOR DEVELOPMENT AND COOPERATION
(HEREINAFTER REFERED TO AS "SDC" – THE DONOR)**

AND

**THE UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP)
Country Office Jordan**

WHEREAS SDC will provide one hundred seventy eight thousand three hundred fifty Swiss Francs (CHF 178'350) as a grant to support the implementation of the project "**Support to Building National Capacities for Earthquake Risk Reduction at Aqaba Special Economic Zone in Jordan**", (Proposal no. 00048311)¹ for the period September 2008 to October 2010.

WHEREAS in the purpose of this Grant Agreement ("the Arrangement") is to set out the terms concerning the transfer and administration of the grant from SDC to UNDP

WHEREAS UNDP is prepared to receive and administer the contribution for the implementation of the project.

WHEREAS the Ministry of Planning and International Cooperation, the Coordinating Agency of this project, and the Aqaba Special Economic Zone Authority, the Executing Agency of this project, have been duly informed of the contribution of SDC to the project.

WHEREAS UNDP shall be the directly implementing the project².

NOW THEREFORE, UNDP and SDC hereby agree as follows:

Article I. The Grant

(a) SDC shall, in accordance with the schedule of payments set out below, contribute to UNDP the amount of CHF 178'350. The contribution shall be deposited in the UNDP Contributions Account:

Name of account holder	United Nations Development Programme
Bank account number	Account no. 01-2058170-01
Name of Bank	Standard Chartered Bank, Shmeisani Branch,
Branch	Shmeisani Branch
Address of Bank	P.O. Box: 9997 Amman 11191
SWIFT code	SCBLJAOX

1 The project document is formally annexed to this Agreement, as well as the revised results and resource framework matrix and annual work plan.

2 The project is subject to a National Execution Modality (NEX), therefore, UNDP is the Implementing Partner and the Aqaba Special Economic Zone Authority is the Executing Partner.

Schedule of payments

Amount

- Within a week after signing the agreement CHF 142'680 (80%)
- Final Payment after receipt of the final reports mentioned in Article III – latest by April 2011 CHF 35'670 (20%)

(b) The Donor will inform UNDP when the contribution is paid via an e-mail message with remittance information to receivables.hq@undp.org, areej.al-nahhas@undp.org and katia.madanat@undp.org.

2. The above schedule of payments takes into account the requirement that the payments shall be made in advance of the implementation of planned activities. It may be amended to be consistent with the progress of project delivery.
3. UNDP shall receive and administer the payment in accordance with the regulations, rules and directives of UNDP.
4. All financial accounts and statements shall be expressed in United States dollars.

Article II. Utilization of the Contribution

1. The implementation of the responsibilities of UNDP pursuant to this Agreement and the project document shall be dependent on receipt by UNDP of the contribution in accordance with the schedule of payment as set out in Article I, paragraph 1, above.
2. If unforeseen increases in expenditures or commitments are expected or realized (whether owing to inflationary factors, fluctuation in exchange rates or unforeseen contingencies), UNDP shall submit to SDC on a timely basis a supplementary estimate showing the further financing that will be necessary. SDC shall use its best endeavours to obtain the additional funds required.
3. If the payments referred to in Article I, paragraph 1, above are not received in accordance with the payment schedule, or if the additional financing required in accordance with paragraph 2 above is not forthcoming from SDC or other sources, the assistance to be provided to the project under this Agreement may be reduced, suspended or terminated by UNDP.
4. Any interest income attributable to the contribution shall be credited to UNDP Account and shall be utilized in accordance with established UNDP procedures.

Article III. Administration and reporting

1. Project management and expenditures shall be governed by the regulations, rules and directives of UNDP.
2. UNDP headquarters and country office shall provide to SDC all or parts of the following reports prepared in accordance with UNDP accounting and reporting procedures.

From the country office within six months after the date of completion or termination of the Agreement, a final report summarizing project activities and impact of activities as well as provisional financial data;

From UNDP Bureau of Management/Comptroller's Division, an annual certified financial statement as of 31 December to be submitted no later than 30 June of the following year;

From UNDP Bureau of Management/Comptroller's Division on completion of the project, a certified financial statement to be submitted no later than 30 June of the year following the financial closing of the project.

3. If special circumstances so warrant, UNDP may provide more frequent reporting at the expense of SDC. The specific nature and frequency of this reporting shall be specified in an annex of the Agreement.

Article IV. Administrative and support services

1. In accordance with the decisions and directives of UNDP's Executive Board reflected in its Policy on Cost Recovery from Other Resources, the Contribution shall be subject to cost recovery by UNDP for two distinct cost categories related to the provision of support services, namely:

Indirect costs incurred by UNDP headquarters and country office structures in providing General Management Support (GMS) services. To cover these GMS costs, the contribution shall be charged a fee equal to 10%.

Direct costs incurred for implementation support services (ISS) provided by UNDP. As long as they are unequivocally linked to the specific project, these costs are built into the project budget against a relevant budget line and, in the case of clearly identifiable transactional services, charged to the project according to standard service rates.

2. The aggregate of the amounts budgeted for the project, together with the estimated costs of reimbursement of related support services, shall not exceed the total resources available to the project under this Agreement as well as funds which may be available to the project for project costs and for support costs under other sources of financing.

Article V. Equipment

Ownership of equipment, supplies and other properties financed from the contribution shall vest in UNDP. Matters relating to the transfer of ownership by UNDP shall be determined in accordance with the relevant policies and procedures of UNDP.

Article VI. Auditing

The contribution shall be subject exclusively to the internal and external auditing procedures provided for in the financial regulations, rules and directives of UNDP. Should the biennial Audit Report of the Board of Auditors of UNDP to its governing body contain observations relevant to the contributions, such information shall be made available to SDC.

Article VII. Completion of the Agreement

1. UNDP shall notify SDC when all activities relating to the project have been completed.

2. Notwithstanding the completion of the project, UNDP shall continue to hold unutilized payments until all commitments and liabilities incurred in the implementation of the project have been satisfied and project activities brought to an orderly conclusion.

3. If the unutilized payments prove insufficient to meet such commitments and liabilities, UNDP shall notify SDC and consult with SDC on the manner in which such commitments and liabilities may be satisfied.

4. Any payments that remain unexpended after such commitments and liabilities have been satisfied shall be disposed of by UNDP in consultation with SDC.

Article VIII. Termination of the Agreement

1. After consultations have taken place between SDC, UNDP and the programme country Government, and provided that the payments already received are, together with other funds available to the project, sufficient to meet all commitments and liabilities incurred in the implementation of the project, this Agreement may be terminated by UNDP or by SDC. The Agreement shall cease to be in force 30 (thirty) days after either of the Parties have given notice in writing to the other Party of its decision to terminate the Agreement.

2. Notwithstanding termination of all or part of this Agreement, UNDP shall continue to hold up to the date of termination, unutilized payments until all commitments and liabilities incurred in the implementation of all or the part of the project, for which this Agreement has been terminated, have been satisfied and project activities brought to an orderly conclusion.

3. Any payments that remain unexpended after such commitments and liabilities have been satisfied shall be disposed of by UNDP in consultation with SDC

Article IX. Amendment of the Agreement

The Agreement may be amended through an exchange of letters between SDC and UNDP. The letters exchanged to this effect shall become an integral part of the Agreement.

Article X. Entry Into Force

This Agreement shall enter into force upon signature and deposit by SDC of the first grant-payment to be made in accordance with the schedule of payments set out in Article I, paragraph 1 of this Agreement and the signature of the project document by the concerned parties.

IN WITNESS WHEREOF, the undersigned, being duly authorized thereto, have signed the present Agreement in the English language in two copies.

For the Donor:

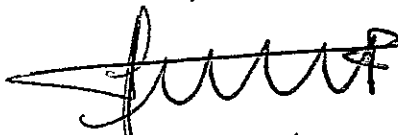
Toni Frisch
Head of the Humanitarian Aid
Department

i.v. 

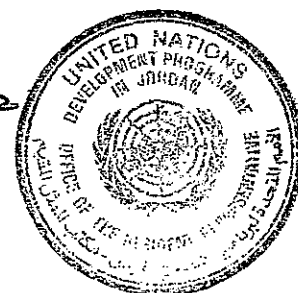
SDC
Date: 9.9.08

For the United Nations Development Programme:

Luc Stevens
Resident Representative



UNDP
Date: 21/09/08.



Annex 9: Cost-sharing Agreement with ASEZA

Agreement Between
The Government of Jordan
and
The United Nations Development Program

WHEREAS the Government of Jordan (hereinafter referred to as "the GoJ") have agreed to cooperate in the implementation of a project in Jordan (hereinafter referred to as "the Project") which is fully described in a Project Document: Seismic Risk Assessment for Aqaba, Proposal Number 00048311;

WHEREAS the GoJ has informed the UNDP of its willingness to contribute funds (hereinafter referred to as "the contribution") to the UNDP on a cost-sharing basis towards implementation of the Project;

WHEREAS the UNDP is prepared to receive and administer the contribution for the implementation of the Project;

NOW THEREFORE, the UNDP and GoJ hereby agree as follows:

Article I

1. The GoJ shall, in the manner referred to in paragraph 2 of this Article, place at the disposal of the UNDP a contribution in the amount of 70,800 Jordanian Dinar (US\$ 100,000)
2. The GoJ shall, in accordance with the schedule of payments set out below, deposit the contribution in United Nations Development Programme Account at the Standard Chartered Bank, Shmeisani Branch, Account no. 01-2058170-01

	<u>Date payment due</u>	<u>Amount (JD)</u>	<u>Amount (US)</u>
(a)	1 September 2008	21,594	30,500
(b)	1 March 2009	49,206	69,500

The above schedule of payments takes into account the requirement that contributions shall be paid in advance of the implementation of planned activities. It may be amended to be consistent with the progress of project delivery.

3. All financial accounts and statements shall be expressed in United States dollars.
4. The UNDP may agree to accept contribution-payments in a currency other than United States dollars provided such currency is fully convertible or readily usable by UNDP and subject to the provisions of paragraph 5, below. Any change in the currency of contribution-payments shall be made only in agreement with the UNDP.

5. The value of the contribution-payment, if made in other than United States dollars, shall be determined by applying the United Nations operational rate of exchange in effect on the date of payment. Should there be a change in the United Nations operational rate of exchange prior to the full utilization by the UNDP of the contribution payment, the value of the balance of funds still held at that time will be adjusted accordingly. If, in such a case, a loss in the value of the balance of funds is recorded, the UNDP shall inform the GoJ with a view to determining whether any further financing could be provided by the GoJ. Should such further financing not be available, the assistance to be provided to the Project may be reduced, suspended or terminated by the UNDP.

Article II

1. The contribution shall be utilized by the UNDP for the purpose of meeting the costs of the Project as set out in the Project Document as well as the costs of support services relating thereto as specified in the following paragraph. Any additional costs of the Project, which are not to be met from the contribution, as well as the source of their financing, are also set out in the Project Document.

2. The contribution shall be charged with an amount equivalent to 5 per cent of all project expenditures made from the contribution, which amount shall, in accordance with UNDP regulations, rules and directives, be utilized by the UNDP in reimbursement for support services provided by the Executing Agency and any other support services required.

3. Any interest income attributable to the contribution shall be credited to the UNDP Account and shall be utilized in accordance with established UNDP procedures.

Article III

1. The contribution shall be administered by the UNDP in accordance with UNDP regulations, rules and directives, applying its normal procedures for the execution of its projects.

2. Project management and expenditures shall be governed by the regulations, rules and directives of the UNDP and, where applicable, the regulations, rules and directives of the Executing Agency.

Article IV

1. The implementation of the responsibilities of the UNDP and of the Executing Agency pursuant to this Agreement and the project document shall be dependent on receipt by the UNDP of the contribution in accordance with the schedule of payments set out in Article I, paragraph 2, above.

2. The aggregate of the amounts budgeted for the Project, together with the estimated costs of reimbursement of related support services, shall not exceed the total resources available to the Project under this Agreement as well as funds which may be available to the Project for project costs and for support costs under other sources of financing.

3. If unforeseen increases in expenditures or commitments are expected or realized (whether due to inflationary factors, fluctuation in exchange rates or unforeseen

contingencies) the UNDP shall submit to the Government on a timely basis a supplementary estimate showing the further financing that will be necessary. The Government shall use its best endeavors to obtain the additional funds required.

4. If the contribution-payments referred to in Article I, paragraph 2, above, are not received in accordance with the payment schedule, or if the additional financing required in accordance with paragraph 3, above, is not forthcoming from the Government or other sources, the assistance to be provided to the Project under this Agreement may be reduced, suspended or terminated by the UNDP.

Article V

Ownership of equipment, supplies and other property financed from the contribution shall vest in the UNDP. Matters relating to the transfer of ownership by the UNDP shall be determined in accordance with the relevant policies and procedures of the UNDP.

Article VI

The contribution shall be subject exclusively to the internal and external-auditing procedures provided for in the financial regulations, rules and directives of the UNDP.

Article VII

The UNDP shall provide the Government on request with the following reports prepared in accordance with UNDP accounting and reporting procedures:

Periodic progress reports

An annual report which will provide information on expenditure incurred during the previous year;

A final report within six months after the date of completion or termination of the Project.

Article VIII

The UNDP shall notify the Government when all activities relating to the Project have been completed.

Article IX

1. Notwithstanding the completion of the Project, the UNDP shall continue to hold un-utilized contribution-payments until all commitments and liabilities incurred in implementation of the Project have been satisfied and Project activities brought to an orderly conclusion.

2. If the un-utilized contribution-payments prove insufficient to meet such commitments and liabilities, the UNDP shall notify the Government and consult with it on the manner in which such commitments and liabilities may be satisfied.

3. Any contribution-payments that remain unexpended after such commitments and liabilities have been satisfied shall be disposed of by the UNDP in consultation with the Government.

Article X

1. After consultations have taken place between the UNDP and the Government, and provided that the contribution-payments already received are, together with other funds available to the Project, sufficient to meet all commitments and liabilities incurred in the implementation of the Project, this Agreement may be terminated by the UNDP or by the Government. The Agreement shall cease to be in force thirty days after either of the Parties may have given notice in writing to the other Party of its decision to terminate the Agreement.

2. If the un-utilized contribution-payments, together with other funds available to the Project, are insufficient to meet such commitments and liabilities, the UNDP shall notify the Government and consult on the manner in which such commitments and liabilities may be satisfied.

3. Notwithstanding termination of this Agreement, the UNDP shall continue to hold un-utilized contribution-payments until all commitments and liabilities incurred in implementation of the Project have been satisfied and Project activities brought to an orderly conclusion.

4. Any contribution-payments that remain unexpended after such commitments and liabilities have been satisfied shall be disposed of by the UNDP in consultation with the Government.

Article XI

This Agreement shall enter into force upon signature and deposit by the Government of the first contribution-payment to be made in accordance with the schedule of payments set out in Article I, paragraph 2 of this Agreement.

IN WITNESS WHEREOF, the undersigned, being duly authorized thereto, have signed the present Agreement in the English (and languages) in two copies.

For the Government:


Name: Husseni Abu Ghaida

Title: Chief Commissioner
ASEZA

Date:

For the United Nations
Programme Development


Name: Luc Stevens

Title: Resident Representative

