**PROJECT EVALUATION FOR**

**Enhancing Institutional capacties to reduce disaster risk and to integrate climate change in jordan**

by

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March 2014

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# Acknowledgements

This study is funded by the United Nations Development Program (UNDP) – Jordan Office, for the evaluation of the project Enhancing Institutional capacities to reduce disaster risk and to integrate climate change in Jordan.

The author wishes to thank Ms. Zena Ali Ahmad, Ms. Majida Al-Assaf and Ms. Amani Hammad of UNDP Jordan and Mr. Nayef Khoury of the Swiss Agency for Development and Cooperation (SDC) for their support and cooperation throughout the duration of the project.

The author would also like to thank UNDP project staff including Dr. Saud Quran, (UNDP – National Project Management Advisor); Architect Khaled Abuaisheh – Director of Architecture and Physical Planning Directorate at the Aqaba Special Economic Zone Authority (ASEZA); Dr. Engineer Tharwat Al-Masalha (Commissioner of Infrastructure and Investment) Engineer Hussein Al-Hasanat (Head of Disaster Risk Reduction Unit) and at Petra Development and Tourism Regional Authority (PDTRA).

### Terminology

Certain terms are used frequently in this report; as such definitions of these terms are shown below, in alphabetical order, based on the terminology developed by the United Nations International Strategy for Disaster Reduction (UNISDR).

**Building code**: A set of ordinances or regulations and associated standards intended to control aspects of the design, construction, materials, alteration and occupancy of structures that are necessary to ensure human safety and welfare, including resistance to collapse and damage.

**Capacity Development**: The process by which people, organizations and society systematically stimulate and develop their capacities over time to achieve social and economic goals, including through improvement of knowledge, skills, systems, and institutions.

**Contingency Planning:** means a management process that analyses specific potential events or emerging situations that might threaten society or the environment and establishes arrangements in advance to enable timely, effective and appropriate responses to such events and situations. Contingency planning results in organized and coordinated courses of action with clearly identified institutional roles and resources, information processes, and operational arrangements for specific actors at times of need. Based on scenarios of possible emergency conditions or disaster events, it allows key actors to envision, anticipate and solve problems that can arise during crises. Contingency planning is an important part of overall preparedness. Contingency plans need to be regularly updated and exercised.

**Coping Capacity:** The ability of people, organizations and systems, using available skills and resources, to face and manage adverse conditions, emergencies or disasters. The capacity to cope requires continuing awareness, resources and good management, both in normal times as well as during crises or adverse conditions. Coping capacities contribute to the reduction of disaster risks.

**Corrective Disaster Risk Management**: Management activities that address and seek to correct or reduce disaster risks which are already present.

**Critical Facilities**: The primary physical structures, technical facilities and systems which are socially, economically or operationally essential to the functioning of a society or a community, both in routine circumstances and in extreme circumstances of an emergency.

**Disaster Risk**: The potential disaster losses, in lives, health status, livelihoods, assets and services, which could occur to a particular community or a society over some specified future time period. The definition of disaster risk reflects the concept of disasters as the outcome of continuously present conditions of risk. Disaster risk comprises different types of potential losses which are often difficult to quantify. Nevertheless, with knowledge of the prevailing hazards and the patterns of population and socio-economic development, disaster risks can be assessed and mapped, in broad terms at least. The following equation is often used to demonstrate the relationship between disaster risk, hazard, vulnerability and coping capacity:

$$Disaster Risk (DR)=\frac{Hazard (H)×Vulnerability(V)}{Coping Capacity (C)}$$

**Disaster Risk Management**: The systematic process of using administrative directives, organizations and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster.

**Disaster Risk Reduction:** means the concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events. The expected outcome of the disaster risk reduction efforts, as defined by the HFA, is the substantial reduction of disaster losses, in lives and the social, economic and environmental assets of communities and countries.

**Extensive Risk**: The widespread risk associated with the exposure of dispersed populations to repeated or persistent hazard conditions of low or moderate intensity, often of a highly localized nature, which can lead to debilitating cumulative disaster impacts. Extensive risk takes a special importance in the development process because it is usually a characteristic of rural areas and urban margins where communities are exposed to, and vulnerable to, recurring highly localised floods, landslides, storms or drought. Extensive risk is often associated with poverty, urbanisation and environment degradation.

**Hazard**: A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

**Intensive Risk**: The risk associated with the exposure of large concentrations of people and economic activities to intense hazard events, which can lead to potentially catastrophic disaster impacts involving high mortality and asset loss. Intensive risk is mainly a characteristic of large cities or densely populated areas that are not only exposed to intense hazards such as strong earthquakes, active volcanoes, heavy floods, tsunamis or major storms but also have high levels of vulnerability to these hazards.

**Preparedness:** means the knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions. Preparedness action is carried out within the context of disaster risk management and aims to build the capacities needed to efficiently manage all types of emergencies and achieve orderly transitions from response through to sustained recovery. Preparedness is based on a sound analysis of disaster risks and good linkages with early warning systems, and includes such activities as contingency planning, stockpiling of equipment and supplies, the development of arrangements for coordination, evacuation and public information, and associated training and field exercises. These must be supported by formal institutional, legal and budgetary capacities. The related term “readiness” describes the ability to quickly and appropriately respond when required.

**Prospective Disaster Risk Management**: Management activities that address and seek to avoid the development of new or increased disaster risks.

**Resilience**: The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

**Risk**: The combination of the probability of an event and its negative consequences.

**Risk Governance**: Applying the principles of good governance to the identification, assessment, management and communication of risks. It incorporates such criteria as accountability, participation and transparency within the procedures and structures by which risk related decisions are made and implemented.

**Risk Transfer**: The process of formally or informally shifting the financial consequences of particular risks from one party to another whereby a household, community, enterprise or state authority will obtain resources from the other party after a disaster occurs, in exchange for ongoing or compensatory social or financial benefits provided to that other party.

**Vulnerability**: The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard.

**LIST OF ABBREVIATIONS**

AMDGR Arab Millennium Development Goals Report.

ASEZ Aqaba Special Economic Zone.

ASEZA Aqaba Special Economic Zone Authority.

AWP Annual Work Plan.

CCA Climate Change Adaptation.

CBDRM Community Based Disaster Risk Management.

CP Country Programme.

CPAP Country Program Action Plan.

CSO Civil Society Organization.

DRM Disaster Risk Management.

DRMMP Disaster Risk management Master Plan.

DRR Disaster Risk Reduction.

EOC Emergency Operations Centre.

EOP Emergency Operations Plan.

HCCD Higher Council for Civil Defence.

HFA Hyogo Framework for Action.

IUCN International Union for Conservation of Nature.

JDC Jordan Civil Defence.

JDs Job Descriptions.

JNBC Jordan National Building Council.

MDG Millennium Development Goals.

NGO Non-Governmental Organization.

NPMA National Project Management Advisor.

PDTR Petra Development and Tourism Region.

PDTRA Petra Development and Tourism Region Authority.

PA Project Assurance.

PTC Project Technical Committee.

RSS Royal Scientific Society.

SDC Swiss Agency for Development and Cooperation.

ToRs Terms of Reference.

UNDAF United Nations Development Assistance Framework.

UNDP United Nations Development Program

UNFCCC United Nations Framework Convention on Climate Change

UN HABITAT United Nations Human Settlements Program

UNISDR United Nations International Strategy for Disaster Reduction

# Executive Summary

This report provides an evaluation of the UNDP project on “Enhancing Institutional Capacities to Reduce Disaster Risk and to Integrate Climate Change in Jordan”. The study is motivated by the fact that all UNDP projects need to be evaluated in terms of the following parameters relevance, effectiveness, efficiency, sustainability and impact of project outputs and outcomes.

The project has three main outputs (1. Synergies between governance of disaster risk reduction and climate change adaptation strengthened with a view to reduce poverty in Jordan, 2. Disaster risk reduction and climate change adaptation integrated into ASEZA and PDTRA; and 3. National institutional capacities of the Jordan National Building Council *JNBC* strengthened to modify the national building code and carry out seismic structural assessment of buildings and design retrofit and a seismic structural vulnerability assessment of key Jordan Civil Defence *JCD* buildings and schools conducted). Each of these outputs are assessed in terms of the above mentioned parameters, while comparing to best practice guidelines and lessons learnt worldwide and accounting for national Jordanian specificities in DRM practices. This in turn facilitates the identification of areas where future DRR support should be directed in terms of partner institutions as well as specific outcomes and activities.

The evaluation concludes that activities under Output 1 have been completed or are due to be successfully completed by the end of the Project. Most project activities under Output 2 have been successfully concluded or are envisaged to be completed by the end of the project extension in June 2014. However, important outstanding activities under this output remain unfinished, including setting up DRM district committees and DRM mainstreaming while accounting for gender considerations. As will be discussed later in this evaluation, it is envisaged that most of the challenges under this output may be addressed through better engagement with local and national authorities to ensure alignment of priorities within the national DRM strategy. Most activities under Output 3 have been completed or are due to be complete by the end of the project. A major challenge is the original training of engineers in nonlinear seismic analysis and the subsequent assessment of buildings, which did not unfold as expected. However, there is an ongoing attempt to currently address this issue through alternative training. The evaluation also addresses other aspects of the project related to relevance, efficiency, impact and sustainability as elaborated in Chapter 4.

Finally, the evaluation provides guidelines where future effort should be directed to improve efficiencies and impacts of similar projects in the future; namely: 1) the engagement with the JCD at the national level to ensure the national DRM strategy reflects salient lessons of DRM worldwide; 2) development of mechanisms for allocating and tracking funds for DRM; 3) development of mechanisms for analyzing risk transfer in the construction industry amongst others, while engaging the private sector; 4) development of portfolios for DRM that balances between prospective, corrective and compensatory strategies; 5) development of portfolios for financing DRM strategies that balances between risk retainment and reduction, insurance and reinsurance and transfer to capital markets; 6) recovery strategies and plans that helps link between resilient livelihoods, data loss collation, DRR, CCA and poverty reduction; amongst others.

# Introduction

## Background

### Arab Regional Trends in Development

At the international level, efforts are being increasingly targeted towards meeting the Millennium Development Goals (MDGs). Part of the efforts at ensuring the achievement of the MDGs is to ensure that public and private sector investments in cities, and the corresponding developments goals of the future, are protected against disaster risk. Similarly there is a need to protect existing development gains against disaster risk. Concurrently, it is becoming apparent that urban disaster risk losses (both human and economic) may be aggravated by unchecked urban development, environmental degradation, poor governance and poverty; and in turn may hinder the development goals and gains referred to above.

At the regional Arab level, as stated in the Third Arab Report on the MDGs (AMDGR) for 2010 [[[1]](#endnote-1)], the main highlights, gaps, challenges and achievements may be summarised as follows [1]:

* Arab countries are on track with respect to halving the proportion of people living below $1.25 a day.
* With regard to achieving universal primary education, the Arab region has seen improvement in net enrolment rates, literacy rate of young adults aged 15-24 and gender parity in primary schooling.
* Women’s economic and political participation remains very limited in the Arab region.
* Under-five mortality rates have declined by half in the Arab region over the period 1990-2008.
* There are great variations in reducing maternal mortality rates among countries of the region – ranging from levels below 10 per 100,000 live births in some Gulf countries to around 1,600 per 100,000 in Somalia.
* The Arab region as a whole only contributes less than 5% of global carbon dioxide emissions, but the impacts of climate change on the region are of major concern to policy makers who recognize that the Arab region will be negatively impacted by climate change.

As can be seen there are some achievements related to poverty reduction, education and health; while very limited progress has been achieved regarding women’s economic and political participation. However, these development gains outlined above must be protected against disaster risk. Furthermore, the AMDGR [1] highlights six priority areas for policies and actions that should be undertaken to enable the region to move forward:

* Food security.
* Poverty reduction.
* Adaptation to climate change.
* Youth employment and decent work.
* Gender equality.
* With respect to MDG7 (Ensure Environmental Sustainability), the report indicates that while the Arab region as a whole only contributes about 5% of the global carbon dioxide emissions, the impacts of climate change on the region are of major concern to policy makers due to its dependence on climate-sensitive agriculture, as well as the concentration of population and economic activity in flood-prone urban coastal zones.

### Jordan trends and Development

Jordan forms part of the Mashreq Arab countries with some similar development characteristics, where major challenges are identified as unemployment (not solely poverty); lack of quality education for poor segments within society (not universal enrolment in education establishment); gender participation, environmental sustainability and lack of universal health insurance coverage [[[2]](#endnote-2)].

Two main parameter, paramount to development dynamics, CCA and DRR are the type of the economy and presence of conflict. In this regard, Jordan is categorized under diversified economies (which includes Egypt, Jordan, Lebanon, Morocco, Syria and Tunisia).

Furthermore, while Jordan, is not classified as a country in conflict, it remains heavily affected by the Arab-Israeli conflict and its unfolding manifestations [2] and [[[3]](#endnote-3)].

### Importance of Mainstreaming DRM efforts into Development

It has recently been recognized that the development challenges identified above, are best addressed by mainstreaming Disaster Risk management Efforts (DRM) with the development process. It is against the above background that the UNDP (Jordan) commissioned a project on enhancing institutional capacities to reduce disaster risk and to integrate climate change in the Hashemite Kingdom of Jordan, which in turn forms the subject of this evaluation report. Indeed this forms part of ongoing UNDP support for DRM efforts in the country, including supporting ASEZA in hosting the first Arab Conference for Resilient Cities which took place in Aqaba in 2013 [[[4]](#endnote-4)].

### Backdrop of Project Design and Implementation

In carrying out this evaluation, it should be recognized that the original study, which commended in the last quarter of 2011, took place against a background of four global crises with various implications on development in the Arab region; namely the food crisis (2007-2008), fuel crisis (2000s, peaking in 2008), Financial crisis (2008) and the global recession (2008- ongoing) [2]. In addition, the “Arab Spring” was taking place at the onset of this project design. The effects of the above international and regional crises and events on project design and implementation must be recognized.

## Objectives

The UNDP office in Jordan commissioned the author to carry out this evaluation. As per the Terms of Reference of the evaluation [[[5]](#endnote-5)], the scope of the evaluation is expected to cover UNDP, the implementing Partners: Jordan Civil Defence (JCD), Ministry of Public Works and Housing/ Jordan National Building Council (JNBC), Aqaba Special Economic Zone Authority (ASEZA) and Petra Development and Tourism Region Authority (PDTRA), disaster management institutions/organizations, NGOs, UN Agencies and the communities that benefited from the project. The overall objective of this Project Evaluation is to:

* Assess achievement towards the project’s objectives and results.
* Assess the efficiency and cost-effectiveness of implementation.
* Identify strengths and weaknesses in project design and implementation.
* Provide recommendations on design modifications and specific actions that would increase the effectiveness and impact of future similar initiatives.

## Layout

The remainder of this report is divided into three main sections. Section 2 provides a brief overview of the project under evaluation and the outcome and outputs within. In Section 3, the evaluation of the project is elaborated in terms of relevance, efficiency, effectiveness, impact and sustainability. Finally Section 4 provides recommendations on key areas where interventions need to be made, in order to improve effectiveness and impact of future similar initiatives.

# Project Description

## Introduction

The original project document [[[6]](#endnote-6)] identified the following implementing partners; with the Ministry of Planning and International Cooperation as the coordinating authority and the UNDP as the executing entity:

* Jordan National Building Council (JNBC)
* Aqaba Special Economic Zone Authority (ASEZA)
* Petra Development and Tourism Region Authority (PDTRA)
* Jordan Civil Defence (JCD).

Furthermore, the above project document [6], specified the following outcomes and outputs:

* UNDAF Outcome / Expected CP Outcome: Enhanced Capacity of Government and Civil Society Organizations to prevent, respond to and mitigate natural and man-made disasters.
* Expected CPAP Outputs:
	+ Output 1: Synergies between Governance of disaster risk reduction and climate change adaptation strengthened with a view to reduce poverty in Jordan.
	+ Output 2: Disaster Risk reduction and climate change adaptation integrated (mainstreamed and gender sensitive) into ASEZA and PDTRA.
	+ Output 3: National institutional capacities (JNBC) strengthened to modify national building code and carry out seismic structural assessment of building and design retrofit and a seismic structural vulnerability assessment of key JCD buildings conducted.

The original project implementation period was from November 2011 to July 2013, which was extended on two separate occasions until the end of June 2014.

## Project Pillars and Strategy

The overall UNDP strategy for this project, originally revolved around four pillars, which were addressed by developing interventions under the three outputs named above, as shown in Table 1.

*Strategy Pillars and Outputs*

|  |  |
| --- | --- |
| **Strategy Pillars** | **Outputs** |
| 1. To provide a common operating framework for DRR and CCA identifying synergies in the existing policies and laws related to DRR and CCA that deal with prevention, mitigation and preparedness of droughts, flooding, desertification and aridity thus leading to poverty reduction.
 | Output 1: Synergies between governance of disaster risk reduction and climate change adaptation strengthened with a view to reduce poverty in Jordan. |
| 1. Strengthen coordination mechanisms between the institutions dealing with DRR and the institutions dealing with CCA with a view to promote common strategies and joint initiatives for prevention, mitigation and preparedness.
 |
| 1. Enhance local institutional capacities in two high risk regions of Aqaba and Petra to enable ASEZA and PDTRA to address climatic and geological hazards effectively.
 | Output 2: Disaster risk reduction and climate change adaptation integrated (mainstreamed and gender sensitive) into ASEZA and PDTRA. |
| 1. Enhance resilience of national disaster response institution to enable it to undertake effective emergency response and early recovery in the wake of seismic and climatic disasters; Enhance national capacity to assess structural and non-structural vulnerability of buildings.
 | Output 3: National institutional capacities (JNBC) strengthened to modify national building code and carry out seismic structural assessment of building and design retrofit and a seismic structural vulnerability assessment of key JCD buildings conducted. |

## Output 1 Synergies between governance of disaster risk reduction and climate change adaptation strengthened with a view to reduce poverty in Jordan

The following activities were originally designed under this output:

* Assessment of existing and potential linkages between CCA and DRR and identify how this synergy can enhance poverty reduction:
	+ Identify various policies and laws that exist in multiple sectors to deal with DRR and CCA.
	+ Identify synergies in existing policies and highlight gaps with a view to propose strengthening of linkages in these policies and laws.
	+ Study existing institutional arrangements for coordination and decision making about DRR and CCA (as in e.g. the civil Defence council and various committees within the agriculture, water resources and environmental sectors).
	+ Review the mandates of above committees and identify subjects for which cross-sectoral coordination and awareness is required between disaster management and climate change coordination bodies / committees.
* The government of Jordan to design a framework for action that will promote potential linkages between CCA and DRR in order to enhance poverty reduction, with three main sections:
	+ Section 1: Theoretical linkages between DRR and CCA.
	+ Section 2: recommendations on modifications and changes required in DRR and CCA policies to strengthen linkages.
	+ Section 3: Recommendation on improving institutional coordination amongst the committees / council / departments dealing with DRR and CCA.
	+ Above recommendations will be shared with the government to be taken and included in the national development plan and in sectoral development plans.
* Recommendations for activities to the government framework for action that could be supported by UNDP:
	+ A strategy document / project document will be prepared for UNDP, to facilitate the implementation of the framework of collaboration between DRR and CCA.
	+ The document will provide guidance to UNDP in building synergies between DRR and CCA components of the country and UNDAF programmes.

## Output 2 Disaster Risk Reduction and Climate Change Adaptation Integrated (Mainstreamed and Gender Sensitive) into ASEZA and PDTRA

The following activities were originally designed under this output:

* Operationalize the DRM Directorate in ASEZA / PDTRA, which includes the following sub-activities:
	+ Special ordinance to set up the ASEZA / PDTRA DRM district committee, where the special ordinance will be prepared and finalized for the governors approval, defining functions, authorities, coordination arrangements and resource requirements. The DRM committee is meant to be chaired by the ASEZA / PDTRA chief commissioners, gathering institutions that deal directly and indirectly with DRM.
	+ Organigrams and Job Descriptions (JDs) for the ASEZA / PDTRA DRM units, where the organizational structure is finalised with clear definitions of reporting / flow of information and accountability at various levels. The organigrams and the job descriptions will be submitted to ASEZA / PDTRA board for final review and approval.
	+ Setup basic Emergency Operation Centre (EOC) at the DRM directorate in order to enable the DRM unit at the ASEZA / PDTRA to organize coordinated emergency response and equip with essential equipment.
* Joint competency training for the directorate staff and for the DRM related actors, where competency training courses will be designed and conducted, including courses on emergency response management, risk sensitive land-use planning, disaster risk assessment, seismic risk reduction and flood risk reduction.
* Emergency Operations Plan, where a contingency management / emergency operations plan will be prepared for ASEZA / PDTRA in support with other actors, defining roles and responsibilities and standard operating procedures for all stakeholders to organize post-disaster emergency response and recovery. The EOP will carefully consider issues of gender and existing social vulnerability to ensure inclusiveness and building coping capacities.
* DRR mainstreaming strategy based on the findings of the DRM master plan for ASEZA and PDTRA, addressing long term issues of disaster prevention and mitigation with regards to earthquakes, flash floods and industrial hazards, with description of prevention and mitigation strategies for earthquakes and climatic hazards facing Aqaba and Petra, with estimated costs for implementing the proposed strategies. The strategy will also include the roles of various departments and stakeholders in designing and implementing interventions for prevention and mitigation of disasters in their jurisdiction. The DRM strategy will carefully consider existing social vulnerability and gender issues (this has already been carried out for Aqaba but need to be done for Petra).
* Integrated Risk Assessment and feasibility study for flash flood system in Wadi Musa, where the following bus tasks will be carried out:
	+ A risk assessment of seismic and flood hazards in Wadi Musa
	+ Based on flood assessment, a flash flood warning system established for Wadi Musa, including installation of relevant flood monitoring equipment and systems for communication of warning information to communities and to all stakeholders.
	+ Training for the DRM coordination committee and unit of PDTRA and other local officials of Wadi Musa, covering topics on flood risk analysis, flood risk management and flood warning systems. It is envisaged that the project will organise south-south cooperation with Egyptian Ministry of Water that successfully implemented similar projects in Nuweiba, Red Sea.

## Output 3 National Institutional Capacities Strengthened to Modify National Building Code and Carry Out Structural Assessment of Building against Seismic Risks and in Retrofit Design for Earthquake Safety and a Seismic Structural Vulnerability Assessment of JCD buildings conducted

The following activities were originally designed under this output:

* National building code and corresponding risk map modified to include:
	+ An update of the risk map with latest earthquake provisions and findings of existing seismic risk assessments in Aqaba and Amman.
	+ Guidelines on carrying out structural assessment for seismic risk and seismic proof retrofitting of buildings.
	+ This modification will be led by the Jordan National Building Council chaired by the Minister of Public Works with Technical knowledge from Turkish experts, Royal Scientific Society, Jordan Engineering Association, Earthquake Technical Committee and Jordan Constructor Contractor Association and Universities.
* Training program for civil engineers to enhance the knowledge and skills of engineers in structural assessments of buildings against seismic risk and in retrofitting for earthquake safety. In particular the following sub-activities will be carried out:
	+ A curriculum for providing short term training for in-service engineers from a wide range of actors including civil Defence, ministry of education, ministry of public works, royal scientific society, Jordan engineering association, ASEA, PDTRA and universities on seismic structural assessment and retrofitting as well as post earthquake assessment.
	+ A training of 20-25 trainers (male – female equality) will provide a solid base for the dissemination of the knowledge and practice to different cities of the country.
	+ The training will lead the engineers to apply their knowledge by assessing structural vulnerabilities and designing retrofitting of 2 JCD buildings and 2 MOE schools.
	+ A specific course will be designed for the key universities teaching engineering in Jordan (Jordan university, JUST, Balqa, etc) to address the lack of compulsory curriculum in seismic safe construction at the bachelor degree level.
* Seismic structural vulnerability assessment and retrofit design of JCD buildings, to be carried out by the trained engineers in return for remuneration. The quality control of the assessment and retrofit design will be done on site and remotely by the Turkish experts. The material testing will be carried out by Jordan based organization after selection through public tender (RSS, universities, etc).

## Organizational Structure of Project

The organization structure of the project consists of the following components, as shown in Figure 1:

* **The Project board** which oversees the implementation of the project, and has the following working arrangements:
	+ It is chaired by a senior person from the Ministry of Planning and International Cooperation.
	+ It is responsible for making strategic decision through consensus for the project when guidance is required by the National Project Management Advisor (NPMA).
	+ It consists of senior representatives from the Ministry of Planning and International Cooperation, Higher Council for Civil Defence (HCCD), JNBC, JCD, ASEZA, PDTRA, SDC and UNDP.
	+ The project board should meet twice a year or as necessary when requested by the NPMA.
	+ The project board is consulted by the NPMA for decision when budget tolerances have been exceeded.
* **Three project Technical Committees (PTCs)**, which are established to oversee the implementation of the project and has the following working arrangements:
	+ It comprises the NPMA, UNDP and relevant implementing agencies (JNBC, ASEZA, JCD and PDTRA).
	+ It includes technical / operation level staff.
	+ It discusses and provides technical solutions and recommendations to the project, with a view to facilitate implementation of different outputs and activities.
	+ It meets once every three months or as the needs of the project under the leadership of the senior representative of the implementing agencies.
	+ The PTC team leader reports progress made to the project Board.
* **The Project Assurance** **(PA)** 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 UNDP DRR specialist holds the Project Assurance role for the UNDP Project Board.
* **The National Project Management Advisor (NPMA)**, responsible for providing day-to-day technical assistance to each of the implementing partners with high level policy/technical and managerial expertise, through the following working arrangements:
	+ The NPMA ensures that implementing partners are effectively coordinating amongst each other.
	+ The NPMA will assist implementing partners in the annual, quarterly and daily planning activities to ensure outputs are achieved within deadlines.
	+ The NPMA will also assist implementing partners in the recruitment of appropriate technical expertise and compiling reports on progress for the quarterly progress reports and final reports.

|  |
| --- |
| **Project Organization Structure****Government Planning Authority****Ministry of Planning and International Cooperation****(With the Support of the Higher Council for Civil Defence)****UNDP Country Director****Swiss Development Cooperation Representative****Implementing Agencies - JNBC, ASEZA, PDTRA, JCD****Quality Assurance - UNDP DRR Specialist****National Project Management Advisor - & national / International Consultants****Project Support - Administration & Finance****Technical Committee A - Synergies between governance of DRR and CCA - JCD****Technical Committee B - DRR and CCA integrated into planning of local authorities - ASEZA & PDTRA****Technical Committee C - National Institutional Capacities - JNBC** |

###### *Project Organization Structure*

## Rationale for Selecting Implementing Agencies

This section provides a brief review of the four implementing authorities, with a view of collating the necessary information to enable the assessment of their suitability for the output under consideration.

* **Petra Development and Tourism Region Authority (PDTRA)**, which was established in 2009 and controls the entire Petra Region (755km2). PDTRA role is the development of the Petra region economically capitalising on its potential in tourism, among other areas such as local community development, heritage management and protection, and the environment. The mandate of the PDTRA focuses on: managing and protecting the Petra Archaeological Park, developing tourism, zoning and land use, stimulating investment, improving socio-economic conditions of local communities, sustainable development across the region. PDTRA role in the project was envisaged as follows:
	+ Establishment of the DRM unit and the PDTR district DRM committee.
	+ Developing the DRM master plan, and a DRR mainstreaming strategy.
	+ Develop an emergency operations plan with roles and responsibilities to organise post-disaster emergency response and recovery.
	+ Integrated risk assessment.
	+ Setup flash-flood early warning system.
	+ In general responsible for output 2, relevant to Petra and the co-achievements of the project goals while ensuring best use of resources.
* **Aqaba Special Zone Development Authority (ASEZA)**, which was inaugurated in 2001 as a liberalized, low-tax duty free and multi-sector development zone, the ASEZ attracted investments of up to 20 billion dollars since its inception [6]. ASEZA is financially and administratively autonomous institution for the management, regulation and development of the zone. UNDP has a partnership with ASEZA in DRR through earthquake risk assessment and the development of the framework for the DRM master plan (2009-2011). ASEZA role in the project was envisaged as follows:
	+ Finalisation of the establishment of the DRM directorate and the ASEZ DRM committee.
	+ Operationalize the DRM master plan.
	+ Develop DRR mainstreaming strategy.
	+ Develop an emergency operations plan with roles and responsibilities to organise post-disaster emergency response and recovery.
	+ In general ASEZA is responsible for output 2 relevant to ASEZ and the co-achievement of the project goals while ensuring the best utilisation of resources.
* **Jordan National Building Council (JNBC)**, which is by law (1993) authorised to organize and supervise the development of the various building codes, to publish and circulate codes and to issue instructions. It can draw technical expertise from the Royal Scientific Society, Jordan Engineering Association and the Jordan Construction Contractors Association. The role of the JNBC includes:
	+ Ensure that the agreed provisions related to vulnerability assessment of the existing building stock for seismic and flood risks are incorporated into the codes.
	+ Selecting a group of engineers to become trainers in structural / non-structural assessment and in retrofitting design
	+ Involved in the development, review and certification of the curriculum on seismic safer construction (including retrofitting technologies) which will be later adopted into the engineering faculties of the University of Jordan, RSS, JUST, amongst others
	+ In general, it is responsible for the implementation of output and the co-achievement of the project goals while ensuring best utilisation of resources.
* **Jordan Civil Defence (JCD)**, which reports to the Ministry of the Interior and is organized as a Para-military organization with mandates over response planning and relief operations in the case of disasters. The JCD has a small department for Disaster management. Based on the Civil Defence law no. 18, 1999, the JCD is the formal body authorized to protect the lives and properties of the citizens against potential dangers through self prevention and protection procedures. The JCD was also the main implementing partner for UNDP during the Amman Earthquake Risk Reduction Project (2007-2009). The role of the JCD is:
	+ The production of Output 1 and the co-achievement of the project goals, while ensuring the best utilisation of resources.
	+ Ensure that access to plans and sites of JCD buildings is granted to engineers.

## Original Project Risk Analysis

The original risk analysis matrix is shown in Table 2.

*Original Risk Analysis Matrix*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Date Identified** | **Type** | **Impact and Probability - Probability 1 (low) to 5 (high); impact 1 (low) to 5 (High)** | **Potential Countermeasures / response** |
| Lack of funding for various components of the project | May 2011 | Financial | All the project components may not be funded. P=3, I=4 | UNDP contacting different potential donors and checking amount of financial contributions from implementing agencies |
| Change in leadership within implementing agencies | May 2011 | Political | Change in leadership has little impact on objectives; P=2, I=3 | Building strong relationships should be established mid and senior level of the institutions |
| Change in political situation in the country | May 2011 | Political | Political priorities of the government might be reset. P=3, I=4 | UNDP and partners to adjust work plan. |

## Original Monitoring and Evaluation Framework

In accordance with the programming policies and procedures outlined in the UNDP, the project monitoring was designed to be carried out through the following tools:

* Annually, through:
	+ **Annual report review**, which shall be prepared by the NPMA in collaboration with leaders of each project technical committee and shared with the project board.
	+ **Annual Project review**, based on the above report which is to be conducted during the fourth quarter or soon after to assess the performance of the project and appraise the annual work plan for the following year. The leaders of each Project Technical Committee will prepare the report for the NPMA and present it to the project board. In the last year of the project, the review will be a final assessment. The review is driven by the project board and may include other stakeholders as necessary. The focus of the review is the extent to which progress is being made towards outputs and the extent to which these remain aligned to appropriate outcomes.
* Within the annual cycle, through:
	+ Quarterly basis quality assessments recording progress towards achievement of the key results based on quality criteria and quality methods shown in.
	+ Issue log activated in Atlas and updated by Project Manager to facilitate tracking and resolution of problems.
	+ A risk log, based on the original risk analysis shown in Table 2, which will be activated in Atlas and regularly updated by reviewing the external environment.
	+ A project progress report, to be submitted by the NPMA to the project Board through Project Assurance.
	+ A Project lesson learnt log, which will be activated and regularly updated to ensure ongoing learning and adaptation within the organization.
	+ A monitoring schedule plan which will be activated and updated to track key management actions and events.

*Output, Quality Criteria and Quality Methods*

|  |  |  |  |
| --- | --- | --- | --- |
| **Output**  | **Date**  | **Quality Criteria** | **Quality Method** |
| Synergies between governance of DRR and CCA strengthened at the national and local levels with a view to reduce poverty | 9-2011 to 5-2012 | * Study on linkages between CC and DRR assessed and synergies identified to reduce poverty;
* Workshop
* Document of the Framework for Action
 | * Report of the assessment including references and framework for action
 |
| Disaster Risk Reduction and Climate Change Adaptation Integrated 9Mainstreamed and Gender Sensitive) into ASEZA and PDTRA | 9-2011 to 8-2012 | * Policies o DRM defined for ASEZA and PDTRA, which also covers aspects of climatic hazards
* Institutional arrangements for DRM operationalized in ASEZA and PDTRA also covering climatic hazards
* DRM master plan and action plan
 | * Copies of the Special Ordinance, the JDs, the Organigram Guidelines for setting up DRM district committee
* List of equipment to be procured for the Emergency Operations Centre
* Benchmarking Emergency Management Standards and Accreditation (EMAP) standards and the sound practices of existing local disaster risk management
 |
| National institutional capacities strengthened to modify national building codes and carry out seismic structural assessment of building and design retrofit and a seismic structural vulnerability assessment of key JCD buildings conducted | 9-2011 to 8-2012 | * National Building codes modified making structural vulnerability assess and retrofitting of standing buildings a requirement
* National engineering capacities strengthened in structural vulnerability assessment and retrofitting of buildings
* Comprehensive structural assessment of selected JCD buildings against seismic and flood risks available
* Estimate of costs for retrofitting / strengthening of selected JCD buildings against seismic and floods risks available
 | * Report of consultants on the proposed revisions in the building code
* Copy of the revised building codes
* Copy of the curriculum for training of engineers
* Report of the training workshop for engineers
* Report of the structural assessment
* Onsite visits to the JCD buildings
* Retrofit design report
 |

# Project Evaluation

## Evaluation Guidelines

The following evaluation criteria are used in the evaluation of the project [[[7]](#endnote-7)] and [[[8]](#endnote-8)]:

* **Relevance**, which concerns the extent to which a development initiative and its intended outputs or outcomes are consistent with national and local policies and priorities and the needs of intended beneficiaries. Relevance also considers the extent to which the initiative is responsive to UNDP corporate plan and human development priorities of empowerment and gender equality issues. Relevance concerns the congruency between the perception of what is needed as envisioned by the initiative planners and the reality of what is needed from the perspective of intended beneficiaries. It also incorporates the concept of responsiveness—that is, the extent to which UNDP was able to respond to changing and emerging development priorities and needs in a responsive manner.
* **Efficiency**, measures how economically resources or inputs (such as funds, expertise and time) are converted to results. An initiative is efficient when it uses resources appropriately and economically to produce the desired outputs. Efficiency is important in ensuring that resources have been used appropriately and in highlighting more effective uses of resources.
* **Effectiveness**, which is a measure of the extent to which the initiative’s intended results (outputs or outcomes) have been achieved or the extent to which progress toward outputs or outcomes has been achieved.
* **Impact**, measures changes in human development and people’s well-being that are brought about by development initiatives, directly or indirectly, intended or unintended.
* **Sustainability**, which measures the extent to which benefits of initiatives continue after external development assistance has come to an end. Assessing sustainability involves evaluating the extent to which relevant social, economic, political, institutional and other conditions are present and, based on that assessment, making projections about the national capacity to maintain, manage and ensure the development results in the future.

Furthermore, the above criteria are assessed by considering the key aspect of the project, as summarised in Table 4, reproduced from Table 27 in the original UNDP Handbook on planning, monitoring and evaluating projects [7]:

*Key Aspects of the Project*

| **Key Aspects** | **Questions to Address** |
| --- | --- |
| **Demand** | What is the need or demand for the initiative? What problem or development opportunity is the initiative intended to address? |
| **Beneficiaries** | Who are the beneficiaries or targets of the initiative? Who are the individuals, groups or organizations, whether targeted or not, that benefit directly or indirectly from the development initiative? |
| **Scope** | What is the scope of the initiative in terms of geographic boundaries and number of intended beneficiaries? |
| **Outputs and Outcomes** | What changes (outcomes) or tangible products and services (outputs) are anticipated as a result of the initiative? What must the project, programme or strategy accomplish to be considered successful? How do the intended outcomes link to national priorities, UNDAF priorities and corporate Strategic Plan goals? |
| **Activities** | What activities, strategies or actions, both planned and unplanned, does the programme take to effect change? |
| **Theory of Change or Results / outcome map** | What are the underlying rationales and assumptions or theory that defines the relationships or chain of results that lead initiative strategies to intended outcomes? What are the assumptions, factors or risks inherent in the design that may influence whether the initiative succeeds or fails? |
| **Resources** | What time, talent, technology, information and financial resources are allocated to the effort? |
| **Stakeholder and Partnership Methodology** | Who are the major actors and partners involved in the programme or project with a vested interest? What are their roles, participation and contributions—including financial resources, in-kind contributions, leadership and advocacy—including UN organizations and others? How was thepartnership strategy devised? How does it operate? |
| **Phases of Implementation** | How mature is the project or programme, that is, at what stage or year is the implementation? Is the implementation within the planned course of the initiative? Is the programme mainly engaged in planning or implementation activities? |
| **Modification from Original Design** | What, if any, changes in the plans and strategies of the initiative have occurred over time? What are the potential implications for the achievement of intended results? |
| **Evaluability** | Can the project or programme as it is defined be evaluated credibly? Are intended results (outputs, outcomes) adequately defined, appropriate and stated in measurable terms, and are the results verifiable? Are monitoring and evaluation systems that will provide valid and reliable data in place? |
| **Cross-Cutting Issues** | To what extent are key cross-cutting issues and UN values intended to be mainstreamed and addressed in the design, implementation and results? |

## Evaluation Methodology

### Introduction

The methodology adopted in the evaluation was to follow the evaluation guidelines and criteria as succinctly summarised above [7], while reviewing the various documents listed in Section 3.2.2 and carrying out interviews with the personnel listed in Section 3.2.3.

### Document Reviewed

In addition to the project document [6], the following documents were reviewed:

Progress Reports

* Quarterly Project Progress Reports on a quarterly basis for the implementing partners, namely: ASEZA, JCD, JNBC and Petra for the following reporting periods:
	+ QPR1 (Jan-March 2012).
	+ QPR2 (April – June 2012).
	+ QPR3 (July-September 2012).
	+ QPR4 (October – November 2012).
	+ QPR5 (January – March 2013).
	+ QPR6 (April – June 2013).
	+ QPR7 (July-September 2013).
	+ QPR8 (October – November 2013).
* Annual Report in the form of a DRR matrix.

Annual Work Plans

* Annual work plans for the implementing partners, namely ASEZA, JCD, JNBC and PDTRA.

Board Meetings

* Board meeting 22 January 2013
* Board Meeting 16 November 2013

Main Deliverables

The following main deliverables, and references within, were reviewed as part of this evaluation:

Output 1

* Strengthening Synergies between Governance of Disaster Risk Reduction and Climate Change Adaptation in Jordan with a View to Reduce Poverty, Institutional Analysis Report, Mapping and assessing the existing and potential linkages between CCR and DRR in Jordan, IUCN, September 2012 [[[9]](#endnote-9)].
* Strengthening Synergies between Governance of Disaster Risk Reduction and Climate Change Adaptation in Jordan with a View to Reduce Poverty, Framework for action and 3-year Action Plan, Draft Report, IUCN , November 2012 [[[10]](#endnote-10)].
* Adaptive Disaster Risk Reduction in Jordan, Concept Paper, IUCN, 2013 [[[11]](#endnote-11)].
* Draft Project Document, Adaptive Disaster Risk Reduction in Petra, IUCN, 2014 [[[12]](#endnote-12)].

Output 2

* Setup of ASEZA Disaster Risk Reduction Unit and Related Competency Training, Final Project Report, EMI July 2011 (part of an older project but was reviewed as it has recommendations which should have been implemented within the project under evaluation) [[[13]](#endnote-13)].
* ASEZA Disaster Risk Management Master Plan (DRMMP), Framework and Action Plans, Draft Updated version, July 2012, ASEZA [[[14]](#endnote-14)].
* ASEZA EOC Specification, September 2012 [[[15]](#endnote-15)].
* Consultancy to carry out a Feasibility Study for a 1) Flash Flood / Landslide Risk / Rock Fall Assessment and; 2) The Setup of an Early Warning System in Wadi Musa, Petra, Jordan, FINAL REPORT, J. Cools and M. Stoffel, Submitted in June 2012 to Petra Development & Tourism Region Authority - Disaster Risk Reduction Unit [[[16]](#endnote-16)].
* Disaster Risk management Profile for Petra Development and Tourism Region, Building Petra Development and Tourism Region Authority Disaster Risk Reduction Capacity, R Jaradat and A Gharaibeh, Final Report, September 2013 [[[17]](#endnote-17)].
* Integrated Risk Assessment for the Petra Development and Tourism Region, Dar Al Omran Infrastructure and Environment, Parts I (Executive Summary), II (Technical Report) & III (Appendices), November 2013 [[[18]](#endnote-18)].
* School Book, Poster and Guidebook on DRR in schools, September 2013.

Output 3

* Training Material for the ECQO company for training engineers on seismic structural and retrofitting analysis using advanced specialised nonlinear software.
* Improving Construction Standards and Practice in Jordan, Royal Scientific Society, August 2012 [[[19]](#endnote-19)].
* Concept Paper on Bachelor Academic Course Proposal for Earthquake Engineering and Design, 31 August 2013 [[[20]](#endnote-20)].

### Interviews

During the course of the evaluation, interviews were carried out with the following personnel:

* Ms. Amani Hammad, Head of Governance Portfolio, Head of Disaster Risk Reduction Portfolio, UNDP Country Office (Jordan).
* Ms. Majida Alassaf, The Programme Manager, UNDP Country Office (Jordan).
* Ms. Zena Ali Ahmed, Country Director, UNDP Country Office (Jordan).
* Dr Saud Quran, the National Project Management Advisor at UNDP.
* Mr. Nayef Khoury, SDC.
* Architect Khaled Abuaisheh – Director of Architecture and Physical Planning Directorate at the Aqaba Special Economic Zone Authority (ASEZA).
* Engineer Hussein Al-Hasanat (Head of Disaster Risk Reduction Unit) and Dr. Engineer Tharwat Al-Masalha (Commissioner of Infrastructure and Investment) at Petra Development and Tourism Regional Authority (PDTRA).
* Brig. Husam A. Al-Soub, Disaster Department Director, The General Directorate of Civil Defence.
* Dr Adnan Khasawneh, Division Head of Studies and Projects, Royal Scientific Society.
* Mr. Mufleh Al-Abbadi, Regional Programme Manager – Water and Climate Change Programme and Mr. Fadi Al Shraideh (Regional Director and Regional Programme Coordinator, a.i), International Union for Conservation of Nature (IUCN).
* Ms. Ruby Assad, Gender and Community Development Specialist, Consultancy and Investments for Water and Environment, SaafConsult BV.
* Dr. Jamal Qtaishat and Ms. Rula Al-Tamimi, Jordan National Building Council (JNBC).
* Mrs. Nour Al-Saideh, Consultant.
* Dr. Erfan Ali, Consultant.

## Evaluation of Output 1 Activities

### General

To produce credible information that will be useful for decision makers within UNDP and their partner implementing organizations, evaluations must be designed with a clear understanding of the initiative, how it operates, how it was intended to operate, why it operates the way it does and the results that it produces [7]. It is not enough to know what worked and what did not work (that is, whether intended outcomes or outputs were achieved or not). To inform actions, evaluations must provide credible information about why an initiative produced the results that it did and identify what factors contributed to the results (both positive and negative). Understanding exactly what was implemented and why provides the basis for understanding the relevance or meaning of project or programme results [7]. Therefore, evaluations should be built on a thorough understanding of the initiative that is being evaluated, including the expected results chain (inputs, outputs and intended outcomes), its implementation strategy, its coverage, and the key assumptions and risks underlying the Results Map or Theory of Change. Therefore, the questions outlined in Table 4 are addressed by the evaluator in conducting this evaluation, as shown in Table 5.

*Key Aspects of Output 1*

| **Key Aspect** | **Description** |
| --- | --- |
| **Demand** | Climate change poses a double threat to Jordan and its population. Firstly, increases are expected in the frequency and intensity of weather and climatic hazards such as floods, flash floods, heat and cold waves as well as droughts. Secondly, other changes such as ecosystem degradation, reduced availability of water, food and possible impacts on livelihood, are expected, which in turn could alter the underlying vulnerability of populations to hazards. The Second National Communication report to the United Nations Framework Convention on Climate Change (UNFCCC) -outlines the vulnerability of different sectors including water resources, agriculture and public health [11]. Climate change affects and is affected by disaster risk, both of which have direct impacts on increased poverty and on hampering efforts of poverty reduction. On the other hand there is very limited institutional capacities and awareness on the importance of linkages and coordination between CCA and DRM strategies and policies. |
| **Beneficiaries** | The direct beneficiaries are the agencies responsible for DRM reporting (Jordan Civil Defence) and those responsible for compiling the UNFCCC (Ministry of the Environment). Other direct beneficiaries include the various ministries that participated in workshops and that form part of the technical committee for this output).Indirect beneficiaries include the poor population in general (where the national absolute poverty rate is estimated at 13.3%) which will benefit from increased linkages between CCA, DRM and poverty reduction efforts [11].  |
| **Scope** | The scope of the project includes the whole of Jordan which is affected, albeit to varying degrees by disaster risk and climate change, and in which there is 13.3% absolute poverty, albeit with regional disparities between urban and rural areas and between the North, South and Centre [11].This output also includes a demonstration in the Petra district on linkages between CCA, DRR and poverty. |
| **Outputs and Outcomes** | The main outcome of the project is enhanced capacity of government and civil society organizations to prevent, respond to and mitigate natural and man-made disasters, which is directly linked to one of the UNDAF outcomes. The output is to build new and strengthen existing synergies between governance of disaster risk reduction and climate change adaptation with a view to reduce poverty.This output will be considered successful if it accomplishes a strengthening of synergies between governance arrangements for DRR and CCA.  |
| **Activities** | The following activities were designed, in order to effect change and strengthen linkages between DRM and CCA:* Assessment of existing and potential linkages between CCA and DRR and identification on how this synergy can enhance poverty reduction.
* Design a framework for action to promote potential linkages between CCA and DRR, in order to enhance poverty reduction, including i) theoretical linkages between DRR and CCA, ii) recommendations on required modifications in DRR and CCA policies to strengthen linkages, and iii) recommendations on improving institutional coordination amongst committees, council/ departments dealing with DRR and CCA.
* Production of a draft Project / strategy document to UNDP, to frame and facilitate their future support for the implementation of the framework for action.
 |
| **Theory of Change or Results / outcome map** | The framework for action including recommendations, outlined in the second activity above, will be shared with the government (through the Jordan Civil Defence who in turn will pass them to the Ministry of the Interior who in turn will pass them to the Council of Ministers). It is assumed that these recommendations will then be included in the National Development Plan and in Sectoral Development Plans, which also assumes that they will be in a format easily amenable for inclusion in the above national and sectoral plans. |
| **Resources** | The following resources were allocated for the completion of these activities:* Time: The project was originally intended to be carried out during the last two quarters of 2011 and first two quarters of 2012.
* Talent: a contract was signed between UNDP and IUCN West Asia office in July 2012 to carry out the work for a total sum of $25,038.
* Information: Information used in this output includes reports and knowledge related to national and international initiatives on DRR and CCA including HFA and UNFCC reports.
* Financial resources: $ 57,750 originally divided between activity 1($5,500), activity 2 ($30,250) and activity 3(22,250).
 |
| **Stakeholder and Partnership Methodology** | This output was carried out in partnership between the UNDP and JCD who are the main implementing partners for this output. The UNDP then signed a contract with IUCN to provide services to carry out the three activities which were delivered to the JCD.The JCD are the main authority responsible for DRM in the country and they are also the focal point for the HFA, which is promoted by UNISDR and supported by UNDP. It is for this reason that the JCD were selected as a partner in this project. Notwithstanding the above, it is important to note that the JCD are not directly or indirectly mandated with poverty reduction effort.  |
| **Phases of Implementation** | The documents provided to the UNDP and JCD include an Institutional Analysis Report “Mapping and assessing the existing and potential linkages between CCR and DRR in Jordan“which is the deliverable for activity 1 submitted in September 2012, and a Framework report, which is the main deliverable for activity 2, submitted in November 2012. The main deliverable for the third activity (strategy / project document) is currently being finalized, however an earlier draft has been shared with UNDP. It is envisaged that this will be complete by the end of the project as it will act as an umbrella under which future funding can e secured and as such it is in all parties interest to ensure its completion. |
| **Modification from Original Design** | The changes to this output are mainly related to extension in the delivery dates due to several reasons including securing the necessary consultants to do the work.The extension in the timeline of the project meant the project advisory committee related to this output continued to meet on a regular basis for a longer period of time, thereby raising the awareness of the different stakeholders on the important role that DRR and CCA linkages can play in poverty reduction efforts. |
| **Evaluability** | This output is easily evaluated through the review of deliverables in the form of reports, which can be reviewed in order to verify results of this output.The implementing partners (JCD) submitted quarterly progress reports, and one annual report for 2012, as per the monitoring framework and evaluation guidelines outlined in the original project document. Furthermore, there are two board meetings and corresponding presentations that review the progress. Notwithstanding the above, several flaws have been identified in the monitoring and evaluation process, as summarized below:1. The risks identified in the quarterly progress report are too generic. 2. The annual progress reports for this output do not adhere to the UNDP guidelines on project monitoring and evaluation [7] (p.115). In particular, an analysis of project performance over the reporting period and a discussion on issues, risks and reasons behind the constraints were not adequately tailor made or detailed.3. The role of the Project Assurance, which is clarified in Box 23 (p. 115) of the UNDP guidelines on project monitoring and evaluation [7], and which includes ensuring adherence to monitoring and reporting requirements and standards, was not fulfilled. This is particularly true since the project continued without PA for a considerable time, which implied that the above deficiencies in reporting were not promptly identified. 4. The board meeting reports (in word format) and the board meeting presentations did not sufficiently adhere to the guidelines stated in the Project Board Preparation guidelines for Project Assurance and Project Manager [[[21]](#endnote-21)] when discussing progress and challenges under this output. In particular, the eleven questions to be considered in the project board reporting (Step 4, p. 1) were not all sufficiently addressed. For example, analysis of progress towards outcome and monitoring and documentation of capacity development gains were not sufficiently addressed. Furthermore, the challenges in the board meeting were all lumped together in a generic manner and not disaggregated according to output.5. Most decisions on project progress and modification were carried out by the Project Technical Committee for this output (referred to in progress reports and board meetings as Project Advisory Committee). However, it is difficult to evaluate the discussions of the project technical committees and the decision making process that led to certain decisions being made, as no minutes are taken during meetings of this committee. The project document itself [6], when discussing organisation structure of the project, did not specify the need for taking minutes during these meetings.6. The above led to a situation where the importance of data loss collation and its linkages to poverty reduction and disaster risk management remained missed throughout the duration of the project. |
| **Cross-Cutting Issues** | The output was designed to include several cross-cutting issues, including poverty reduction, mainstreaming DRM and CCA to safeguard development and investments which in turn contributes to poverty reduction efforts and mainstreaming gender into DRM and CCA initiatives which help in mainstreaming gender considerations in general as well as reducing disparities in inequality and poverty.  |

### Main Criteria of Evaluation

The main criteria for the evaluation, as defined by the UNDP guidance document [7] are discussed and summarised in Table 6, based on the key aspects of the output discuss in Table 5 above.

*Evaluation Criteria for Output 1*

| **Key Aspect** | **Description** |
| --- | --- |
| **Relevance** | Jordan is being affected by climate change, both directly and indirectly through the effect of the latter on the frequency and severity of other hazards including flash floods and landslides amongst others. These affect poorer neighborhoods in rural and urban environments in a disproportionate manner, and if not properly addressed intensify existing disparities of poverty and inequality between rural and urban centres and between the south, north and centre of the country. Addressing the above issues is considered a priority to Jordan both at the national level (e.g. with ongoing efforts to reduce poverty) and at the local levels (e.g. with efforts by ASEZA and PDTRA to prevent, mitigate and respond to the negative impacts of disaster risk and climate change). Therefore, this output and the activities within it are considered relevant to the challenges facing Jordan and consistent with the national and local policies and priorities. Finally, through contributing to poverty reduction in different forms, it is responsive to the UNDP human development priorities of empowerment and gender equality. |
| **Effectiveness**  | The intended results for this output (in terms of activities) have been achieved except for the last result corresponding to activity 3, which is in draft format and in the process of being completed.Regarding the output itself, in the form of strengthening governance arrangements for CCA and DRR with a view to reducing poverty; this may have been better strengthened by selecting an implementing partner directly involved in poverty reduction efforts. Furthermore, there is a risk now that governance arrangements (in the form of clarity of mandates for linking DRR to CCA with the aim of reducing poverty) will be scattered between different departments (i.e. the JCD and the Ministry of Environment) none of whom are mandated with working on poverty reduction. |
| **Efficiency** | The resources (in terms of funds, expertise and time) for this output have been used appropriately as evidence by the prompt conversion of resources to deliverables and results. |
| **Impact** | It is difficult, at the time of writing of this evaluation report, to quantitatively assess the impact of the project on human development and people’s well being. However, it may be qualitatively concluded that by increasing linkages between DRR and CCA, the project is expected to have positive impact on people’s well-being, especially if such efforts are continued in the future including the project proposal for adaptive disaster risk reduction in Petra, the framework for action and the three year action plan.  |
| **Sustainability** | This output had a novel intervention under the umbrella of the somewhat new topics of DRM and CCA. In particular, its sustainability is judged in terms of the following parameters:* **Development of sustainability strategy**: A framework for action has been developed with the aim of delivering it to government to incorporate in national and sectoral development plans. It is envisaged that the successful incorporation of such a framework would go a long way to ensure sustainability. Furthermore, there is work on developing a strategy / project document to frame UNDP’s future support to the implementation of the said framework thereby increasing likelihoods of sustainability of the project.
* **Financial and economic mechanisms** **to ensure ongoing flow of benefits**: these are yet to be in place. However, the incorporation of the recommendations within the framework for action, facilitated by future UNDP interventions through the strategy / project document, would contribute towards the creation of such financial and economic mechanisms
* **Suitable organization arrangements are in place**: Organizational arrangements are not in place as the strengthening of linkages between DRR and CCA with a view to reduce poverty is not mandated to any relevant authority. Furthermore, the lead implementing partner (JCD) may not be the most suitable agency for leading efforts on linkages between poverty reduction, CCA and DRM. While indeed it is mandated to work on DRM, it still focuses mainly on response and is yet to develop a national DRM strategy.
* **Policy and regulatory frameworks are in place**: Policy and regulatory frameworks are not in place as the strengthening of linkages between DRR and CCA with a view to reduce poverty is not mandated to any relevant authority. For future interventions, there is a need to carefully consider the most suitable agency to lead this multi-disciplinary effort, while accounting for the required set of skills that must be built or developed, and to reflect that in regulatory frameworks and corresponding policy statements.
* **The requisite institutional capacity in terms of systems, structures, staff and expertise is in place**: Due to the novelty of the topic there is an acute need to continue building staff capacities and expertise, together with institutional capacity in terms of systems and structures, in order to ensure sustainability of the project.
 |

## Evaluation of Output 2 Activities

### General

As a requisite to carrying out the evaluation, the questions outlined in Table 4 are addressed by the evaluator, in conducting this evaluation, as shown in Table 7.

*Key Aspects of Output 2*

| **Key Aspect** | **Description** |
| --- | --- |
| **Demand** | Both ASEZA and PDTRA have high degrees of exposure of human settlements and important economic assets, which are vulnerable to disaster risk and may become increasingly affected by climate change. Indeed the dead sea fault system which extends the whole length of Jordan and defines its western border is adjacent to many important growing urban centres, including the two growing centres of Aqaba and Wadi Musa, Petra. Aqaba has already attracted dozens of billions of dollars for investment [6], thus necessitating the incorporation of DRR and CCA into their development planning. Similarly Wadi Musa and Petra attract hundreds of thousands of tourist per year, where 90% of tourists visiting Jordan also visit Petra. It is in response to these challenges, amongst other challenges and opportunities, that the Jordan government formed two autonomous bodies to manage the development of the regions of Aqaba and Petra.  |
| **Beneficiaries** | The direct beneficiaries are the two autonomous bodies delegated to manage the regions of Aqaba and Petra, namely the Aqaba Special Economic Zone Authority (ASEZA) and the Petra Development and Tourism Region Authority (PDTRA). Other direct beneficiaries are other stakeholders in the two respective cities who will participate in the DRR district committee and other DRR related activities including capacity building and awareness-raising. Indirect beneficiaries include the poor population in the two cities which tend to be more exposed and vulnerable to the negative impacts of disaster risk and climate change and disproportionally suffer from their respective short, medium and long term losses.  |
| **Scope** | The scope of the project includes the cities of Aqaba and Petra and the region around them included in the Aqaba Special Economic Zone Authority and the Petra Development and Tourism Region Authority [6]. |
| **Outputs and Outcomes** | The main outcome of the project is enhanced capacity of government and civil society organizations to prevent, respond to and mitigate natural and man-made disasters, which is directly linked to one of the UNDAF outcomes. The output is to integrate DRR and CCA into ASEZA and PDTRA including mainstreaming these efforts while accounting for gender sensitivities.The success of the output is achieved by ensuring that DRM have been integrated (mainstreamed and gender sensitive) into the operations of ASEZA and PDTRA.  |
| **Activities** | The following activities were designed, in order to effect change and integrate DRM and CCA into ASEZA and PDTRA.* ASEZA has a fully mandated and operational DRM directorate and DRM district committee formed.
* PDTRA has a fully mandated and operational DRM directorate and DRM district committee formed.
* Assessment of Seismic and flash flood risks for Wadi Musa and feasibility study for the setup of a flash flood early warning system.
* Competency training for member of the DRM district committee and DRM directorate in ASEZA and PDTRA, fully trained in DRM
* DRM master plan for PDTRA and ASEZA are operationalized with action plan and strategy for DRM mainstreaming developed.
 |
| **Theory of Change or Results / outcome map** | The ordinance for DRM will be passed to governor approval in Aqaba and PDTRA. The Organigram and Job Descriptions for the ASEZA DRM directorate and PDTRA DRM unit will be submitted to the ASEZA/PDTRA board for final review and approval.The DRM master plan for Aqaba, prepared during a previous project, will be operationalized and the DRM master plan for Petra will be developed and operationalized. The latter will include and be informed by the integrated risk assessment for Petra.It is assumed that these recommendations will then be approved by the governor (for the ordinance) and by the ASEZA/PDTRA for the DRM directorate / unit respectively, and sufficient funds will be allocated for staffing and empowering the directorate / unit to carry out its task.  |
| **Resources** | The following resources were allocated for the completion of these activities:* Time: This output was originally intended to be carried out during the last quarter of 2011 and until Mid 2013, later extended to end of 2013 and again till mid 2014..
* Talent: Capacity building for ASEZA and PDTRA staff was carried out in progress report writing, proposal writing, mainstreaming marine biodiversity conservation into coastal zone management, risk sensitive land-use planning, safe cities, and community based disaster risk management, amongst others.
* Technology: procure EOC equipment for ASEZA and an early warning system for flash floods for PDTRA, yet to be installed.
* Information: Hazard information on Aqaba and the DRM plan for Aqaba was used as information in updating the Aqaba DRM master plan. Raw hazard data for Petra, together with information available in other
* Financial resources: $ 159,800$ for ASEZA and 564,450 for PDTRA.
 |
| **Stakeholder and Partnership Methodology** | This output was carried out in partnership between the UNDP and ASEZA / PDTRA in Aqaba and Petra respectively, who are the main implementing partners for this output. The UNDP then signed a contract with Dar Al-Omran to carry out an integrated risk assessment of the Petra Tourism region. Other consultants include Jan cools who carried out the feasibility of an early warning flash flood system in Petra.The JCD are the main authority responsible for DRM in the country and they also act as the focal point for the HFA, and are responsible for developing the national disaster management plan. Delays and resistance to setting up ordinances for DRM and setting up a DRM district committee at the local level (see Modifications from original Design below) may be addressed by lobbying and legislation at the national level (e.g. through the ongoing preparation of the national DRM strategy).  |
| **Phases of Implementation** | The documents provided to the UNDP as main deliverables of the activities of this output include:* 1) Feasibility Study for a Flash Flood / Landslide Risk / Rock Fall Assessment and for the Setup of an Early Warning System in Wadi Musa, Petra, June 2012.
* 2) Disaster Risk management Profile for Petra Tourism Region, September – Building Petra Development and Tourism Region Authority Disaster Risk Reduction capacity, September 2013.
* 3) School Booklet and awareness raising posters on DRM and hazards, September 2013.
* 4) Integrated Risk Assessment for Petra Development and Tourism Region, November 2013.
* 5) Aqaba Special Economic Zone Authority – Disaster Risk management Plan, Updated July 2012.
* 6) EOC specification for ASEZA, September 2012.

There were delays in the procurement of equipment for the early warning system in Petra and the emergency operations centre in Aqaba. However, these may still be completed by the end of the project. Currently PDTRA are in the process of signing an agreement with the meteorological department regarding the early warning system. The DRM district committees in both cities; however, does not seem to have been approved by the respective city authorities. This in turn has stalled efforts for mainstreaming DRR into the activities of the respective authorities. |
| **Modification from Original Design** | The changes to this output activities are under three categories: 1) extension in the delivery dates due to several reasons including securing the necessary consultants to do the work 2) delays in taking on board the recommendations by the consultants related to ordinances for DRM and staffing of directorates for both Aqaba and ASEZA; and delays in setting up the DRM district committee. These delays are not related to any delays in project deliverables but in the administrative approval of the implementing partners (i.e. ASEZA / PDTRA) and governor approval in the two respective cities 3) changes to the number of installations for the early warning flash flood system in Petra. The latter modification is expected to decrease the warning time available to decision makers as well as decrease the accuracy of the warnings. However, it was necessary due to budget constraints. Furthermore, the system is amenable to updating by adding new meters. 4) delays in developing the emergency operations plans, with standard operating procedures, based on the developed EOCs, 5) The lack of DRM district committees in both Petra and Aqaba, and the lack of sufficient staffing of the DRM directorate / unit may impact mainstreaming of DRM activities as well as accounting for gender considerations within DRM activities.  |
| **Evaluability** | This output is easily evaluated through the review of 1) copies of the special ordinance, the job description and Organigram and the guidelines on setting up the DRM district committee, 2) review of procured equipment for the emergency operations centre, 3) review of the DRM master plan for PDTRA and the feasibility of the flood early warning system in Petra, 4) review of procured equipment for the flood early warning system, 5) Review the benchmarking of the EMAP standards and sound practices of existing local disaster risk management.The implementing partners (ASEZA and PDTRA) submitted quarterly progress reports, and one annual report for 2012, as per the monitoring framework and evaluation guidelines outlined in the original project document. Furthermore, there are two board meetings and corresponding presentations that review the progress. Notwithstanding the above, several flaws have been identified in the monitoring and evaluation process, as summarized below:1. The risks identified in the quarterly progress report, especially the challenges identified by ASEZA in the implementation of the DRM master plan were not carried through to the board meetings. In addition, other risks are too generic and not detailed enough.2. The annual progress reports for this output do not adhere to the UNDP guidelines on project monitoring and evaluation [7] (p.115). In particular, an analysis of project performance over the reporting period and a discussion on issues, risks and reasons behind the constraints were not adequately tailor made or detailed.3. The role of the Project Assurance, which is clarified in Box 23 (p. 115) of the UNDP guidelines on project monitoring and evaluation [7], and which includes ensuring adherence to monitoring and reporting requirements and standards, was not fulfilled. This is particularly true since the project continued without PA for a considerable time, which implied that the above deficiencies in reporting were not promptly identified. 4. The board meeting reports (in word format) and the board meeting presentations did not sufficiently adhere to the guidelines stated in the Project Board Preparation guidelines for Project Assurance and Project Manager [[[22]](#endnote-22)] when discussing progress and challenges under this output. In particular, the eleven questions to be considered in the project board reporting (Step 4, p. 1) were not all sufficiently addressed. For example, analysis of progress towards outcome and monitoring and documentation of capacity development gains were not sufficiently addressed. Furthermore, the challenges in the board meeting were all lumped together in a generic manner and not disaggregated according to output.5. Most decisions on project progress and modification were carried out by the Project Technical Committee for this output (referred to in progress reports and board meetings as Project Advisory Committee). However, it is difficult to evaluate the discussions of the project technical committees and the decision making process that led to certain decisions being made, as no minutes are taken during meetings of this committee. The project document itself [6], when discussing organisation structure of the project, did not specify the need for taking minutes during these meetings.6. The above led to a situation where the lack of setting up the DRM committee was not captured, at a time when board meeting presentations were listing achievements of training under this activity. It also led to a situation when lack of DRM master plan implementation was not sufficiently captured, leading to a situation where DRM mainstreaming which did not take place not being captured or reported to the project board. |
| **Cross-Cutting Issues** | The output was designed to include several cross-cutting issues, including poverty reduction, mainstreaming DRM and CCA to safeguard development and investments which in turn contributes to poverty reduction efforts and mainstreaming gender into DRM and CCA initiatives which help in mainstreaming gender considerations in general as well as reducing disparities in inequality and poverty.  |

### Main Criteria of Evaluation

The main criteria for the evaluation, as defined by the UNDP guidance document [7] are discussed and summarised in Table 8, based on the key aspects of the output discuss in Table 5 above.

*Evaluation Criteria for Output 2*

| **Key Aspect** | **Description** |
| --- | --- |
| **Relevance** | PDTRA and ASEZA population and economic assets and heritage sites are exposed to seismic and flood hazards as well as being affected by climate change, both directly and through the effect of the latter on the frequency and severity of other hazards including flash floods and landslides amongst others. Addressing the above issues is considered a priority at the national level and at the local levels (e.g. with efforts by ASEZA and PETRA to prevent, mitigate and respond to the negative impacts of disaster risk and climate change). DRM and CCA are best addressed by integrating them within the activities of ASEZA and PDTRA through mainstreaming them while accounting for gender considerations. Therefore, this output and the activities within it are considered relevant to the challenges facing Aqaba and ASEZA, and consistent with the national and local policies and priorities. Finally, through contributing to DRM and CCA mainstreaming while accounting for gender considerations, it is responsive to the UNDP human development priorities of empowerment and gender equality. |
| **Effectiveness**  | The intended results for this output (in terms of activities) in terms of studies on feasibility of early warning system and integrated risk assessment for Petra Development and Tourism Region, and update of the disaster risk management master plan for the Aqaba Special Economic Zone have been achieved. Furthermore, capacity building of staff in both authorities has been carried out. The early warning system in Wadi Musa (Petra) and the installation of the emergency operations centre in Aqaba are in the process to be completed.However, the main challenge in this output is the ordinance of the DRM directorate and unit in ASEZA and Petra respectively, its staffing and enabling with the necessary funds, and the setting up of the disaster risk management committees in both authorities. While proposals have been sent from the relevant project staff to the governor and authorities, these proposals are yet to be acted upon. This in turn will inevitably delay efforts for integrating DRM into the work of both authorities, mainstreaming it into the work of all relevant directorate and ensuring that such efforts account for gender considerations.Furthermore, the PDTRA DRM master plan, together with the emergency operations plan for response and recovery in both PDTRAZ and ASEZA are yet to be completed. They have been stalled partly as a result of lack of ability to setup the DRM district committees and associated mainstreaming of DRR activities.Regarding the output itself, for reasons stated above, there is a risk that governance arrangements for DRR to CCA will not be mainstreamed into the work of different departments both within the authority (due to lack of sufficient staffing) and within the governorate and community at large (due to lack of DRM district committees).As will be discussed in later sections, this may be addressed in future projects by strong lobbying and creating demand from the national level, where it is envisaged this will then be transferred to the local level. |
| **Efficiency** | The resources (in terms of funds, expertise and time) for this output have been used appropriately as evidenced by the conversion of resources to deliverables and results. However future improvements may be achieved by ensuring top management is in line with adopting recommendations arising from the project (e.g. setting up DRM district committees and mainstreaming DRR considerations).Future improvements in efficiency may be achieved by carrying additional in-situ training and adopting a more decentralized approach for management leading to less travel and per-diem associated costs. A pre-requisite would be a training of trainers program and a training needs assessment in both authorities to ensure efficiency and sustainability of such training efforts. |
| **Impact** | The integrated risk assessment in Petra provides useful information for decision makers, which will have a direct impact on their ability to carry out risk-sensitive land-use planning. The installation of the early warning systems is expected to have a direct impact on the lives of the population living downstream as well as the safety of responders who can now be better prepared in a safer manner to respond. Furthermore, it is envisaged that the EOC in ASEZA will have a direct and positive impact on response operations in terms of a more prompt and effective response interventions. The envisaged positive impact of mainstreaming DRR considerations into the working of ASEZA and PDTRA is yet to happen due to lack of ordinances for setting up the DRM district committees. |
| **Sustainability** | This output included novel interventions (in Petra) while building on existing achievements and deliverables from previous projects in ASEZA. In particular, its sustainability is judged in terms of the following parameters:* **Development of sustainability strategy**: A framework for action has been developed and delivered to local authorities who are yet to approve it. While it is envisaged that the successful incorporation of such a framework would go a long way to ensure sustainability, it is not clear if these recommendations will be approved by the local authorities.
* **Financial and economic mechanisms** **to ensure ongoing flow of benefits**: these are yet to be in place. However, the incorporation of the recommendations policy and regulatory frameworks, would contribute towards the creation of such financial and economic mechanisms
* **Suitable organization arrangements are in place**: the DRM district committee which would go a long way toward ensuring sustainability of any mainstreaming efforts has not been established.
* **Policy and regulatory frameworks are in place**: The board of directors has created DRM directorates and Units in ASEZA and PDTRA, however not with all the necessary staffing arrangements to carry out full integration of DRM in the working of ASEZA and PDTRA.
* **The requisite institutional capacity in terms of systems, structures, staff and expertise is in place**: The DRM directorate in ASEZA and the DRM unit in PDTRA have not been fully staffed, due to budget constraints, which makes it highly unlikely that the existing staff will have all the necessary capacities.
 |

## Evaluation of Output 3 Activities

### General

As a requisite to carrying out the evaluation, the questions outlined in Table 4 are addressed by the evaluator, as shown in Table 9.

*Key Aspects of Output 3*

| **Key Aspect** | **Description** |
| --- | --- |
| **Demand** | Most Jordanian cities are exposed to seismic hazards and many may be vulnerable and may suffer excessive losses due to the fact that earlier investment by the public sector and development by the public sector did not sufficiently account for seismic risk considerations. This problem however may be addressed using corrective disaster risk management strategies where the existing risk may be assessed and reduced to acceptable levels. A requisite for any corrective disaster risk management strategies for earthquake risk is to develop the ability to analyse and assess the level of risk in existing buildings and develop rehabilitation and retrofitting schemes to improve their dynamic and lateral load carrying capacity if necessary. This in turn requires modifications to the code regulations, capacity building to new students through provision of seismic analysis and retrofitting courses at university undergraduate levels, and capacity building for existing employees in both the private and public sector. |
| **Beneficiaries** | The direct beneficiaries are the authorities delegated to manage the building code of Jordan (the JNBC), new students in Jordanian universities who will acquire new skills related to seismic design and analysis including retrofitting, the individual engineers who will be trained and the administrations in which these engineers work. Other direct beneficiaries are other stakeholders working in the nominated buildings that will be assessed against seismic risk and strengthened subject to the results of the assessments. Indirect beneficiaries include the general population of Jordan who will benefit from the eventual decrease in the levels of seismic risk. |
| **Scope** | The geographic scope of the project includes all structures within rural and urban areas in Jordan, with more focus on urban areas where seismic risk is concentrated. The project focuses on buildings for the civil Defence and the ministry of education due to the role that former plays in responding to earthquake disasters and the consequences of collapse and potential for large fatalities in the case of the latter.Engineers to be trained are from the Ministry of Public Works (JNBC), civil Defence, army, RSS, ASEZA and PDTRA amongst others. |
| **Outputs and Outcomes** | The main outcome of the project is enhanced capacity of government and civil society organizations to prevent, respond to and mitigate natural and man-made disasters, which is directly linked to one of the UNDAF outcomes. The output is to strengthen national institutional capacities to modify the national building code and carry out seismic structural assessment of buildings and design retrofit; and to carry out a seismic structural vulnerability assessment of key JCD buildings and schools.The success of the output is measured by the actual modification of the code and the ability of the trained engineers to perform the assessment. |
| **Activities** | The following activities were designed, in order to effect change and build national institutional capacities to modify the national building code and carry out seismic strengthening of buildings and design retrofits:* Update and approve the national building code to include a revised map of seismic risk and special provisions for retrofitting.
* Train 25 civil engineers from different stakeholder organizations to become trainers in structural/ / non structural assessments.
* Assess and provide retrofit design for 20-25 JCD buildings and the main UN building. .
 |
| **Theory of Change or Results / outcome map** | The trained engineers will be divided into groups where each group will be responsible for assessing and designing retrofit where necessary for 4-5 buildings. Furthermore, the trained engineers will be required to train other engineers on seismic analysis, assessment and design retrofit.It is assumed that the training will be carried out by a competent company that will be able to build the capacity of the engineers to 1) carry out nonlinear seismic analysis of buildings, 2) carry out design and analysis for seismic retrofitting, 3) used advanced nonlinear seismic analysis software to do the above and 4) be sufficiently well versed in the above tasks in order to be able to impart their knowledge to other trainees.  |
| **Resources** | The following resources were allocated for the completion of these activities:* Time: The project was originally intended to be carried out from November 2011 until December 2013, later updated to June 2014.
* Talent: a contract was signed between UNDP and JBNC as main partners, and other subcontracts with RSS and EQCO (Italy).
* Technology: Software was acquired (seismostruct) and engineered trained in order to be able to fulfill the tasks in the contract.
* Information: various stakeholders collaborated with the main implementing partner and stakeholders to provide details for the buildings to be assessed, including the JDC and ministry of education.
* Financial resources: $ 500,000 envisaged in project document.
 |
| **Stakeholder and Partnership Methodology** | This output was carried out in partnership between the UNDP and JNBC, who are mandated for developing the national building code in Jordan. The UNDP then signed a contract with RSS to carry out the modification of the national building code to include chapters on retrofitting and to update the seismic risk map. Other important consultants include ECQO, the Italian company who was supposed to carry out the competency training for the engineers including the demonstration of the training on 4 selected buildings and the RSS in a second contract where they were to act as the national consultant in the training module.The JNBC are the suitable authority for being partners in this output as they are responsible for code development and their involvement as lead partner would ensure ownership and contribute to sustainability efforts. The RSS have experience in code development and structural assessments and as such were engaged as consultants in this regard. |
| **Phases of Implementation** | The documents provided to the UNDP as main deliverables of the activities of this output include:* 1) EQCO training material for days 1 to 10, case studies, background papers and demo version of seismostruct software. The course was held between 10 and 28 March 2013.
* 2) RSS provided a PowerPoint presentation on their work on code updating, which included the following:
	+ .updating the seismic design provisions according to IBC 2012, which was due to be completed in 12-2013 but have been delayed due to delays in completion of cases studies as it was going to include buildings which have been retrofitted.
	+ Updating of the reinforced concrete code which was due to completion in March 2014 and will also include results of the assessments and retrofitting.

Upon completion of project in June 2014, it is envisaged that additional deliverables will include results of the assessments of buildings selected for appraisal together with design retrofit for the buildings where this is deemed necessary. . |
| **Modification from Original Design** | The changes to this output activities are under three categories: 1) extension in the delivery dates due to several reasons including securing the necessary consultants to do the work 2) selection of consultancy / body that will carry out the training of the engineers 3) the total number of buildings that will be assessed and retrofit design developed if necessary. The company which was selected for carrying out the work (ECQO) did not account for carrying out detailed retrofit design in their proposal, or for empowering the trained engineers in the use of their software. Instead they considered their task to solely train engineers to repeat the presentation they are being given.This deficiency in the training provided by ECQO may impact the ability of engineers to effective assess buildings and design detailed retrofit solutions, and may also decrease the total number of buildings to be assessed and where retrofit design will be prepared if necessary. The UNDP in cooperation with the JDC are in discussion with the original training provider who are expected to come to Jordan shortly to carry out training with the same objective, and the return to Jordan to complete the assessment for 12 buildings |
| **Evaluability** | This output is easily evaluated through the review of 1) the report of the consultants on the proposed revisions of the building code, 2) copies of the revised building codes,3) copy of the curriculum for training of engineers, 4) report of the training workshop for engineers, 5) report of the structural assessment and retrofit design reports.The implementing partners (JNBC) submitted quarterly progress reports, and one annual report for 2012, as per the monitoring framework and evaluation guidelines outlined in the original project document. Furthermore, there are two board meetings and corresponding presentations that review the progress. Notwithstanding the above, several flaws have been identified in the monitoring and evaluation process, as summarized below:1. The risks identified in the quarterly progress report are too generic. 2. The annual progress reports for this output do not adhere to the UNDP guidelines on project monitoring and evaluation [7] (p.115). In particular, an analysis of project performance over the reporting period and a discussion on issues, risks and reasons behind the constraints were not adequately tailor made or detailed.3. The role of the Project Assurance, which is clarified in Box 23 (p. 115) of the UNDP guidelines on project monitoring and evaluation [7], and which includes ensuring adherence to monitoring and reporting requirements and standards, was not fulfilled. This is particularly true since the project continued without PA for a considerable time, which implied that the above deficiencies in reporting were not promptly identified. 4. The board meeting reports (in word format) and the board meeting presentations did not sufficiently adhere to the guidelines stated in the Project Board Preparation guidelines for Project Assurance and Project Manager [[[23]](#endnote-23)] when discussing progress and challenges under this output. In particular, the eleven questions to be considered in the project board reporting (Step 4, p. 1) were not all sufficiently addressed. For example, analysis of progress towards outcome and monitoring and documentation of capacity development gains were not sufficiently addressed. Furthermore, the challenges in the board meeting were all lumped together in a generic manner and not disaggregated according to output.5. Most decisions on project progress and modification were carried out by the Project Technical Committee for this output (referred to in progress reports and board meetings as Project Advisory Committee). However, it is difficult to evaluate the discussions of the project technical committees and the decision making process that led to certain decisions being made, as no minutes are taken during meetings of this committee. The project document itself [6], when discussing organisation structure of the project, did not specify the need for taking minutes during these meetings.6. The above led to a situation where the terms of reference for the international company and the local entity (both of which were reviewed and approved by the project technical committee for this output) were not sufficiently scrutinised. It also implied that the process for selecting the training of engineers for this output was not based on a training needs assessment, which not turn was neither identified by the project document itself or by subsequent project technical committee meetings, annular progress reports and board meetings. |
| **Cross-Cutting Issues** | The output was designed to include several cross-cutting issues, including corrective risk disaster management strategies for seismic risk which will affect many sectors including safety, health, and education sectors. , By developing corrective disaster risk management strategies it become possible to safeguard existing development gains which in turn contributes to poverty reduction efforts initiatives and helps in reducing disparities in inequality and poverty.  |

### Main Criteria of Evaluation

The main criteria for the evaluation, as defined by the UNDP guidance document [7] are discussed and summarised in Table 10, based on the key aspects of the output discuss in Table 9 above.

*Evaluation Criteria for Output 3*

| **Key Aspect** | **Description** |
| --- | --- |
| **Relevance** | Jordan is exposed to seismic hazards and its buildings and infrastructure are not all resilient to such hazards. As such there is a need to reduce seismic vulnerability by adopting corrective disaster risk management strategies for seismic risk. Such strategies require updating of building codes, building capacity for engineers to analyse and propose seismic retrofitting detailed design schemes and including seismic design and retrofitting into undergraduate courses in civil engineering degrees in Jordanian universities. Therefore, this output and the activities within it are considered relevant to the challenges facing Aqaba and ASEZA, and consistent with the national and local policies and priorities. Finally, through building capacities for corrective disaster risk management strategies for seismic risk, it is responsive to the UNDP human development priorities of safeguarding development gains to be able to build on them to promote empowerment and gender equality.. |
| **Effectiveness**  | The intended results for this output (activities) in terms of updating of the national building code are on track to be completed by the end of the project, subject to completion of the case studies for the assessment and retrofit detailed design for the selected buildings, as these remain the main outstanding section in the code (the examples based on the assessments).The concept note on the curriculum for the seismic design and retrofitting course at the level of the undergraduate civil engineer degree is also reported to be complete.The capacity building for the public and private sector engineers took place by the Italian company EQCO; however, it did not achieve the desired result of building the trainees’ capacity to be able to use specific software to for the seismic analysis of buildings and subsequent development of detailed design for retrofitting schemes. Consequently, subsequent activities of detailed assessment of 20-25 buildings comprised of JCD key buildings and schools are yet to take place.JNBC, as the main partner in this output, together with UNDP and SDC, are working to identify alternative training companies able to complete this task.Regarding the output itself, the national institutional capacity for carrying out seismic structural assessment of buildings and design retrofit schemes is yet to be complete. |
| **Efficiency** | The resources (in terms of funds, expertise and time) for this output have been used appropriately for the development of the Jordanian building code, subject to final prompt delivery of code.However, resources for training could have been used more effectively where in this regard the main problem is the selection of EQCO which turned out unable to deliver the requested training within the budget and the specification. In particular the personnel attending the training gained knowledge in terms of capacity building and awareness raising but the objectives of the training in producing engineers capable of carrying out seismic analysis of existing buildings and developing retrofit detailed design schemes are yet to be achieved.). In this context, it should be recognized that the RSS were unable to promptly identify the above weaknesses in the training.Future improvements in efficiency may be achieved by the development of detailed terms of reference, especially for foreign companies and particularly when embarking on a novel capacity building exercise. |
| **Impact** | The successful completion of the activities within this output, namely the modification of the building code and capacity building of new and practicing engineers will have a positive impact on the ability of the public and private sector to engage in corrective disaster risk management strategies corresponding to seismic risk. The use of these capacities for improving safety in critical sectors including government buildings, civil Defence, education and health is envisaged in turn to have a direct impact on protecting development gains and enhancing poverty reduction initiatives.  |
| **Sustainability** | This output includes novel interventions (in terms of capacity building for carrying out seismic analysis of buildings and design detailed design for retrofit schemes) while building on existing achievements and deliverables from previous projects in updating the national building code. In particular, its sustainability is judged in terms of the following parameters:* **Development of sustainability strategy**: there is a strategy consisting of training 25 engineers from various private sector companies and public sector departments, including practical training of carrying out assessments. These engineers are supposed to act as trainers within their own departments and beyond. Furthermore, the engineers’ skills are supposed to be honed and refined through applying their skills to the assessment and detailed retrofit design of 25 buildings shared amongst them. This strategy to ensure sustainability has now been modified where a select group will attend training in turkey and then apply their skills for the assessment of 12 buildings. Despite modifications and delays, this remains a valid method to ensure sustainability, provided the training and subsequent assessment succeeds.
* **Financial and economic mechanisms** **to ensure ongoing flow of benefits**: these are yet to be in place. However, the incorporation of seismic analysis and detailed retrofitting design, in an explicit manner, in policy and regulatory frameworks, would contribute towards the creation of such financial and economic mechanisms
* **Suitable organization arrangements are in place**: Organizational arrangements are to a large extent in place within the JNBC but need strengthening through policy and regulatory frameworks, financial and economic mechanisms, and finally institutional capacities.
* **Policy and regulatory frameworks are in place**: Further refinements may be necessary to ensure that the developed capacities are effectively made use of through changes in ordinances and job descriptions.
* **The requisite institutional capacity in terms of systems, structures, staff and expertise is in place**: Institutional capacities in terms of software, staff and expertise are in the process of being built.
 |

# Conclusions and Recommendations

## Introduction

This chapter reviews lessons learnt and provides recommendations on design modifications and specific actions in order to:

* Improve effectiveness of similar projects in the future.
* Improve impact of similar projects in the future.

## Lessons Learnt

This main lesson emerging from analyzing the progress and the challenges of this project are listed below:

* **Awareness raising of local officials and building demand at the local level**: ASEZA and PDTRA have established DRR unit, with varying degrees of staffing and legislation. More work and awareness raising is required to create and consolidate demand at the local level regarding the importance of working on the following issues:
	+ The creation of a DRM district committee.
	+ Mainstreaming DRM and CCA into the activities of the authority, while accounting for variations in exposure, vulnerability and risk according to gender considerations.
	+ Modifying budget lines to account for expenditure on various aspects of DRR under various budget categories including:
		- Understanding hazards and risks (with three subcategories of hazard identification, mapping and risk assessment; hazard monitoring, forecasting and warning; and research and development).
		- Minimizing exposure (with four subcategories structural / physical measures; technical / non-structural measures; social and economic measures; preliminary and detailed engineering of disaster counter measures).
		- Lessening vulnerability and building resilience (with four subcategories preparedness; disaster response, sustainable recovery, risk financing).
		- Risk Governance (with four subcategories legislation for DRM at national and local level; setting criteria for tolerable and intolerable risks; developing processes, mechanisms for a risk governance framework; developing mechanisms for risk communication).
	+ Strengthening linkages between DRM (including collation and analysis of extensive and intensive disaster losses), CCA, and poverty analysis and poverty reduction efforts.
* **Importance of institutions and legislation at the national level**: The Jordan Civil Defence is mandated will all matters related to DRM, including the drafting of a national strategy for Disaster Risk Management. It is envisaged that the strategy drafted by the JCD, or any other institution in case of a change of mandates since carrying out the interviews, will have national, institutional, sectoral and local / governorate components. The UNDP could engage the JCD, and other relevant mandated institutions, as an implementing partner in future projects in order to provide technical assistance in the refinement of the strategy before it is issued, in order to ensure that the DRM national strategy will include:
	+ The above topics referred to under the role of local authorities.
	+ That it adopts a balanced strategy comprised of corrective, prospective and compensatory disaster risk management approaches.
	+ That it adopts a balanced strategy for financing risk management strategies founded on the pillars of risk retainment and reduction, insurance and reinsurance and finally transfer to capital markets.
	+ That it sufficiently engages the private sector and empower it to play its role in responsible investments at both the local and national levels, while directing efforts at risk transfer mechanisms.
	+ That it adopts the concepts of disaster risk governance, including the promotion of gender disaggregated DRM practices such as participatory, gender disaggregated vulnerability, capacity and needs assessment.
	+ That it sufficiently focuses on recovery and recognizes it as the main link between poverty reduction efforts through resilient livelihoods on the one hand, and DRR and CCA on the other hand. This is particularly important as it seems to be specifically missing from all activities currently being carried out at both the national and local levels, as indeed widely prevailing practice in the region.
* **Importance of the roles of a Chief Technical Advisor (CTA) at the national and local levels:**  whether in the design of the project document or during its implementation, the project document (and the outcome, outputs and activities within) could have benefitted from the presence of a Chief Technical Advisor (CTA), able to advise staff at the national or local levels as challenges arise and necessary modifications to the original design of the project document become inevitable. Such an approach during the design and implementation of the project document could have contributed to improved design and implementation of the project document, including the following:
	+ Better linkages in the project document between CCA, DRR and poverty reduction through the introduction of an element within this output related to disaster losses and their collation, which is mandated to the JCD which currently will only receives the report deliverable from IUCN and pass them to the relevant ministry (Ministry of Interior). Under this output, it would have also been beneficial to build capacities of the Civil Defence in the collation and analysis of extensive and intensive disaster risk losses and determine how they compare with trends at the international level in both developing and developed countries, and how these in turn are affected by CCA, DRM and poverty reduction efforts.
	+ Improved mapping of training needs through the carrying out of a training needs assessment at both the national and local levels.
	+ Improved follow up and communication with project board regarding main challenges including the delays in the approval of the special ordinances for DRM at the local level (ASEZA and PDTRA) and the setup of the DRM district committees.
	+ Improved engagement with the JDC on the paramount role of the national DRM strategy and the necessity for it to include the elements referred to above.
	+ Contribution to carrying out training in Arabic where necessary, or at least by Arabic speakers even if some of the technical material has to be in English (e.g. the case of the nonlinear seismic analysis and retrofitting software).
	+ Assistance to PA and NPMA in the fulfillment of their respective tasks according to best practice guidelines and lessons learnt worldwide.
* **Importance of the role of Project Assurance:**  the project could have benefitted from the presence of a personnel related to Project Assurance to ensure accuracy of results reporting, monitoring and evaluation. However, due to staff changes this post left vacant during a critical part of the project progress.
* **Importance of the role of Project Technical Committee:**  the project technical committees for the three outputs played a very important role in taking decisions as the project progressed. These decisions included analyzing progress, approving terms of reference for consultants and analyzing and identifying needs for deviating from original set of activities. Many of the challenges identified in this report are related to decisions taken by the project technical committee, perhaps in response to emerging challenges. In order to better scrutinize the decision making process of the project technical committees, there is a need to keep minutes of the discussion which take place during meetings of these committees including the various alternatives which are considered and the reasoning for selecting a particular alternative.

## Design Modifications and Specific Actions to Improve Effectiveness of Similar Future Projects

The project has been effective in as far as it carried out the various activities outlined within the outputs. While certain delays occurred related to the activities of output 1, 2 and 3; it is envisaged that these will be completed by the end of the project (30 June 2014), except for the setting up of the DRM district committees and subsequent DRR mainstreaming in ASEZA and PDTRA, as well as the setting up of the EOP and EOC for ASEZA. Notwithstanding the above, the efficiency of future projects related to DRM and CCA may be improved by giving due consideration to the following aspects:

Project Design

* A stronger role for a chief technical advisor, who would be able to grasp best practices and international lessons worldwide and adapting to the regional, national and local contexts under consideration during both the design and the implementation of the project, thus providing valuable assistance and support to the roles of the PA and the NPMA.
* The design of the project document should ensure that future projects working on linkages between DRR, CCA, poverty analysis and poverty reduction have an integral element related to the collation of disaster losses and their analysis based on extensive and intensive disaster loss considerations.
* The training should be informed by a training needs assessment which would identify the training needs required in order to adapt and implementing best practices worldwide including those related to tracking and allocating funds for DRR, development of balanced DRM portfolios between corrective, prospective and compensatory DRM strategies, balanced portfolio for financing DRM strategies, private sector role and practices in risk transfer, amongst others.
* The project design should link as much as possible, and try to influence if possible, the national DRM strategy being pioneered by the JCD. This would help ensure direct correspondence between local and national priorities and would help enlist the help of the JCD, as the main body mandated with DRM, in case of resistance to change from local bodies and authorities.
* The project design should as much as possible try to link to corrective disaster risk management strategies in national critical infrastructures (i.e. education, civil Defence and health) as well as illegal settlements and poor neighborhoods where recent research has shown the corrective risk management strategies are most effective when applied to the most vulnerable 20% of the population.

Project Implementation

* There is a need for a stronger role for a CTA during project implementation, and participation in the different Project technical Committees, thus providing valuable assistance and support to the roles of the PA and the NPMA
* The project modifications and Terms of Reference (ToRs) to consultants other than the Implementing partners should be reviewed by a CTA.
* Thorough follow-up on the main activities that can have an impact on the successful achievement of outputs and outcomes of the project, which should already have been identified by the Risk Matrix in the project document itself. For example, the project under consideration could have benefited from a more detailed risk matrix identifying that the lack of adoption of special ordinances and lack of setup of a DRM district committee would jeopardise efforts to integrate and mainstream DRR and CCA activities into the functioning of ASEZA and PDTRA while accounting for gender considerations.
* Thorough follow up is required during project implementation to ensure that initiatives for DRR and CCA linkages to poverty analysis and poverty reduction are linked in an effective manner to improving resilience of livelihoods especially in poorer and most vulnerable communities while accounting for gender considerations.
* Thorough follow up is required during project implementation to ensure that corrective disaster risk management strategies are effectively targeting the most vulnerable sectors, communities and urban neighbourhoods.

## Design Modifications and Specific Actions to Improve Impact of Similar Projects

The impact of this project on human development and people’s well being will be guaranteed by the completion of the project activities (30 June 2014); and will include an improvement in the resilience of livelihoods as a result of output 1; an improvement in peoples’ well being in Wadi Musa as a result of the installation of the flash flood early warning system as a result of output 2; and an ability to better safeguard development gains by building capacities in the field of corrective disaster risk management particularly that corresponding to seismic risk. Notwithstanding the above, the impact of future projects related to DRM and CCA may be improved by giving due consideration to the following aspects:

Project Design

* Stronger linkages within outputs for the protection of development and poverty reduction gains, through the focus on corrective strategies targeting the most vulnerable communities and improved capabilities for disaster loss collation and analysis. In this regard, it should be recognized that international experience demonstrates that corrective disaster risk management strategies, while costly in comparison to prospective disaster risk management strategies, are most cost effective when targeting the most vulnerable 20% of the population and corresponding infrastructure in terms of human settlements and their infrastructures and livelihoods.
* Stronger linkages within outputs for disaster risk governance which delineates roles and responsibilities for disaster risk into four main stages (risk pre-appraisal, societal and technical risk assessments, risk evaluation and risk management all pillared around a two way risk communication strategy). Indeed recent international experience by UN agencies among other international NGOs working on DRM reveals that vulnerability can only be reduced by addressing inequality in exposure, vulnerability, risk transfer mechanisms all of which are related to inequality in access to decision making process related to DRM (e.g. for more information the GAR 13 [[[24]](#endnote-24)] report addresses this issue in detail).
* Stronger focus within outputs on understanding risk transfer mechanisms by the private sector, including in particular the real estate and construction sectors. Indeed best practice guidelines as embodied by the GAR 13 report [21] stresses the importance of focusing on understanding risk transfer mechanisms to better comprehend how the decision making process related to DRM can be adapted to ensure more equal risk transfer practices.
* Minimal if any resources are currently allocated for disaster recovery, as defined in the UNISDR terminology and reproduced in the definitions section at the beginning of this report. Indeed, examination of answers on recovery preparations within the national and local (Petra and Aqaba) HFA reporting templates shows that differences between recovery and response are not properly understood. In particular, the linkages of recovery to livelihoods and the development process in general are not well understood even though these are necessary in order to improve synergies between DRR, CCA, poverty analysis and poverty reduction efforts. Indeed, in the absence of comprehensive corrective strategies for DRM (which is in line with international best practice that recommends targeting the 20% most vulnerable settlements, communities and sectors), recovery planning becomes more important to prevent risk from accumulating again in the wake of any disaster. Developing and delineating responsibilities for recovery strategies and policies will have a direct impact on poverty reduction efforts, and may be addressed by considering the following activities:
	+ Development of explicit mandates at the national, sectoral and local level for the development and updating of recovery plans.
	+ Building capacities at the national, sectoral and local levels for the development of recovery plans, including plans for recovery in the wake of losses corresponding to extensive risks.
	+ Allocation for funds for the development of recovery plans.
	+ Creation of a recovery category for budget expenditure under DRM.
* Progress in all the above areas is dependent to a large extent on the ability of the project document and related staff to engage the JCD so that the above is reflected within the national strategy for DRM currently being prepared by the JCD.

Project Implementation

* Ensure that quality criteria and quality methods identified in the quality management framework for project activity results do measure the impact of activities and not solely related to input-based deliverables (e.g. the reports delivered, the strategies and policies developed, etc)
* Provide a more detailed analysis of the impact of various risks within the risk analysis matrix both within the initial project document and in the course of the monitoring and ongoing evaluation of project activities.
* Update the training needs assessment at several junctures during project implementation to ensure that capacities required for carrying out activities necessary for improving project impact as listed above are being acquired in a suitable manner.
* Ensure that training and capacities needs assessment, referred to above, are carried out in a participatory manner that account for variations in exposure, hazard and risk according to gender considerations.
* Follow up on the implementation of the roles and responsibilities of any DRM and DRR units at both local and national levels, together with DRM district committees at the local level, to ensure that DRR and CCA integration is being carried out in a manner that accounts for gender consideration and provide advice on how best to ensure that when necessary.
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