Intersectoral Coordination for the Implementation of the Climate Change Policy of the Jordanian Environment Ministry (GF – ICE)

Climate Change Governance in Jordan: Towards Policy and Institutional Coordination

Amman
October 2015

List of Abbreviations

ASEZA	Aqaba Special Economic Zone Authority
BMZ	German Federal Ministry for Economic Cooperation and Development
BURs	Biennial Update Reports
CCD	Climate Change Directorate
COP	Conference of the Parties
DNA	Designated National Authority
DOS	Department of Statistics
EDP	Executive Development Program
FAO	Food and Agriculture Organization
GAM	Greater Amman Municipality
GF ICE	Project of "Intersectoral coordination for the implementation of "national climate change policy in Jordan
GHG	Greenhouse Gases
ICZM	Integrated Coastal Zone Management
IMCCC	Inter-ministerial Committee on Climate Change
INDCs	Intended Nationally Determined Contributions
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for the Conservation of Nature
JCI	Jordan Chamber of Industry
JNCCC	Jordanian National Committee on Climate Change

JREEEF	Jordan Renewable Energy and Energy Efficiency Fund
KP	Kyoto Protocol
LEDS	Low Emission Development Strategy
LNG	Liquefied Natural Gas
LULUCF	Land Use, Land Use Change and Forestry
MEMR	Ministry of Energy and Mineral Resources
MRV	Monitoring, Reporting and Verification
MoEnv	Ministry of Environment
MoPIC	Ministry of Planning and International Cooperation
NAAP	National Adaptation Action Plan
NAMAs	Nationally Appropriate Mitigation Actions
NCCC	National Committee on Climate Change
NEEAP	National Energy Efficiency Action Plan
RSS	Royal Scientific Society
PMR	Partnership for Market Readiness
SNC	Second National Communication
TNA	Training Needs Assessment
TNC	Third National Communication
WAJ	Water Authority of Jordan
UNFCCC	United Nations Framework Convention on Climate Change

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I. GF-ICE Project Conceptual Approach:

GIZ is currently supporting the Ministry of Environment (MoEnv) in Jordan in its pursuit for the implementation of the National Climate Change Policy "The Policy" through strengthening the capacity of the newly established climate change directorate as well as enhancing intersectoral coordination between national stakeholders involved in the implementation of the Policy. The project supported by the German Federal Ministry for Economic Cooperation and Development (BMZ) through the MENA Governance Fond is implemented by the Ministry of Environment until December 2015.

The project's outcome is *that the capacities of the Jordanian Environment Ministry for the cross-sectoral coordination for the implementation of national climate policy are strengthened*. This will be achieved through five major outputs; namely:

1- Relevant climate policy actors at the national and sub-national levels including private sector have a common understanding of the international instruments and approaches in combating climate change with focus on mitigation measures.

2- The inter-sectoral exchange and coordination for the implementation of national climate policy, with special attention to international experiences (benchmarking) are improved.

3- The capacities of the Ministry of Environment and relevant sector ministries for participatory development of NAMAs are strengthened

4- The capacities of the Ministry of Environment and relevant sector ministries for the implementation of MRV of greenhouse gas emissions are strengthened.

5- The communication between state actors, civil society and the private sector on climate change and protection is improved.

The project is being implemented at a very timely point where the Ministry of Environment has just established a new special directorate for climate change. The new directorate will be eventually responsible for the coordination of all national activities related to climate change in Jordan. For achieving this promising objective it will need a comprehensive plan for its institutional, technical and human capacity development linked with a clear climate change governance system at the national level.

Capacity Development in ICE project:

Capacity development will be a major component of the ICE project as it seeks to enhance the institutional and technical capacity of stakeholders to implement the national climate change policy. The baseline assessment of national capacities conducted by the ICE project in December 2014 resulted in the following priority areas for capacity development:

- Organization impact/role in the National Climate Change Committee
- Having an enabling environment; integration of climate change policy and measures into organization legislations/ strategies/ development planning
- Availability of information on climate change issues in general
- Development of technical proposals for NAMAs
- Exploring the mitigation landscape: NAMAs, PMR, LEDs, MRV, INDCs, CDM…etc
- Awareness of climate change financing and funding mechanisms
- Determination of climate change exposure, vulnerability, impacts and adaptation planning at national, regional and sectoral levels.
- Climate proofing: integration of climate adaptation concepts in the design and operation of new and existing developmental projects.
- Conduct awareness campaigns/activities related to CCP

The capacity development activities that are already identified by the ICE project respond to the majority needs requirements suggested above. The remaining issues will be taken into consideration during the detailed design of project activities and in the implementation plan.

Support to the Climate Change Directorate at MoEnv:

The ICE project is characterized by a special timing in which the Climate Change directorate in the MoEnv has just been established and it requires all kinds of support that can be provided by GIZ and other partners. The design of ICE project activities should also take into consideration the requirements of the Climate Change Directorate in the MoEnv.

The timing of the ICE project also coincides with the developments at the front of global climate negotiations under UNFCCC. There are many emerging issues that are currently discussed in the negotiations and may provide a new and emerging architecture of climate policies and measures that developing countries like Jordan will need to respond to. The ICE project will need to keep a close eye on the outcomes of global negotiations and emerging issues of importance that should be included in the design of capacity development initiatives to serve the demands of national stakeholders, especially MoEnv.

II. Introduction to Readers:

Jordan is starting gradually to realize both the threats and opportunities resulting from global impacts and outcomes of climate change. After years of marginalization and lack of impact realization the environmental and developmental stakeholders in Jordan are now more engaged with climate change issues.

One of the major milestones that Jordan has achieved is its ambitious submission of Intended Nationally Determined Contributions (INDCs) in September 2015. The INDCs included a pledge to reduce Jordan's GHG emissions by 14% in 2030 compared to Business As Usual Scenario. The INDCs include a clear roadmap for the future of climate change in Jordan. Reaching the INDCs was an outcome that is based on a solid process of development of climate policies, targets and activities in Jordan.

In the past five years Jordan has moved important and vital steps in enhancing its policy, institutional and technical context for climate change governance. In 2009 the production of Jordan's Second National Communication (SNC) Report on Climate Change provided a technical leap forward in the stocktaking, analysis and recommendations for climate change mitigation and adaptation sectors based on a detailed GHG inventory. The SNC paved the way for engaging with various international partners in developing mitigation and adaptation projects based on the recommendations of the SNC and the outcomes of various UNFCCC COPs decisions within 2010-2012.

In 2013 the Ministry of Environment published the country's first national policy on climate change. Through a wide participatory process, this policy provided Jordanian stakeholders and international partners not only with policy recommendations but sectoral guidelines on the development of sectoral targets and policies in both mitigation and adaptation contexts, linked to the cross cutting issues of climate finance, technology transfer and capacity development.

The climate change policy included ambitious recommendations at the institutional and sectoral coordination levels including the restructuring of the national climate change committee and providing it with more power and impact on decision making. The policy recommended also the establishment of a new directorate for climate change at the Ministry of Environment.

During 2014 the Ministry of Environment developed its strategic vision and objectives which included climate change as an integral strategic theme. It added to this by establishing the suggested climate change directorate in 2015.

At the technical level the production of Jordan's Third National Communication (TNC) report in 2014 provided a huge step forward in documenting the potential impacts of climate change based on downscaling of climate projections done for the first time in Jordan and the region. The TNC report included an update of the GHG inventory (base year 2006) and a new scenario for mitigation based on recent developments in the mitigation sectors, mainly energy. The TNC is now considered as a reference document for all mitigation and adaptation planning in the country.

Apart from the specific domain of climate change governance, sectoral priorities in Jordan have been contributing to enhancing climate mitigation actions and developing climate resilience and adaptation. Jordan has realized the huge potential of sustainable energy sources and low emission technologies in the energy sector. Recent investments in renewable energy are set to add 400 MW of electricity to the national grid by 2020 reaching to the national target of 10% renewable. Sectoral policies in water and agriculture are also responding to climate impacts in an increasing manner.

In the last quarter of 2014 the GIZ GF-ICE project started operation. The project with its relatively short time of implementation (15 months) attempts to enhance the capacities of the Ministry of Environment and its national partners in the implementation of priority issues and recommendations of the climate change policy through targeted capacity building.

Based on GIZ's international pool of expertise, guidelines, technical excellence and on ground case studies the GF ICE project is providing support for the MoEnv to raise national capacities. As a first step its has produced 3 baseline assessment studies that provide strategic recommendations for the MoEnv and its partners to move forward with the implementation of the policy in close linkages to the progress in the UNFCCC international negotiation process and the national priorities on sustainable development.

This current publication includes a summary of the findings of those assessment studies. Some of the information has been updated to keep up with the new developments at the national and global levels but the recommendations and conclusion have been maintained and also used in current project activities.

The first assessment about the enhanced Intersectoral Coordination for climate change governance in Jordan includes suggested options for restructuring the national committee on climate change. It also provides ideas on integrating and mainstreaming climate change into national sectoral and developmental planning processes with special emphasis on the Jordan Vision 2025 document.

The second assessment study provides a review of the progress achieved in the implementation of the national climate change policy since 2013 and identifies main priorities for future implementation.

The third assessment study provides an analysis of the training needs assessment of national stakeholders for enhancing capacities in climate change governance. It also identifies main priority issues for capacity development which has been picked up by the GF ICE projects. Study tours in Germany and capacity development events in Jordan have been organized to respond to the needs identified in the study.

The three assessment studies are to be considered as an integrated package that shows the short and long term priorities for climate change governance in Jordan based on gap analysis and institutional capacities. GIZ will be striving to respond to those priorities within GF ICE projects and other initiatives and it is hoped that other international partners will utilize this document as a resource for technical support for Jordan in climate change governance.

With these policy, technical and institutional developments at the national level supported by Jordan submitting its INDCs report to UNFCCC it is now the best time to invest in supporting climate governance in Jordan.

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GIZ National Advisor on Climate Change

Chapter One:

Developing a strategic roadmap for intersectoral coordination for the implementation of the national climate change policy

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1.1 Climate Change Governance setting in Jordan:

The Jordanian Ministry of Environment (MoEnv) is responsible for coordinating climate change governance at the national level and managing its implementation. The Ministry has recognised the urgency of the challenges associated with climate change. In addition, it is aiming to play a more active role within international climate negotiations.

For that reason the Ministry of Environment had launched in 2013 a National Policy on Climate Change. The long-term goal of the "Policy" and sector strategic guidance framework of Jordan is to build a climate risk-resilient country with a low-carbon but growing economy.

To pave the road for Policy implementation, the MoEnv in 2015 officially established the Climate Change Directorate (CCD). The overall objective of the CCD is to follow up and strengthen implementation of provisions of UNFCCC, KP and any related legal instruments that the conference of the parties (COP) may adopt and Jordan ratifies, as well as to supervise the implementation of the Policy in full collaboration and coordination with the Jordan National Committee on Climate Change (JNCCC) and monitor the implementation process.

In order to maximize the benefits of implementing the National Climate Change Policy the current barriers should be removed and climate change governance should be enhanced in Jordan. This chapter will explore the obstacles and opportunities of transition from current approach into "intersectoral" management approach, aiming to provide the MoEnv and the Climate Change Directorate (CCD), along with national stakeholders with a proposed mechanism for improved and most importantly sustainable intersectoral coordination that will maximize the benefits of implementing the climate change policy and remove current barriers.

1.2 Climate Change Governance: Conceptual Framework

A profound understanding of climate change as a national environmental and societal challenge is the central requirement for climate change governance in Jordan. Effective actions in the field of mitigation and adaptation to climate change can hardly be successful without an understanding the problem nature. This indicates the prerequisites, namely collaborative and coherent actions by participating stakeholders and policy-makers who shape mitigation and adaptation actions.

Overall, the governance of climate change is a dynamic process. Given the complex and multi-level nature of climate change management, the governance process should be modified, adjusted and adapted to changing conditions in both inside and outside of Jordan. This process will also be affected by international and regional contingencies. Jordan has been faced by natural, political, social, and economical challenges. Therefore, a novel and innovative governance approaches are crucialto address issues associated with climate change environmental sustainability.

Mitigation and adaptation to climate change impact are a cross-boundary, multi-level, multi-sectoral and multi-actor challenge with the specific characteristics of longevity and uncertainty. Therefore, many different sectors, strategies, actors and interests are affected. Climate change governance is not an entirely new concept, but includes many parallels to existing governance approaches referring to other policy fields. Nevertheless, separate consideration still appears reasonable; since climate change-related governance approaches are characterized by specific features and requiring a fresh look at regulatory arrangements:

Cross-boundary, Multi-level and Multi-Sector Requirements

Climate change makes cross-boundary demands on its governance. In practical terms, instruments, processes, mechanisms and organizations can be used as part of environmental governance in order to improve the environmental conditions, in conjunction with public, private and civil society stakeholders.

For example the Aqaba Special Economic Zone Authority (ASEZA) coastal governance focuses on the coast as a geographical area. In connection with the Integrated Coastal Zone Management (ICZM) concept, institutional processes and structures can serve as a basis for planning and decision-making processes. This applies to both mitigation and adaptation. ASEZA governance based on cross-sectoral and cross levels. Therefore, the integrated and process-oriented approach is significant for climate change governance.

Multi-level governance thus includes not only the structure of multi-level organization, but also the patterns of interaction and coordination systems within and between different levels especially in environmental and climate policy. Climate change governance therefore occurs within a complex web of stakeholders, governmental as well as private, operating at different levels and with their mutual influence.

Furthermore, multi-sectoral governance approaches are used in the management of cross-sectoral issues. Climate change is meaningful for different policy sectors and sectoral planning. The integration of mitigation and adaptation issues in different sectors and the accordant polices is a central mechanism of climate change governance.

Multi-Agency Setting

Another relevant feature of climate change is the variety of actors and spheres of activities. The participation of various groups is particularly being pointed out as participatory governance approach. The underlying assumption is that participatory governance arrangements improve the quality of policies and their implementation. However, they cannot be a substitute for political decision-making. Furthermore, a necessary outcome is for cooperative forms of regulation to create a sense of higher legitimacy and effectiveness in the decision-making process and results achieved through the involvement of private stakeholder and civil society in addition to the public sector. It must be identified for the individual case how participation processes can make a contribution and how they can be designed to improve the development and implementation of mitigation and adaptation measures.

1.3 Jordan's Climate Change National Frameworks

- Legislations and Policies

As a climate change national focal point, the Jordanian Ministry of Environment operates under the mandate of Environment Protection Law (law no. 52 of 2006) which is Jordan's most important tool in terms of environmental protection. Unfortunately, till late 2014 the Law contained no clear reference to climate change. However, it is currently under revision, to take into consideration new sector circumstances, with a direct reference to climate change related issues.

Energy sector is the main contributor to greenhouse gas emissions in Jordan. Another legal framework significantly contribute to environmental protection in Jordan is the Renewable Energy & Energy Efficiency Law (No. 13 of 2012) under the Ministry of Energy and Mineral Resources. Despite the law being considered the most important tool to reduce GHGs, only Article 3 (b) refers indirectly to climate change: "*Contributing to environmental protection and achieving sustainable development*".

Since the launch of the Second National Communication report (SNC) in 2009 Jordan has vastly improved its policy framework in relation to Climate Change. In 2009 and previously, Climate Change was barely mentioned in any of Jordan's main developmental plans. Currently the country has elaborated a sophisticated and useful policy framework that should be utilized for improving national capacities for addressing the challenge of climate change in all sectors.

In 2013 a milestone was achieved in Jordan with the launching and adoption of the first national policy on climate change in the country and in the region. The policy was a result of an extensive multi-stakeholder dialogue process that involved all active organizations from various sectors in Jordan. The policy was formulated to accommodate all national climate change priorities for action and to provide a highly flexible policy reference point upon which further strategies and sectoral policies can be based.

The long-term goal of the Climate Change Policy is to achieve a pro-active, climate risk-resilient Jordan, to remain with a low carbon but growing economy, with healthy, sustainable, and resilient communities, sustainable water and agricultural resources, and thriving and productive ecosystems in the path towards sustainable development

The Ministry of Environment developed its 2014-2016 its own strategic plan and identified its strategic objectives, programs and projects to be able to achieve its vision and mission. Climate change under this strategy was identified as a strategic initiative (program). In general, Jordan's policy framework has the following hierarchy as illustrated in **Figure 1.1** below. Whereas, the Jordan's climate change policy framework hierarchy is illustrated in **Figure 1.2** below.

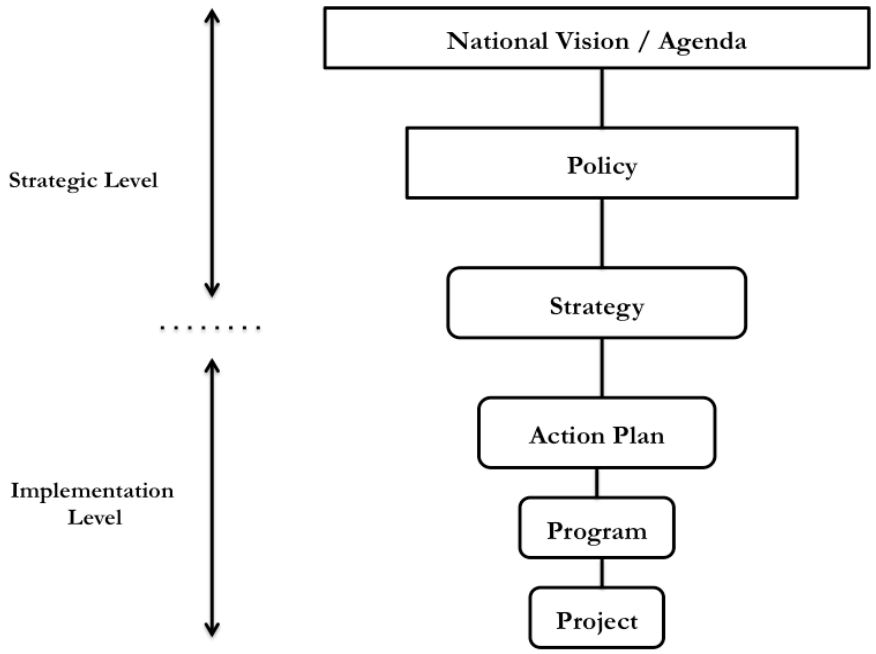


Figure 1.1: Jordan's Policy Framework Hierarchy (by Author)

Figure 1.2: Climate Change Policy Framework Hierarchy (by Author)

- Institutional Framework

The Ministry of Environment is the national focal point for the United Nations Framework convention on Climate Change (UNFCCC). Based on recommendations of the National Climate Change Policy the Ministry of Environment has created its first directorate for climate change. The directorate will act as the institutional hub for coordinating and developing all climate change activities in Jordan in relation to the UNFCCC and the global, regional and national climate change governance system and initiatives.

According to the recently approved institutional setup of the MoEnv, the overall objective of the Climate Change Directorate (CCD) is to follow up and strengthen implementation of provisions of UNFCCC and its Kyoto Protocol (KP) and any related legal instruments that the conference of the parties (COP) may adopt and Jordan ratifies.

This CCD will incorporate both the high-level policy making/decision taking level as well as the executive level, and will facilitate the involvement of all relevant stakeholders in developing response actions/strategies and their implementation. It will also strengthen the internal capacity of the Ministry of Environment for climate change to address its existing and new tasks under the Climate Change Policy. Individual staff members within the CCD have been made responsible for specific tasks, including the Focal Points for UNFCCC, IPCC, and pthers.

Another level of governance is the national platform for the integration of multi-stakeholder dialogue and planning on climate change is the Jordan National Committee on Climate Change (JNCCC), which was established in 2001 based on a decision by the Prime Minister and it includes many stakeholders directly associated with climate change sectors in Jordan. The current members of the JNCCC constitute 10 line ministries, 3 public institutions, 4 research and academic organizations and 4 NGOs.

The Committee is headed by the Minister of Environment or who the Minster delegates at the Ministry of Environment, which is the national administrative body for the secretariat of the UNFCCC. The Ministry of Environment is responsible locally for calling for the meetings of the committee and preparing and distributing all pertinent documents before and after meetings. The committee establishes its specialized thematic legal and technical groups on permanent and/or ad-hoc basis, according to the subject of the discussion theme. Thematic groups are composed of principal national expertise on the needed topics of advice. The JNCCC legal mandate/ToR, and current structure of the NCCC needs to be strengthened and become more effective.

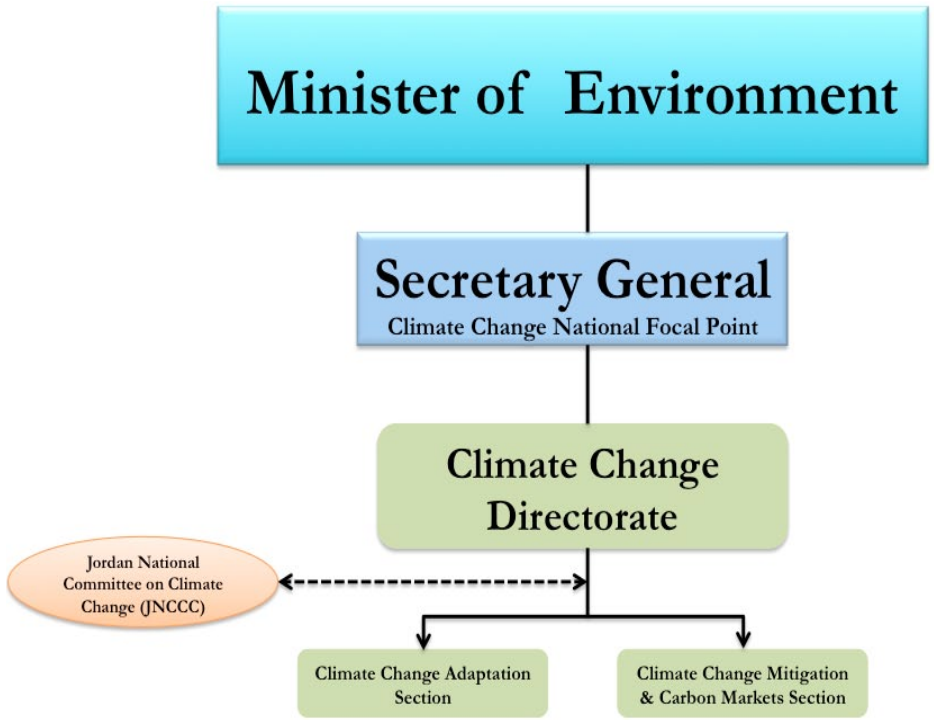


Figure 1.3: The existing national climate change institutional framework in Jordan

- Planning, Policy Formulation and Key Entry Points

The main current policy-guiding framework in Jordan after the National Agenda (2005-2015) is the "Vision 2025". The document was officially launched in May 2015 under the capacity of Ministry of Planning and International Cooperation (MOPIC) in a dialogue-based participatory method with all stakeholders, including the private and public sectors as well as civil society organizations and the parliament. Several programmes, projects, legislations and activities linked to the goals for each sector are to follow, until the national goals of the vision are implemented on ground.

The document will cover the upcoming 10 years. MOPIC will work on translating the vision and the national strategy through three consecutive Executive Development Plans to be incorporated into the executive programs and projects of the years (2016-2018), (2019-2021) and (2022-2025).

The three years Executive Development Program (EDP), considered the main planning mechanisms in Jordan. The EDP incorporates national development vision, and priorities through translating the national policies and strategies into applicable work procedures. Several programs, projects, legislations and activities linked to the goal of each sector are to follow, until the national goals of the vision are implemented on ground. In this planning document (2013-2016) EDP climate change has been integrated to the first time as one of four pillars of the Environment sector.

A precise identification of priorities in the EDP, usually take into consideration the level of importance, readiness and expected effect of the project, as well as the administrative and technical capabilities of the concerned body. There are specific standards for accepting suggested projects, underscoring the need for vertical and horizontal integration of the programs.

When the EDP drafted and the list of programs and projects are ready, MOPIC will work on harmonizing them with the general budget and the budgets of independent governmental units, in cooperation with the Finance Ministry and the General Budget Department.

The 3-year National Development Plan is a dynamic and flexible document that allows inclusion of the urgently needed projects by justification of the needs for such projects and approval by the Cabinet of Ministers. A Royal Decree can also make Inclusions/amendments to the plan.

The planning process flowchart and the possible entry points to enhance the intersectoral approach and integrate climate change policy as shown in **Figure 2.4**. The process takes approximately one year and follows closely the budgetary cycle.

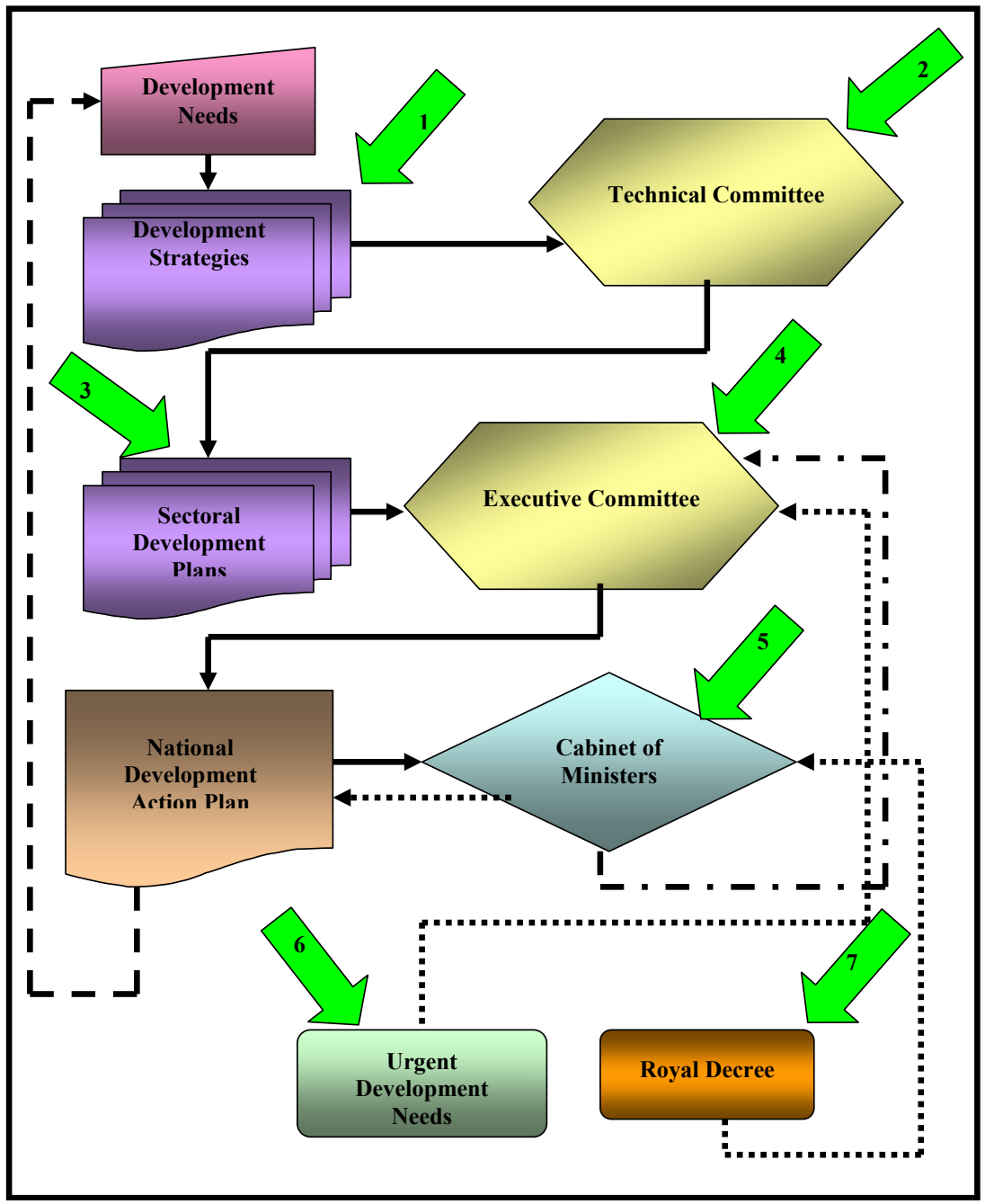


Figure 1.4: Jordan's Planning Process Flow Chart (Adopted from IFS, 2009)

Key Entry Points

It is important to identify key entry points for trying to strengthen line ministries engagement with climate change-related risks and opportunities.

Vision 2025 Document

Under the "Vision 2025" document climate change was stated clearly under the Environment Sector as priority initiative to develop a legislative framework for the organization of climate change to maximize the benefits, minimize the negative impacts and build national capacity. This is considered as a promising entry point to initiate a national dialogue to develop a climate change legislative framework. However, no specific key performance indicators under the environment sector targeted the climate change issue.

Additional entry points within the "Vision 2025" to strengthen the line ministries engagement with climate change-related risks and opportunities could be seen under the Resource Security and Management Scenarios (Water, energy, food and agriculture). However, these initiatives were not straightforwardly mentioned to respond to climate change impact, nevertheless significant entry points to mitigation and adaptation initiatives as shown in **Table 1.1.** For example, intersectoral opportunities (Water-Energy Sectors) were well-defined under water sector to improve energy use efficiency in water utilities based on applying renewable energy sources (hydraulic, solar, and wind) as well as biogas and energy production from sludge.

Table 1.1: Vision 2025" Intersectoral Opportunities to Respond to Climate Change Impact

The Environment Sector

Targeted Scenario	Priority Initiatives	Intersectoral opportunities Adaptation / Mitigation
Maintaining Ecosystems	Rehabilitate ecosystems in Jordanian desert	Water-biodiversity-agriculture-energy-food Adaptation & Mitigation
Mitigate the negative effect of environmental changes on human	Safe disposal of solid waste in prepared landfills	Mitigation
	Develop a system for assortment, reuse and recycling	Mitigation
	Increase the area of monitoring of ambient air and complete the monitoring network in all Jordanian cities	Mitigation
	Disposal substance that deplete the ozone layer in accordance with the Montreal Protocol	Mitigation
	Develop a legislative framework for the organization of climate change to maximize the benefits, minimize the negative impacts and build national capacity	Intersectoral approach Adaptation & Mitigation
Raising public awareness in the field of environmental protection	Raise public awareness in the field of environmental protection and disseminate of environmental culture	Intersectoral awareness programs Adaptation & Mitigation

Resource Security and Management [25]

Part I: Food and Agriculture

Targeted Scenario	Priority Initiatives	Intersectoral opportunities Adaptation / Mitigation
The transition towards a sustainable, more efficient and productive local agriculture production	Motivate producers who invest in agricultural technology, organic agriculture, and water efficiency in order to increase production	Adaptation: Water-Agriculture (water efficiency, agricultural technology) Mitigation: organic agriculture
	Provide appropriate incentives to promote efficient use of water in irrigation and achieve high economic returns of agricultural irrigated products irrigated	Adaptation: Water-Agriculture (Efficient use of water in irrigation)
	Organic farming for export and quality certification purposes and target 5% of existing Jordanian farmers	Mitigation: Organic farming
Maintain the sustainability of agricultural resources and biodiversity	Preserve forest areas and biodiversity and protect the vegetation cover.	Agriculture-Biodiversity Adaptation & Mitigation
	Afforest 25% of barren forest areas in the rain belt areas on which the rate of precipitation exceeds 300mm.	Water-Agriculture Adaptation & Mitigation

Expand support programs for existing farmers to maximize the productivity and efficiency of water for current farms	Support applied agricultural research and inform agricultural workers of research results.	Agriculture- Research and Development Adaptation
	Create an innovation fund for agriculture, food, energy and water to stimulate development, and adopt and use water-efficient technologies in Jordan	Water-energy- Food Adaptation & Mitigation

Targeted Scenario	Priority Initiatives	Intersectoral opportunities Adaptation / Mitigation
Reducing expenses and costs	Improve energy use efficiency in water utilities, and implement a number of projects based on renewable energy sources (hydraulic, solar, wind) as well as biogas and energy production from sludge	Water- Energy Adaptation & Mitigation
	Introduce renewable energy as a source to supply water system	Water-Energy Adaptation & Mitigation
Increase the capacity and quality of water supply	Increase the storage capacity of dams	Adaptation
	Expand the re-use of treated wastewater in agricultural production	Adaptation
	Improve drainage networks in urban areas to collect rainwater and runoff and encourage the use of graywater	Adaptation
Enhancing the efficiency of irrigation systems	Develop, rehabilitate and expand irrigation projects	Water-Agriculture Adaptation
Expanding sanitation and re-use services	Focus on wastewater treatment and reuse for agriculture	Water-Agriculture Adaptation

Part III: Energy

Targeted Scenario	Priority Initiatives	Intersectoral opportunities Adaptation / Mitigation
Encouraging investment in renewable energy	Raise awareness about the incentives provided by the renewable energy and energy efficiency law	Mitigation
Encouraging the use of solar energy for water heating	Encourage the use of solar collectors for water heating purposes, through the provision of short-term support for the .purchase of heaters	Mitigation
Requiring the implementation of green building codes	Encourage “green building” by setting clear standards for construction, materials and land, based on the best practices	Water-Energy Adaptation and Mitigation
	Require that all buildings in the public sector comply with Leadership in Energy & Environmental (Design (LEAD 1	Water-Energy Adaptation and Mitigation
Encouraging the use of devices that are compatible with the “green” standards	Launch the standards program and label devices in residential and commercial sectors	Water-Energy Adaptation & Mitigation
	Launch a program to swap old devices with new-energy saving ones	Mitigation
	Activate financial incentives to encourage the purchase of energy-saving vehicles	Mitigation
Raising awareness about the long-term financial benefits of energy efficiency	Improve the collection of data on energy use patterns, and identify the most useful data on the efficiency of energy use for policy makers	Mitigation
	Provide appropriate financial incentives for energy efficiency projects	Mitigation
	Provide funding to allow schools, hospitals and other facilities assess the potential of saving energy, and make energy-related capital improve-.ments in their facilities	Mitigation

National Planning Processes

As a starting point for intersectoral coordination for the implementation of the national climate change policy, through the preparation of the Executive Development Program (EDP) (2016-2018) which will be formulated in August 2015. The EDP will incorporate the first phase of the "Vision 2025" through translating the national policies and strategies into applicable work procedures. Therefore, this is a great opportunity for MoEnv to adopt climate change as sectoral objective under the EDP and translate it into specific intersectoral initiatives and activities in close coordination with MOPIC and the line ministries.

National Sectoral Action Plans

Establishing a clear links between the national climate change policy and other relevant line ministries' policies (e.g., water, energy, agriculture…etc.), would support the intersectoral approach to implement the Policy. According to the interviews with the JNCCC members, it was strongly recommended to translate the Policy into sectoral climate change action plans taking into consideration sector's capabilities, capacities and readiness. Bridging this gap appears to be sensible and practical way forward. This process can be facilitated through establishing a dedicated units/core team within the line ministries for climate change with a support from the development agencies and donors.

Improving understanding of climate change issues

It is essential for national institutions (government and non-government) to know more about what climate change means for them in concrete and tangible terms. Particularly they need to be provided with information on the nature of the risk they face. According to the JNCCC members, information and data on climate change needs to be sector-related and presented in ways that make sense to decision-makers and that spell out the need for certain type of actions. Additionally, such information also needs to be as site-specific as possible- climate change and its consequences in Amman require very different adaptive strategies to those required in Aqaba coastal zone.

Decision-Making Process

Documenting and mapping climate change decision-making process was not an easy task, due to the cross-boundary, multi-sector, multi-level, multi-agency settings and uncertainty nature of the climate change issues. However, according to the data collected through the interviews, the below diagram **Figure 2.5** was developed to outline the high-level activities in the climate change decision-making process at national level in Jordan.

As illustrated in **Figure 2.5** the Ministry of Environment is the main key player in this process in its capacity as the national focal point to the UNFCCC. Whereas, the Climate Change Directorate (CCD) at Ministry of Environment function as the secretariat responsible about communication, consultation, data collection, reporting, and establishes the decision context in close coordination with the JNCCC members. As a next step, the draft decisions should be presented for discussion and approval by the Minister or and/or Secretary General or Prime Minister and Cabinet according to the required actions and priorities, or if any activity required financial allocation.

Once the decisions get approved, then the execution phase begins. During the implementation phase it still subject to monitoring and evaluation process. If the implementation went well, then success stories are documented. However, if any issues resulted from the decision's implementation then modification required, this might required more consultations and data collection.

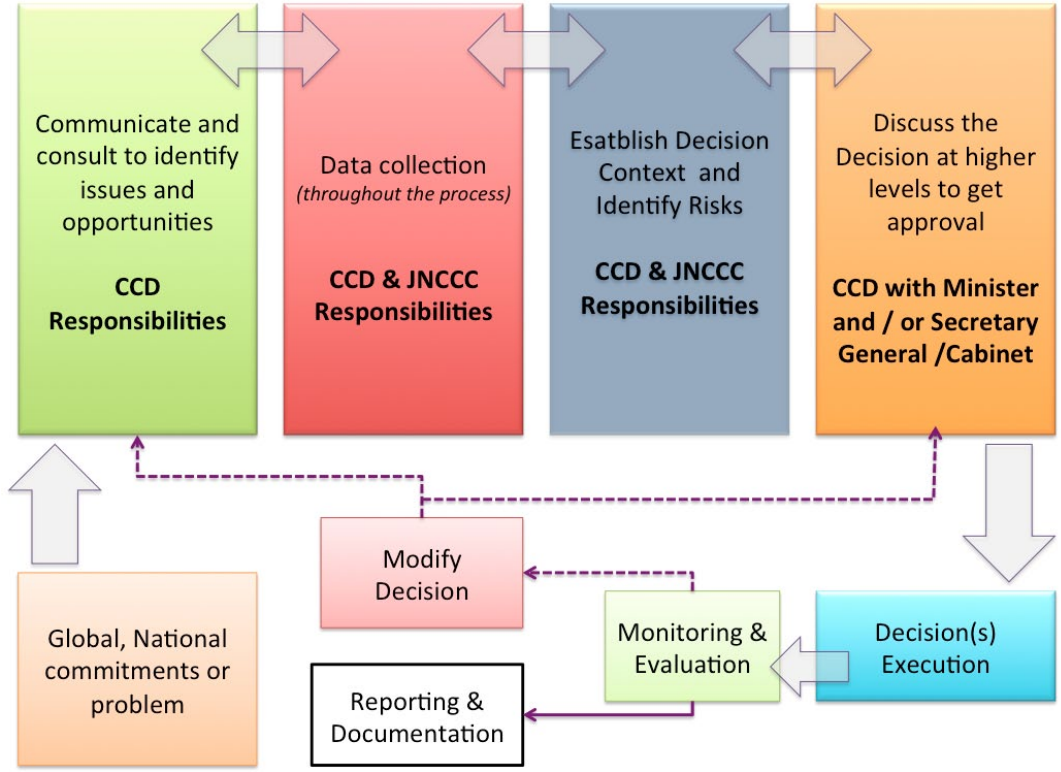


Figure 1.5: Climate Change Decision-Making Process

The Capacities

The technical and coordination capacities of the institutions, organizations and individuals considered a key issue for developing and implementing effective climate change sectors' action plans. Therefore, setting up appropriate institutional arrangements is crucial.

Developing climate change capacity of national institutions requires national-level response. For example it has been recommended by the interviewees to design a national training and capacity development program targeting different policy levels and stakeholders. For example this program to target policy-makers, government officials, curricula of the schools, universities, and public and NGOs.

A sector-specific assessment exercise is a good starting for understanding how well national and local governments are placed to address climate change. It is a useful tool for understanding existing capacity and gaps. Such exercise should cover the full range of institutions involved in addressing climate change, and include assessing policy-setting capacity and delivery of specific services. The findings of such assessment could be used to develop capacity development strategies.

1.4 Institutional Framework Scenarios for Managing the Climate Change Policy

The Jordanian Government through the Climate Change National Focal Point (Ministry of Environment) established the Jordan National Committee on Climate Change (JNCCC) in 2001 for the purpose of enabling the wider participation of government agencies in the development and implementation of climate change measures. Through years the representation of the committee and the mandate were reviewed to include more stakeholders' representatives. However, its mandate was not clear enough to effectively engage members, sustain interactive dialogue, and to assure a two-way feedback. The current JNCCC involve 26 members representing ten line ministries, three public institutions, 4 research and academic organizations, and four NGOs as illustrated in **Figure 6**. The Climate Change Directorate functions as secretariat to the JNCCC.

To maximize intersectoral coordination through the JNCCC to better implement the Policy. A SWOT analysis performed to explore the external and internal challenges facing the JNCCC. The analysis described the external and internal environment strengths, weaknesses, opportunities and challenges shown in **Appendix1**. The analysis results were validated through interviewing the JNCCC members individually and collectively (Focus Group Discussion).

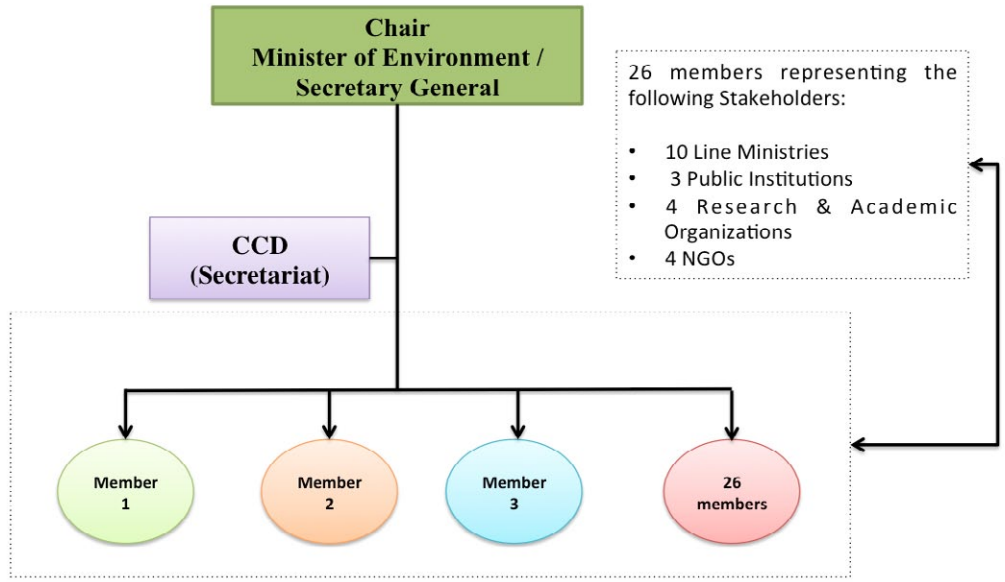


Figure 1.6: Current Institutional Structure of the JNCCC

The current JNCCC structure and mandate experiencing the following weaknesses:

- The JNCCC has no clear TOR, nomination criteria, members mandate and functions, and limited role
- The JNCCC has no Action Plan (yearly) and follow-up plan
- Weak JNCCC level of representation regarding the significant impact of the climate change and required actions.
- Limited knowledge sharing (JNCCC member within their institutions), feedback and information system
- No sub-committees for certain specific subject
- Absence of clear inter-sectoral coordination mechanisms

Additionally, the JNCCC is threatened from:

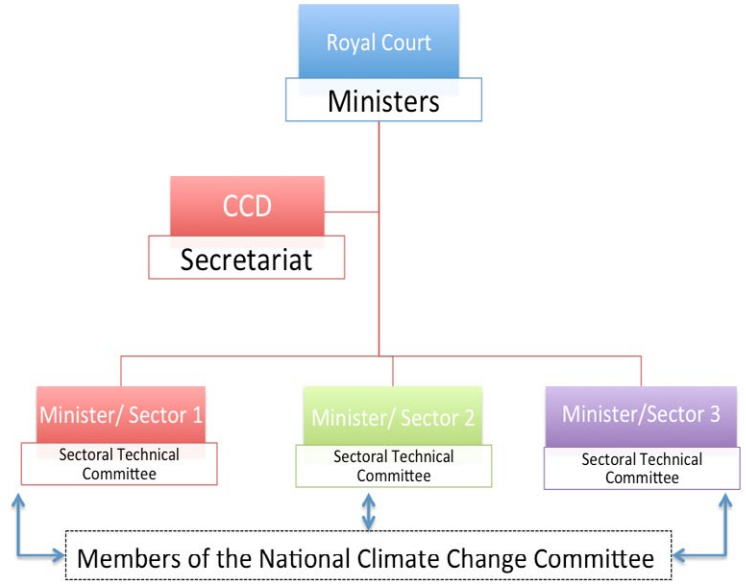
- Members have other responsibilities and are subject to change
- CC Program not sectoral objective (ministries /MoEnv)
- No CC Action Plans (sectoral)
- Different priorities and mandates for relevant sectors
- Limited budget allocations for CC initiatives
- Lack of leadership for multi-sectoral approaches
- Limited participation in international events and activities
- The members efforts not rewarded properly

After consultations with JNCCC members, CCD staff and MoEnv Directors, three scenarios were developed to reshape the current JNCCC structure with (Added value and limitations of each one) as follow:

1- First Scenario

An Inter-ministerial Committee on Climate Change (IMCCC) to be established to ensure a high level dialouge and coordination on Jordan's policy to climate change. Chaired by the a representative from the Royal Court and co-chaired by Environment Minister. The IMCCC includes but not limited to Ministers of Water and Irrigation, Energy, Planning, Health, Agriculture, Transport. The IMCCC will oversees the work of the sectoral technical committees. Each sectoral committee will be chaired by a Minister of relevant line ministry and will include the technical experts. The CCD will be dedicated as a secretariate to ensure the effective coordination and function for the IMCCC.

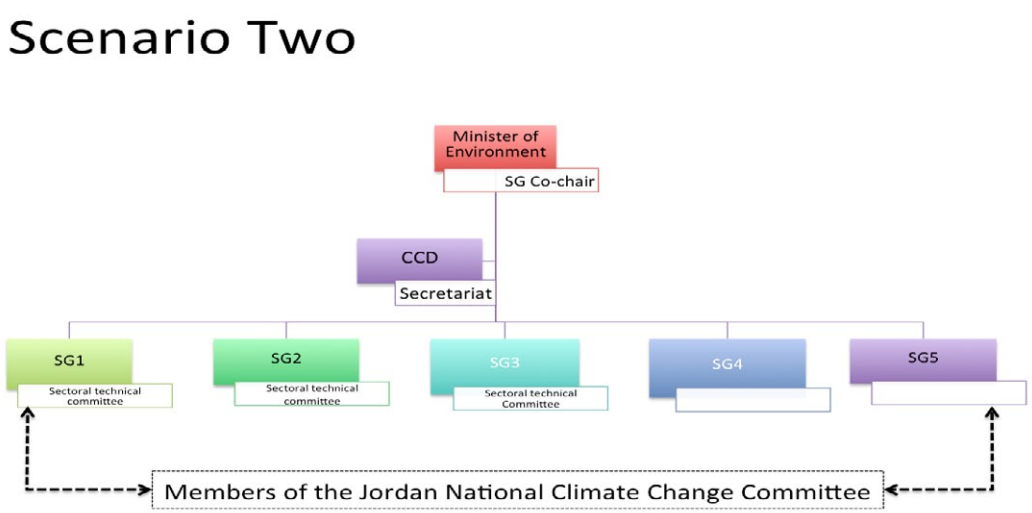
Scenario One



Added values	Limitations
• Rising climate change as high Level priority / and on national agenda • Will maintain high level discussion concerning the climate change issues • Will guarantee Ministries commitment to implement the Climate change policy	• Limited Intersectoral coordination at sectoral technical group • Ministers availability and time commitments • Current CCD resources (Human & financial resources) to perform the Secretariat function

2- Second Scenario

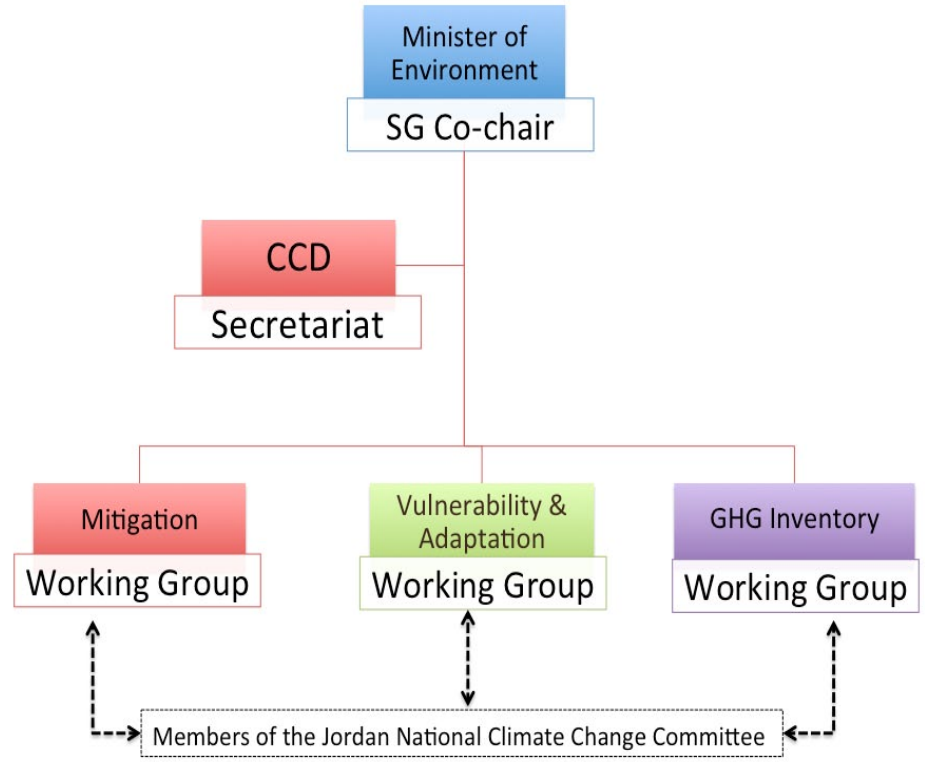
An Inter-ministerial Committee on Climate Change (IMCCC) to be established to ensure a high level dialouge and coordination on Jordan's policy to climate change. Chaired by the Secretary General of the MoEnv the IMCCC includes but not limited to SGs of Water and Irrigation, Energy, Planning, Health, Agriculture, Transport. The IMCCC will oversees the work of the sectoral technical committees. Each sectoral committee will be chaired by SG of relevant line ministry and will include the technical experts. The CCD will be dedicated as a secretariate to ensure the effective coordination and function for the IMCCC.



Added values	Limitations
• Rising climate change as high Level priority / and on national agenda • Will maintain high level discussion concerning the climate change issues • Secretary Generals commitment • Faster implementation of climate change policy	• Limited Intersectoral coordination at sectoral technical group • Current CCD resources (Human & financial resources) to perform the Secretariat function

3- Third Scenario

An Inter-ministerial Committee on Climate Change (IMCCC) to be established to ensure a high level dialouge and coordination on Jordan's policy to climate change. Chaired by the Minister of Environemt or whome he delegates (i.e Secretary General of the MoEnv). The IMCCC includes high ranking officials of Ministry of Water and Irrigation, Ministry of Energy, Ministry of Planning, Ministry of Health, Ministry of Agriculture, Ministry of Transport and other institutions. The IMCCC will oversees the work of three technical working groups: (1) Mitigation Working Group, (2) Vulnerability and Adaptation (V & A) Working Group, and (3) GHG Inventory Working Group. Each working group will be chaired by SG of relevant line ministry. The CCD will be dedicated as a secretariate to ensure the effective coordination and function for the IMCCC.



Added values	Limitations
• Rising climate change as high Level priority / and on national agenda • Will maintain high level discussion concerning the climate change issues • Secretary Generals commitment • Faster implementation of climate change policy • Support the Intersectoral coordination • Provides a structure for a future MRV system based on GHG inventory	• Current CCD resources (Human & financial resources) to perform the Secretariat function

The JNCCC members mostly recommended the third scenario. However, they suggested developing a clear TOR and mandate for the IMCCC to support the intersectoral approach in implementing the national climate change policy.

1.5 Intersectoral Coordination

It is rarely the case that climate change impacts in the real world respect the borders of legally defined policy sectors or the competencies of single governmental departments. Neither are sectors completely segmented and indifferent of decisions taken in other policy realms. Especially after the emergence of new paradigms such as sustainability or sustainable development, some policy realms are urged to address new demands regarding the complexity of objectives, instruments, implementation, and potential impacts on environment, economy and society.

In order to adequately address and respond to the rising impact of climate change in Jordan, it is recommended to adopt an "intersectoral approach" while implementing the Climate Change Policy in Jordan. According to other countries' best practices, the significance of such approach is:

1- Enhancing policy coherence;

2- Building synergies and improving governance across sectors;

3- Address externalities;

4- Respond effectively to climate change impact;

5- Build the adaptive capacity of communities and institutions, with consideration for gender, and addressing the needs of vulnerable groups.

Understanding policy coordination as a process means taking into consideration aspects such as the number of involved actors, the duration of coordination and the stage of the policy cycle at which it takes place. Policy coordination as a degree for integration means reducing redundancy in policy program and initiatives, incoherence or inconsistency of programs as well as identifying the existence of policy gaps. These deficiencies should be eliminated by means of successful coordination.

From a variety of conceptual approaches to policy coordination and integration, the below ten steps was investigated from the "Intersectoral Action for Health" (WHO, 2010) and recommended to be adopted by the CCD and the JNCCC to enhance the intersectoral coordination for climate change in Jordan.

Table 1.2: Road Map to Support the Intersectoral Coordination

Steps	Actions
STEP1: Self-Assessment	• Assess MoEnv and CCD climate change capabilities, capacities, readiness, existing internal and external relationships, and participation. • Strengthen the MoEnv and CCD by improving staff capacity to interact with other sectors, to address and communicate potential co-benefits, and to contribute the debate with other sectors.
STEP 2: Assessment & Engagement of Other Sectors	• Achieve a better understanding of other sectors' policies and their direct and indirect links to climate change policy. • Establish links and means of communication with relevant line ministries through the JNCCC. • Conduct a stakeholder and sector analysis (Sectors' policy papers). • Identify existing intersectoral bodies. • Participate in activities led by other sectors. • Establish maintain a common information and data collection system. • Build the capacities of the JNCCC members, through focused training according to their specialities
STEP 3: Analyse the Area of Concern	• Define the intersectoral areas of concerns and the potential or intervention needed. • Analyse the context regards to available mechanisms. • Present sector-specific activities focusing on the impact of other sectors • Analyse the feasibility of the intervention
STEP 4: Select an Engagement Approach	• Gauge the intensity of engagement with other sectors in terms of climate change impact, priorities, and policy priorities. • Select the engagement approach (issue approach, sector approach, opportunistic approach).

STEP 5: Develop an Engagement Strategy and Policy	• Develop a strategy or action plan to involve the relevant sectors, and consider: • Long-term commitment • Time allocation • Supporting champions (from the JNCCC members) with tools and guidance • Establishing common points of interest • Identifying strategies agreeable to all parties
STEP 6: Foster Common Understanding Between Sectors	• Identify a common understanding of the key issues and required actions • Use a common framework to facilitate a shared understanding of the pathways and key interventions
STEP 7: Strengthen Governance Structures, Political Will and Accountability Mechanisms	• Assess the political route required to adopt the policy • Develop accountability mechanisms • Take advantage of the treaties and reporting mechanisms mandated by international agreements to integrate climate change determinants across sectors • Reflect climate change impact in the EIA guidelines • Sign MoU with the line ministries to sustain the flow of climate change related data based on institutional
STEP 8: Enhance Community Participation	• Enhance participation in the policy implementation through: • Public consultations and hearings • Dissemination information using mass media • Web-based tools • Facilitating the involvement of NGOs from different sectors

STEP 9: Choose other Good Practices to Foster Intersectoral Action	• Join other sectors in establishing common policies, programs or initiatives • Be an agent in other sectors' policies, and invite them to be agent in yours • Provide required expertise • Provide tools and techniques to include climate change in the policies of other sectors • Allocate available resources to contribute to other sectors' policy implementation • Share lessons
STEP 10: Monitor and Evaluate	• Follow closely the implementation of intersectoral action through monitoring and evaluation processes • Report regularly to the MoEnv and JNCCC on the development of policies that consider and respond to climate change impact

1.6 Communication and Engagement Plan

According to the interviews with the JNCCC members, below are some suggestions on how to communicate and engage the JNCCC members

Internal Communication (Within MoEnv)

- Keep the Minister and the SG up to-date on the CCD activities and progress
- Create communication channels with MoEnv's directorates or directors (monthly meetings, intranet)
- Set up a meetings with the Environment Directorates at the governorate to keep them up to date and get them engaged
- Conduct training to MoEnv Staff (whose their work cross-cut with the CCD)
- Maximize the coordination with other environment conventions (Biodiversity, Desertification..etc)

External

- Minister of Environment to Brief Ministerial council on the most important issues related to CC (COP outcomes, Funding opportunities, if political support required)

Keep the committee informed:

- Meeting before and after any COP event to inform and keep JNCCC up to date
- Developed a monthly or quarterly brief and disseminate via email
- Prepare a meetings agenda and send in advance (e.g., items to be discussed, actions to be taken)
- Conduct focused meeting (adaptation, mitigations,….etc) and invite relevant JNCCC members

Communication Channels

- Web site (at least keep the current website up to date and a reference for climate change data and information, activities,..)
- NGOs
- Monthly or quarterly brief
- Intranet
- Official letters
- Events Calendar (related internal and external activities)
- Emails, phone calls
-

Motivate the JNCCC members:

- Engage JNCCC members in developing sectors' policy briefs
- Sustain JNCCC monthly (every 2 months)
- Meetings to be hosted outside the MoEnv building, every time by members' institutions (rotation)
- Meetings to be chaired by the institution higher management (Director, Secretary General)
- The hosted institution relevant staff to attend the meeting
- Offer JNCCC training (training topics according to members specialties)
- Acknowledgement letter
- Arrange for field visits (Jordan)
- Abroad training and events when applicable

Chapter Two:

Progress Review of the National Climate Change Policy of Jordan 2013-2015

Prepared by:
Hussein Kisswani

2.1 Introduction:

Jordan's Climate Change Policy was the first of its kind not only in Jordan but in the entire region. The policy has been developed through a consultation process that included all national stakeholders in an extensive discussions and contributions to the policy objectives, content and structure. The Jordanian National Climate Change Committee (JNCCC) had a very important role in formulating the policy.

The Climate Change Policy covers a comprehensive package of topics. These include mitigation, climate change impacts, vulnerability, adaptation, financing and technology, legal and institutional framework, education and research, awareness and research, position on vulnerable groups, socio-economic cost benefit analysis, and finally the implementation governance, sustainability and monitoring mechanisms.

This chapter aims at assessing the amount of progress made since the formulation of the climate change policy in 2013 including a critical review of the progress of implementation of the recommendations and strategic objectives identified in the climate change policy. The report includes a SWOT analysis to describe the state of the national climate change policy after two years of its launching, and attempts to identify the priority measures/actions to be taken by MoEnv and national stakeholders for the implementation of the Policy in the next four years (2015-2018).

This chapter also can serve as an initial step for the planned revision of the Climate Change Policy, since it was stated in the Policy that it should be revised regularly to reflect the increasing scientific knowledge on climate change mitigation and adaptation, and the changes in national and international circumstances. However the timing of the revision depends on the changing national and international conditions. Internationally significant progress on the new global agreement should be made around 2015, accordingly the Climate Change Policy should be revised and updated after 2015 taking into consideration the latest outcomes of the global negotiation process, whether in COP 20 in Lima or the lead up to the Paris COP 21 and the post 2020 Climate regime.

A Climate Change Action Plan could be developed, aligned with the revision process of the Climate Change Policy. The Action Plan will address the implementation of national mitigation and adaptation measures as well as aspects of finance and technology transfer supporting the objectives of the Policy. This report will highlight the most important strategic objectives for each sector, thus playing a major role in formulating the bases of the planned Climate Change Action Plan. The report will formulate a structure for a mechanism to monitor the successes and achievements in the implementation the Climate Change Policy on the national level.

2.2 Assessment Methodology:

The process of documenting the progress in the implementation and achievements in the Climate Change Policy was done using 1) Desk review and 2) One to one interviews with selected stakeholders. A desk review was conducted to estimate the progress done in implementing the Climate Change Policy by analyzing the progress and current status of each package of strategic objectives and priorities identified in the Policy for each sector and subsector. Moreover, one to one meetings with major stakeholders in each sector and subsector were conducted to come up with the state they are in conducting the national climate change policy and to highlight the processes in progress that could not be found using desk review, another use of one to one meetings was to agree on the criteria to prioritize the implementation of strategic objectives in each sector and subsector.

The SWOT (strengths, weaknesses, opportunities and threats) analysis was conducted to identify internal and external factors that can affect the success of Climate Change Policy implementation progress. Internal factors were considered according to structure and content of the Climate Change Policy itself. While external factors were considered according to national, regional and global circumstances and development related to Climate Change Policy but out of the frame of its structure and content.

The identification of the priority measures/actions depended on ranking process from 1 to 3 based on criteria of three major factors, the 1) level of progress achieved on strategic objectives, with inadequate progress (priority actions) scoring higher ranks, 2) impact level and robustness of strategic objectives, with higher impact scoring higher ranks, and 3) cost effectiveness for implementation of strategic objectives, with higher cost effectiveness scores higher ranks. The last step was summing up all rank scores for each strategic objective. Four priority strategic objectives were selected for Mitigation as well as Financing and Technology, three for Vulnerability Assessment Impacts and Adaptation along with Education and Research, Awareness Raising, two priority strategic objectives for Legal and Institutional Framework, and Stakeholder Involvement and one for Vulnerable Groups and Gender Mainstreaming progress. The choices were made according to scores and ranks resulting from them as well as to expert judgment of the importance of the strategic objective in the remaining time of the policy under the national circumstances.

The SWOT Analysis of the Climate Change Policy:

The Strengths, Weaknesses, Opportunities and Threats analysis was conducted for the climate change policy within its implementation settings considering governance, legal framework, technical capacity and thematic coverage. The results are illustrated in Figure 2.1 below:

S	W
• Comprehensive in themes and issues covered • Participatory approach in preparation • Contain short and long term objectives • Planned to be reviewed and modified according to national and international updates • Compatible with local, regional and global agenda considering timing and priorities	• Ownership issues not clear outside Ministry of Environment • Lack of capacity building components for implementing the policy • More role of Ministry of Finance is needed to include climate change in its national priorities and in budgetary allocation • Lack of suggested instrument to utilize national Environmental Protection Fund more effectively and actively • Few adaptation proactive measures and approach in the policy
O	**T**
• Stakeholders interests remain high • New institutional arrangement in major stakeholders such as Ministry of Environment ,Ministry of Water and Irrigation and some NGOs • Better understanding of climate change impacts and challenges by many stakeholders • Various funding opportunities to be used in implementation of the policy elements • Still the only climate change policy in the region, giving Jordan a comparative advantage.	• Lack of high level endorsement of the policy • High level of turnover in the ministries of Jordan • Regional (Arab) and local interests and considerations might block and slowdown success in many initiatives from the policy, especially in mitigation front. • The prevalence of competition over cooperation in the approach of some stakeholders at the national level • Lack of national based resources and funding to implement the policy • Lack of capacity to implement the sector specific priorities • Climate change being not a priority considering the security stability and refugees issues in the region

Figure 2.1: Strengths, Weaknesses, Opportunities and Threats analysis for the National Climate Change Policy of Jordan in its current implementation settings

2.3 Results of Progress Review

GREENHOUSE GAS MITIGATION

Jordan, currently, is not obliged to adopt quantitative targets for future greenhouse emissions as mitigation targets since Jordan is a non-Annex I country under the Kyoto Protocol (the previous and current commitment periods). Jordan is participating in the international process of formulation the new global agreements for green house gases mitigation under the UNFCCC, as successor to the Kyoto Protocol. The scale and extent of climate change phenomena and the level of actions and supporting policies both on national and global scales required to deal with such phenomena entails every nation on earth to have reduction targets and participate in the global mitigation efforts. Accordingly, Jordan is willing to take on GHG mitigation in the future as a Party to a new agreement, under certain conditions. Such conditions include, but not limited to, synergy with national policies and priorities as well as funding availability to implement such mitigation targets. The new pathway for future mitigation options and commitments will be developed during the COP21 in Paris in 2015 where a new legal agreement is expected to be formulated. It is advisable that Jordan undertakes a review of its climate change policy in light of the Paris 2015 outcomes.

Progress as reviewed by thematic area is provided below:

- **Reporting and monitoring of emissions:**
- The 3rd National Communication to the UNFCCC was produced and published in November 2014 including baseline GHG emissions in 2006
- MRV framework is currently being discussed within the context of developing the Proposal for Market Readiness (PMR). MRV training and capacity development activities have been conducted within the GIZ GF-ICE project.
- Jordan's First Biennial Update Report (BUR) preparation is expected to be launched in 2016.
- **Mitigation in energy supply and renewable energy:**
- Jordan's INDCs submitted in September 2015 pledge a reduction of 14% of GHG emissions in Jordan compared to business as usual scenarios by 2030.

- The 3rd National Communication to the UNFCCC include the estimated reductions resulted in GHG emissions from suggested introduction of low carbon energy and renewable specific technologies. The TNC include cost of reduction per ton for each mitigation project suggested.
- Many projects have been initiated in Jordan to develop renewable energy sources and add them to the national energy mix. Two calls for interests were launched and around 20 projects were accepted with a total capacity expected to reach 300 MW.
- The Proposal for Market readiness (PMR) report has identified major requirements at the institutional levels for harnessing the potential of renewable energy in a low carbon friendly energy market.
- The renewable energy law No. 13 for 2012 with new amendments in 2014 which include a zero tax rate on renewable energy's input and output in terms of equipment, systems and products, primarily to encourage local green industries. In addition the law facilitates the licensing requirements for renewable energy projects and grants them incentives and approvals in line with the national energy strategy.
- The Energy Efficiency Bylaw made it compulsory to use solar water heating (SWH) systems, and no permit to connect to services unless a SWH system is installed, as of 1/4/2013.
- Current energy strategy does not explicitly mention addressing climate change as one of its objectives but includes a 10% renewable energy target by 2020 mainly aiming for about 1000MW of Wind and 600MW Solar
- The Renewable Energy and Energy Efficiency Law "permits the companies to submit direct proposals for investment in renewable energy projects in BOO method, 64 request of interest were received and 30 memoranda of understanding were signed with international companies to develop about 1000 MW of wind and solar energy projects
- Energy efficiency bylaw outlined that all RE and EE systems, equipment and devices, imported and locally manufactured (and inputs for local production) are exempted from all custom fees and duties as well as sales tax

Mitigation in Transport:

- The proposed Bus Rapid Transit (BRT) project for Amman includes a preliminary estimation of GHG reduction potential.
- Signing agreements in 2015 for the introduction of hybrid cars and electric cars in public vehicle fleets in Jordan.

Mitigation in solid waste and wastewater:

- The main project developed by Greater Amman Municipality for generating energy from waste in Gabawi landfill is still in the negotiation phases.

JORDAN VULNERABILITY, IMPACT OF CLIMATE CHANGE AND ADAPTATION

Middle East countries are known to be of the most impacted by climate changes in the present and are projected to be so in the future. Moreover, Jordan is known to be one the poorest countries in water resources. Thus, climate change must be one of the major considerations in building future policies and plans in Jordan, and adaptation to climate change seems to be unavoidable need. The National Climate Change Policy included many important directions and priorities in terms of vulnerability assessment, impacts and adaptation. Jordan made some steps toward including adaptation in national activities, under Climate Change Policy's strategic objectives and are mentioned in details below.

- **Climate change scenario Projections:**

Third National Communication Report for the UNFCCC included state of the art projections of the future climate using, for the first time in the region, dynamic downscaling using CORDEX domain using 9 different GCM coupled with two RCPs (4.5 and 8.5) with resolution of 50 km*50 km as compared to reference historic data (1980-2010). This is the 1st time that climate downscaling was used for climate projections in Jordan to cover the period until 2100.

- **Adaptation in Water Sector:**
- Third National Communication Report for the UNFCCC included a chapter on Water Resources Vulnerability and Adaptation. This study improved knowledge and insight of climate change impact on water, and more importantly adaptation measures, projects and policy recommendations were made in this assessment.
- Ministry of Water and Irrigation is implementing a regional GIZ project on the mainstreaming of adaptation measures in the water sector and has developed national capacities in this sector.
- GIZ'a regional Adaptation to Climate Change in the Water Sector in the MENA Region Programme (ACCWaM (working in cooperation with the Arab League's (LAS) Ministerial Water Council (AMWC), the United Nation's Economic and Social Commission for Western Asia (ESCWA), and the Arab Centre for the Study of Arid Zones and Dry Lands (ACSAD). This is a regional project of GIZ aiming to improve the capacity of water management institutions in the MENA region to adapt to climate change. In Jordan, the main activities are focused towards: climate mainstreaming, climate proofing, and climate finance.
- The implementation of the Disi project and start pumping operations to major cities in Jordan
- Reducing the non-revenue water loss activities through new campaigns and programs in the Ministry of Water and Irrigation

- **Adaptation in Agriculture and Landuse:**
- Climate Change and Drought Atlas for Jordan was published by the International Centre for Agricultural Research in the Dry Area (ICARDA) on the 1st of December, 2014. The atlas provides insights on the expected impact of climate change and drought on the length of the growing period, increase drought in addition to providing background information of the expected threats, upon which technologies can be built to increase climate change adaptation measures.
- Increasing the resilience of poor and vulnerable communities to climate change impacts in Jordan through Implementing Innovative projects in water and agriculture in support of adaptation to climate change".

- the Alignment of Jordan's National Action Program to Combat Desertification (NAP) with the United Nations Conventions on Combating Desertification (UNCCD's) 10-Year Global Strategy 2008-2018 also incorporated climate change in the newly revised strategy
- The joint UNDP, UNESCO, FAO, WHO-CEHA project adaptation to climate change to achieve the MDGs conducted research and produced reports on agricultural crops water use under climate change
- SEARCH project implemented by the IUCN ROWA funded by the EU, developed and pilot a resilience framework for local action planning capacities and methodologies to increase climate change resilience through joint learning, planning and testing by stakeholders through demonstration sites.
- The Zarqa River Basin (ZRB), the chosen location for a demonstration site in Jordan. Three communities have been chosen: Rusaifeh, Shomar and Kherbit al Hadid

- **Adaptation in Biodiversity and Ecosystem Management:**
- Third National Communication Report for the UNFCCC included for the first time a section on biodiversity vulnerability assessment and suggested adaptation projects.
- Climate change was introduced and considered in both newly aligned UNCCD NAP and CBD NBSAP for Jordan.
- Strategic Adaptation Plan for Biodiversity was developed by the RSCN that includes pilot projects for adaptation in the Protected Areas and Special Conservation Areas, two pilots were implemented on ground in Dana and Yarmouk PAs
- Capacity Building program (trainings on climate change, coordination meetings and participating in developing the Strategic Adaptation Plan for Biodiversity) was implemented by RSCN for climate change and Biodiversity Communication Committee that was established by RSCN earlier and included all local and regional organizations working on biodiversity in Jordan.

- **Adaptation in Health:**

- Through the activities of the UNDP funded project Adaptation to Climate Change to Sustain Achieved MDG Targets, a national health adaptation strategy that was developed with the support of the WHO Regional Centre for Environmental Health Action (CEHA).

- The development of a national public health response to climate change placing public health and health-related adaptations (water safety and availability).

- **Adaptation in Coastal Areas Management:**

- Third National Communication Report for the UNFCCC included for the first time a section on coastal areas biodiversity vulnerability assessment and suggested adaptation projects

- More active NCCC operating now is serving this purpose locally since ASEZA is active member. Regionally RSCN and ASEZA attended coordination workshop held by UNEP with PERSGA on climate change resilience regarding ecosystem based adaptation in the Red Sea area.

- Integrated Coastal Zone Management Plan was prepared and implemented in Aqaba but needs to integrate the climate change dimension

FINANCING AND TECHNOLOGY POLICY

Financial resources are the major factor that limit the success and progress in climate change related strategic targets in Jordan. Both mitigation and adaptation requires substantial financial resources. However, such financial investment should be considered an investment in the sustainable future of Jordan ensuring better living conditions under climate change impact. In an initial estimation developed by the NEEDS study in 2010 and providing projections until the year 2020, about 3.5 billion US$ will be needed for mitigation and a minimum of 1.5 billion US$ will be needed for adaptation in Jordan (for major projects in water, industry and energy). Technology transfer is becoming more important through time and is considered an integral part of the much broader strategy for green growth in Jordan addressing mitigation and adaptation. Technology transfer should only happen by the support from developed countries.

Many institutions and organizations are succeeding in resource mobilization for climate change project but at an Ad Hoc basis and not based on a national plan or integrated efforts. This leaves room for duplication of funding and efforts. Jordan is a member of the Climate and Clean Air Collation and is expected to get some funding to support the NCCC. Jordan is close to securing 10 Million from the Adaptation Fund after submitting a proposal through MoPIC, the project covers agriculture and water sectors mainly.

Jordan has developed a green economy scoping study and created a higher council for green economy that is coordinating green growth initiatives. High level Green Economy Committee was formed and can play as a platform for dialogue between the public and private sector.

The Jordanian Renewable Energy and Energy Efficiency Fund (JREEF) has developed a comprehensive business plan and is currently supporting the adoption of renewable energy and energy efficiency technologies by many national stakeholders including the public, civil and academic sectors.

LEGAL AND INSTITUTIONAL FRAMEWORK, AND STAKEHOLDER INVOLVEMENT

The legal and institutional framework of the Climate Change Policy is one of the important factors for the success of such policy in Jordan. The institutional framework addresses the allocation of responsibilities for the different elements of the Climate Change Policy to different national stakeholders or partners. At the same time, the framework secures the coordination and cooperation between public and non-public stakeholders in Jordan. The Climate Change Policy highlights the legal and institutional framework of the collaboration between stakeholders and empowers the involvement of public and non-public partners. Many steps were achieved in implementing the legal and institutional framework and empowering stakeholders within the Climate Change Policy's strategic objectives.

The level of climate change topics in the new revised Environmental Protection Law no. 52 didn't reach the level of regulations, more development is needed. However, the newly introduced articles in the revised law paved the road for a climate change regulation to be developed soon after approval of the law (it is mentioned explicitly that a climate change regulation to be developed after the approval of the law to elaborate on detailed measures to regulate climate change measures, instruments and actions in the country).

New Climate change directorate was formulated in the Ministry of Environment, including two divisions; Mitigation and Adaptation. A detailed and mandate descriptive was developed for the new unit.

EDUCATION AND RESEARCH, AWARENESS RAISING, AND ROLE OF THE MEDIA

It is mentioned in the Climate Change Policy that focused educational climate change programs and well designed and prepared curricula on all levels of education are crucial in providing the needed human resources to address climate change challenges and opportunities in Jordan, also in a wider context of green growth.

Research is very important in order to understand the type and level of climate change impacts on local level. However, limited research activities and studies on climate change have been done in Jordan so far. Nevertheless there is some efforts to guide the research process in Jordan such as the establishment of national research group on climate change by the CB-2 Project, and the analysis of research priorities and producing research guidelines, procedures, and tools for implementation of such research topics under the same project.

No implementation steps taken in this direction except at some curricula of few Jordanian universities who developed recently Master's program for climate change such as Hashemite University as well as University of Jordan. JREDS have initiated a program for integrating climate change in their education programs. RSCN had included climate change in their education and awareness programs.

Three Master programs in three different universities were launched recently; 1) Master Program of Environmental Engineering and Climate Change in the University of Jordan, 2) Masters of Science Program in Environmental and Renewable Energy Engineering in the German Jordanian University, and 3) Climate change and sustainability of dry lands in the Hashemite University

The UNDP CB-2 Project developed policy-oriented National Priority Research Topics in Climate Change, Biodiversity, and Combating Desertification (2013-2020) with Guidelines, Procedures, Tools and Potential Funding Sources to Support their Implementation in the Hashemite Kingdome of Jordan.

First survey of Jordanian citizens' awareness on climate change issues and communication plan was done by RSS through the TNC process but there is a need for systematic awareness programs

2.4 Discussions and Conclusions

The current level of implementation progress in the National Climate Change Policy considering the short time past (two years) is satisfying in most of the sectors and elements. However, there are many gaps and opportunities to be seized. The SWOT analysis shows the need to include the other vital governmental institutions in the planning cycle of climate change programs such as the Ministry of Finance and the private sector, improve ownership feeling outside the MoEnv and introduce capacity development programs targeting priorities that will come up from this report. On the other hand, the SWOT highlighted the need to institutionalize the targets of the National Climate Change Policy to overcome the lack of high level endorsement of the policy and the high level of turnover in the ministries of Jordan.

There is a need to activate the national sources funds to participate in the implementation of the Climate Change Policy objectives and shows the importance to consider the leading role Jordan has in the global context to prevent regional interests from being the driver of Jordan's position in the UNFCCC negotiations, as well as highlighting the need to in light stakeholders and decision makers of the level of threat coming from climate change and that it is one of the causes for armed conflicts in the region and the long lasting effect of climate changes may exceed the impacts of regional instability.

2.5 Recommendations for ICE Project

The objectives of the GF-ICE project provide a relevant entry point into the contribution to the enhanced implementation of the Climate Change Policy. The assessment and analysis of the progress in the national climate change policy presented above provides some directional insights for the ICE project.

ICE Project's potential contribution to the implementation of the Climate Change Policy based on the SWOT analysis of the CCP:

The SWOT analysis of the Climate Change Policy provides as well some additional potential entry points for the ICE Project to contribute to addressing the weakness and challenges while on the same time enhancing the strengths and opportunities: The following table represents a few of the options that the ICE Project can support in addressing the results of the SWOT Analysis:

Table 2.3: SWOT Analysis for the role of ICE project:

Strengths	Weaknesses
Developing guidelines for the review and update of the Policy in 2016	• Enhance platform for cooperation with other stakeholders to improve the ownership of the policy. • Invest in capacity development for implementing the policy with special focus on priorities identified in this report. • Developing a National Adaptation Action Plan to move into a more detailed level of implementation.
Opportunities	**Threats**
• Strengthening the newly established Climate Change Directorate at MoEnv. • Supporting national stakeholders in accessing climate funds.	• Enhancing the high level political support for the Policy. • Enhancing the spirit of cooperation between stakeholders • Investing in capacity building in implementing detailed sector specific initiatives.

ICE Contribution for the Priority areas of the CCP:

The previous analysis has identified the main priority areas that need to be addressed in the National Climate Change Policy. According to the prioritization process and ranking made in this report, the following table.

Table 2.4 Priorities for implementation for 2015-2018 and ideas for ICE contribution to this process.

Theme	Sector	Strategic objectives	GF ICE Contribution
GHGs mitigation	Reporting and monitoring of emissions	To improve the national capacity on aspects of the measurement and reporting of GHG emissions and the reporting of climate change actions in Jordan, with emphasize on aspect of measurement, reporting, and verification (MRV) in line with the Bali Action Plan provisions and post-2012 international climate change agreements in this regard;	Under Output D of the project, the capacities of the Ministry of Environment and relevant sector ministries for the implementation of MRV of greenhouse gas emissions are strengthened. The project will work on Preparation of a baseline report that analyzes the current process of GHG monitoring with identification of gaps and suggesting a national system for the collection, processing and documentation of GHG emissions data and having four sectoral practical guidelines on how to operate the system (energy, waste, industry and Agriculture/Landuse. The project will also conduct an extensive training on how to operate the proposed new system for GHG monitoring and inventory on a sustainable basis by the MoEnv
	Mitigation in energy supply and renewable energy	To further develop and improve the legislative and regulatory framework for renewable energy with the objective to facilitate and promote renewable energy investments	Preparation of a baseline report of potential NAMA ideas and framework based on climate change policy, TNC mitigation scenarios and other activities in Jordan. The report will include 6 handouts on potential NAMAS in energy, transport, industry agriculture, water and waste)

	Mitigation in end-use energy efficiency	To integrate the climate change perspective in energy efficiency strategies and action plans by assessing and reporting the impact on GHG emissions of the proposed and adopted energy strategies and actions, and include these data into the strategy and action plan documents	Conducting an extensive training workshop with an international expert from GIZ to develop a proposal for NAMA call ready by next round
	Transportation	To integrate the climate change perspective in transport strategies and action plans by assessing and reporting the impact on GHG emissions of the proposed and adopted energy strategies and actions, and includes these data into the strategy and action plan documents	
Vulnerability assessment, impacts and adaptation	Adaptation in Water	To implement the priority no-regret measures in the water sector (measures that are necessary to balance demand and supply regardless of climate change), because they will all greatly contribute to adaptation to climate change in the sector as well	Preparation of a proposed National Climate Change Adaptation roadmap for implementation of CC policy 2016-2020 and endorsing it in a national dialogue to be held for all stakeholders on the practical steps to maximize the potential of coordination in implementing the national CC policy. National Climate Change Adaptation Action Plan will be prepared through several discussion workshops.
	Adaptation in Water and others	To strengthen the link of water sector planning with adaptation planning in other sectors, especially the agricultural, health, and land-use and urban planning sectors	
	Adaptation in Land use	To incorporate climate change adaptation considerations in land use planning	

Financing and Technology	Main measures, and instruments in financing mitigation	The NCCC to serve as a forum for coordinating and facilitating the development, decision making and submission to donors of proposals for international financing of mitigation and adaptation projects and programs	Implementing a comprehensive training workshop associated with a clear guidebook on climate finance readiness in Jordan to identify and develop funding proposals.
	Main measures, and instruments in financing adaptation	The National Adaptation Plan (to be developed) will further elaborate the strategies for financing adaptation in Jordan	
	Promoting green growth in Jordan	Improve the wider policy, regulatory and institutional environment, including establishing a platform for dialogue between the public and private sector (including the financial sector)	
	Technology needs and technology transfer	Align the national Research & Development (R&D) agenda with Jordan's technology policy, the Green Growth Strategy, and its needs towards technology transfer for climate change mitigation and adaptation	
Legal and Institutional Framework, and Stakeholder Involvement	Legal and institutional status	Formulate climate change regulations to govern related activities, when needed, to implement the objectives of the Climate Change Policy and tied strategies. This includes regulations for the reporting of GHG emissions from activity sources to the MoEnv for adequate and consistent production of GHG inventories	Provide support for the MoEnv in this regard based on demand from the Ministry. Develop a Climate Change By-Law

	Stakeholder involvement	The MoEnv and NCCC to secure the required platform and network for active stakeholder participation	Engaging the NCCC as the main partner platform in all project activities and supporting the strengthening of the role of the NCCC.
Education and Research, Awareness Raising	Education	To mainstream comprehensive and progressive climate change science and information into existing curricula starting with elementary schools up through secondary schools to universities	
	Research	To support development of local and community-level knowledge (including indigenous and traditional knowledge) on adaptation to climate variability to enhance gender specific adaptive capacity for future climate change. International wealth of information and knowledge to be adapted to the Jordanian situation built on and deployed nationally	Integrating the concepts of climate change focusing on gender relations and traditional knowledge in all media and communication products resulting from the project. Developing specific media programs for climate change aspects.
	Awareness raising and role of the media	To promote practices of inclusion of plans for awareness campaigns to accompany the implementation of adaptation and mitigation measures to target all relevant stakeholders, including communities, decision-makers, and the private sector	
Vulnerable Groups and Gender Mainstreaming progress	Vulnerable groups and gender mainstreaming	To ensure that financing mechanisms on mitigation and adaptation and address the needs and conditions for implementation of poor women and men equally	Project will explore the potential for having specific capacity development initiatives on the integration of socio-economic concepts and gender roles in climate change in Jordan.

Chapter Three:

Capacity Needs Assessment for National Stakeholders for the Implementation of Climate Change Policy

Prepared by
Jomana Al Btoush

3.1 Introduction:

This chapter aims to assess the institutional, individual and systemic capacities of national institutions (public, private, civil, academic, research, etc...) involved in the implementation of the climate change policy. It includes a special focus on climate change related capacities in order to identify the priorities for capacity development and to explore any special training needs and support to enhance the national stakeholders' capacity to implement the Policy.

While the capacity assessment at hand targets the key stakeholders involved to the Policy implementation, the capacity building plans and effort that will be designed and delivered as a result should target all national related stakeholders.

3.2 Methodology and Work Plan

For the purposes of this specific assessment a detailed work plan was implemented based on the activities required on the assessment's Terms of Reference. The adopted methodology includes the following steps:

1. Prepare a National Stakeholders List (NSL)

Identifying the national stakeholders related to/or involved in climate change policy implementation issues by reviewing the Policy, specify national stakeholders pointed out in the policy and related to its implementation issues. In addition, the GIZ- who presented the contacts list of the National Committee for Climate Change, the Climate Change Research Committee and a list of other stakeholders related to the topic.

Design Assessment Tool (AT)

The process started with reviewing related capacity development guidelines and indicators developed by UNFCCC for Climate Change issues in particular, and guidelines developed by GIZ for Human Capacity Development (HCD) in general. Main guidelines reviewed and considered for this purpose

1. Framework For Capacity Building In Developing Countries, Annex Of The Report Of The Conference Of The Parties On Its Seventh Session which states;

- The Capacity-building activities related to the implementation of the Convention by developing countries and to the preparation for their effective participation in the Kyoto Protocol process should build on work already undertaken by developing countries, as well as on the work undertaken with support from multilateral and bilateral organizations.
- The capacity-building needs already identified in the various decisions of the Conference of the Parties should continue to be comprehensively and promptly addressed to promote sustainable development in developing countries through the effective implementation of the Convention and preparation for their effective participation in the Kyoto Protocol process.
- There is no "one size fits all" formula for capacity building. Capacity building must be country-driven, addressing the specific needs and conditions of developing countries and reflecting their national sustainable development strategies, priorities and initiative
- Capacity building is a continuous, progressive and iterative process, the implementation of which should be based on the priorities of developing countries

2. Priority Areas for Capacity-Building in Developing Countries, as listed in Decision 2/CP.7.

3. Jordan's Third National Communication on Climate Change, in particular chapter 5 (Means of Implementation) which shed some light on issues related to capacity building in climate change sector.

4. The GIZ **Supporting Capacity Development Guiding Framework for Practitioners**. According to the framework, Capacity Development must always be a stakeholder-owned process. Stakeholders must have a vested interest in the process, assume responsibility for it, and be actively engaged in achieving the change objective. For this, the assessment at hand designed on stakeholders' involvement basis in order to be able to support their climate change related priorities and needs.

5. Ready or Not? Assessing National Institutional Capacity for Climate Change Adaptation - Working Paper, World Resource Institution, 2012.

6. **Institutional Capacity and Climate Actions–OECD, 2003**. This report highlights different factors that may affect the efficiency of national systems for climate policy.

7. **The Capacity Assessment Tool for Climate Change Institutions (UNDP).** As there is no "one size fits all" formula for capacity building and needs assessment, the UNDP assessment tool was considered to address the national status related to implementing the climate change Policy. The Capacity-building under the Climate Change Convention and its Kyoto Protocol takes place on three levels:

    1. Individual level: developing educational, training and awareness raising activities;

    2. Institutional level: fostering cooperation between organizations and sectors, as well as the development of organizations and institutions, including their missions, mandates, cultures, structures, competencies, and human and financial resources;

    3. Systemic level: creating enabling environments through economic and regulatory policies and the accountability frameworks in which institutions and individuals operate.

Accordingly, a detailed questionnaire was prepared, as in Appendix 3, to reflect the potential capacities of national institutions and priorities for future capacity development to implement the policy, at the above mentioned three levels, through;

1. Assessing the individuals (staff) capacity according to their knowledge and education about the Policy implementation needs

2. Assessing the institutional capacity according to available resources; legislations, technical and financial resources

3. Assessing the systemic capacity according to mainstreaming the Policy in the national stakeholders' plans and actions.

The Assessment questionnaire requested data and information as following:

A. General basic information about the institution type, decision makers' awareness of CCP and issues, technical employees' knowledge on CC issues, technical employees' knowledge sources, availability of financial resources for CCP implementation and the basic needs for developing capacities related to CCP implementation.

B. Scoring of the existing institutional technical capacities for CC and development areas priorities of each capacity need as high, medium and low. The questioned capacity indicators (Technical and Administrative) are:

1. Organization impact/role in the National Climate Change Committee

2. Having an enabling environment; integration of climate change policy and measures into organization legislations/ strategies/ development planning;

3. Communication with other stakeholders in issues related to CCP at the national level;

4. Availability of information on climate change issues in general;

5. Ability to perform systematic observations related to CCP; meteorological indices, hydrological records and climatological services;

6. Ability to develop and implement Monitoring, Reporting and Verification (MRV) of greenhouse gas emissions

7. Negotiations on UNFCCC and Kyoto Protocol implementation;

8. Having a sustainable system for the collection and processing of GHG inventory data on a sustainable level;

9. Climate projections and downscaling using climate projections models;

10. Development of technical proposals for NAMAs;

11. Awareness of technology transfer mechanism for CDM and GEF projects;

12. Have in depth cross sectoral assessment with the socio-economic dimensions;

13. Exploring the mitigation landscape: NAMAs, PMR, LEDs, MRV, INDCs, CDM…etc

14. Awareness of climate change financing and funding mechanisms

15. Cost estimation of risks related to extreme events, the adequately insurance and risk management, efficient early warning systems, mainstreaming disaster risk reduction and disaster management;

16. Using GIS application in different areas and using satellite information for integrated analysis of climate impacts;

17. Conduct awareness campaigns/activities related to CCP;

18. Mainstreaming CC in education and capacity building development sector'

19. Determination of climate change exposure, vulnerability, impacts and adaptation planning at national, regional and sectoral levels.

20. Climate proofing: integration of climate adaptation concepts in the design and operation of new and existing developmental projects.

C. Any specific/special capacity development needs and/or training the entity needs to perform better while implementing the Policy.

Data Analysis

Analysis of the current capacity situation and identification of comparative advantages and gaps for cluster of institutions related to climate change policy themes was conducted. The aim was to have an in-depth perspective on the available technical capacities (strengths) and needed development areas (weakness) and priorities the following steps were considered:

- Perform a general statistical analysis of entities feedback about institution type, decision makers' awareness of CCP and issues, technical employee knowledge on CC issues, technical employee knowledge sources, availability of financial resources for CCP implementation and the basic needs for developing capacities related to CCP implementation.
- Four clusters addressed in this assessment; Public Sector, Private Sector, NGOs and Research/Universities.
- Scoring for each cluster the existing institutional technical capacities for CC as either :

1. No evidence of capacity
2. Partially developed capacity
3. highly developed capacity

- Analyze the current capacity situation of each cluster of institutions as public, private, NGOs and research/universities.
- Create a list of additional special capacity development needs to enhance national stakeholders performance while implementing the Policy.
- Identify advantages (strengths) and gaps (weakness) for each cluster of related institutions related to climate change policy themes.
- Compare the stakeholder's capacity status and highlight common similarities, gaps and overlaps.
- Recommend a roadmap for capacity development for national institutions that will benefit directly the implementation of climate change policy through:

3.3 Findings and Results

The analysis of the 24 received entities of the stakeholders targeted in this study shows the following:

1. Availability of a special division/unit for climate change

Six institutions were found to have a special division/unit related to climate change topic and mandated to follow up climate change issues, which represents a strength point for being able to implement the Policy. They were distributed as follow:

1. Two governmental institutions; Ministry of Environment and Ministry of Water and Irrigation.
2. Two private companies; Greentech Co. and ArabEnv Company.
3. Two NGOs; the Arab Youth Climate Movement (AYCM) and the National Energy Research Center (NERC).

In addition, two governmental key stakeholders have embedded CC in other Departments; Ministry of Transport and Civil Defense Directorate; within the Environment and Transport Division and the Disaster Department, respectively. Figure 3.1 below shows the distribution of institutions based on having a special division/unit for Climate Change.

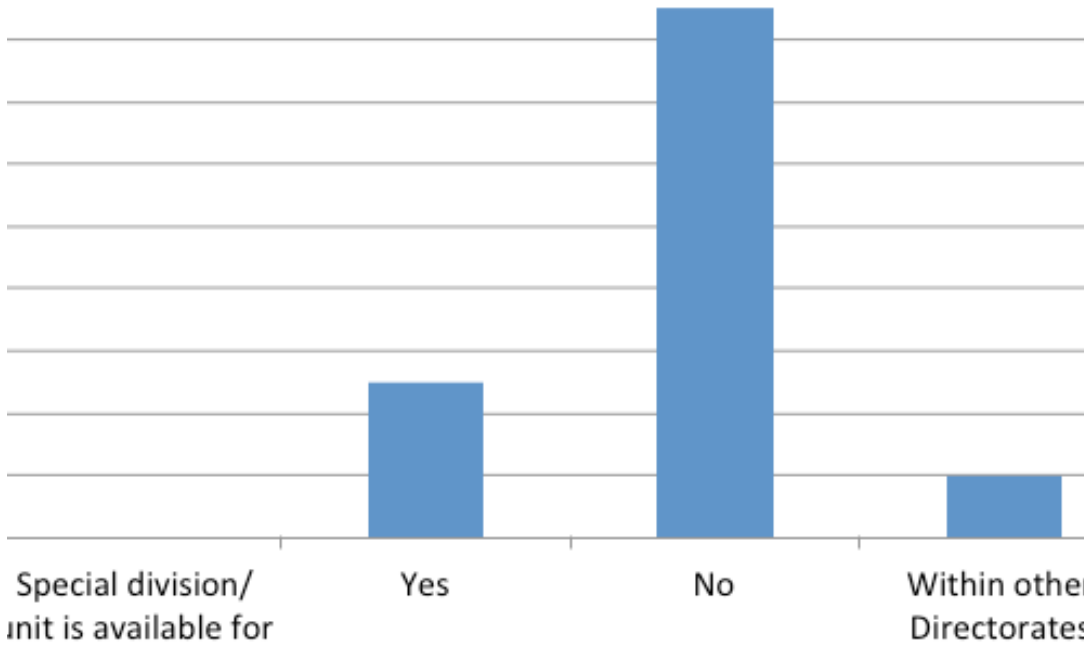
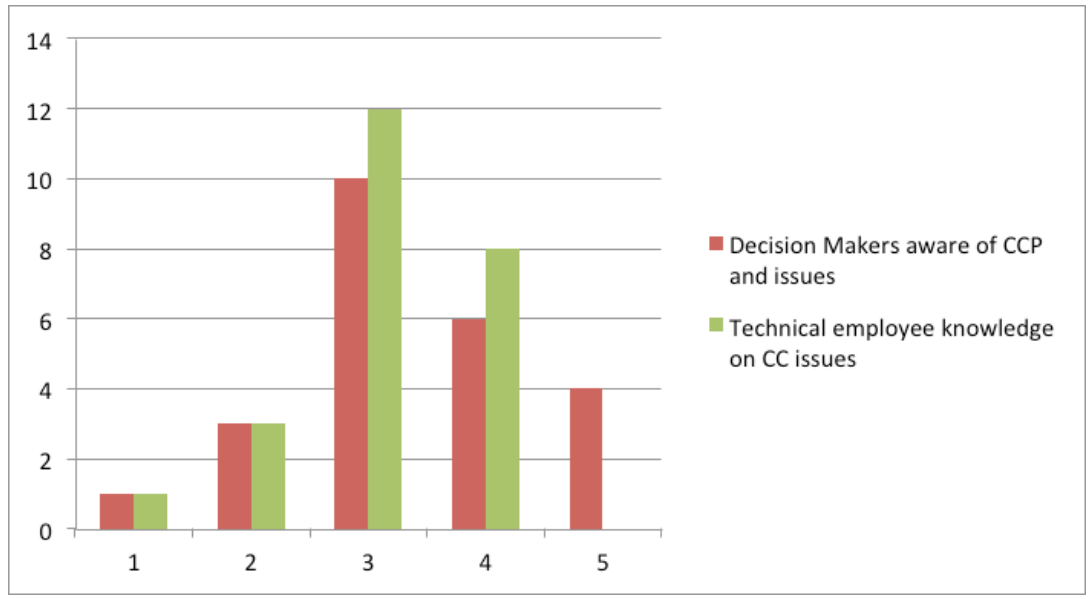


Figure 3.1 the distribution of institutions
Based on having a special division/unit for Climate Change.

2. Decision makers awareness and technical employee knowledge on CC issues

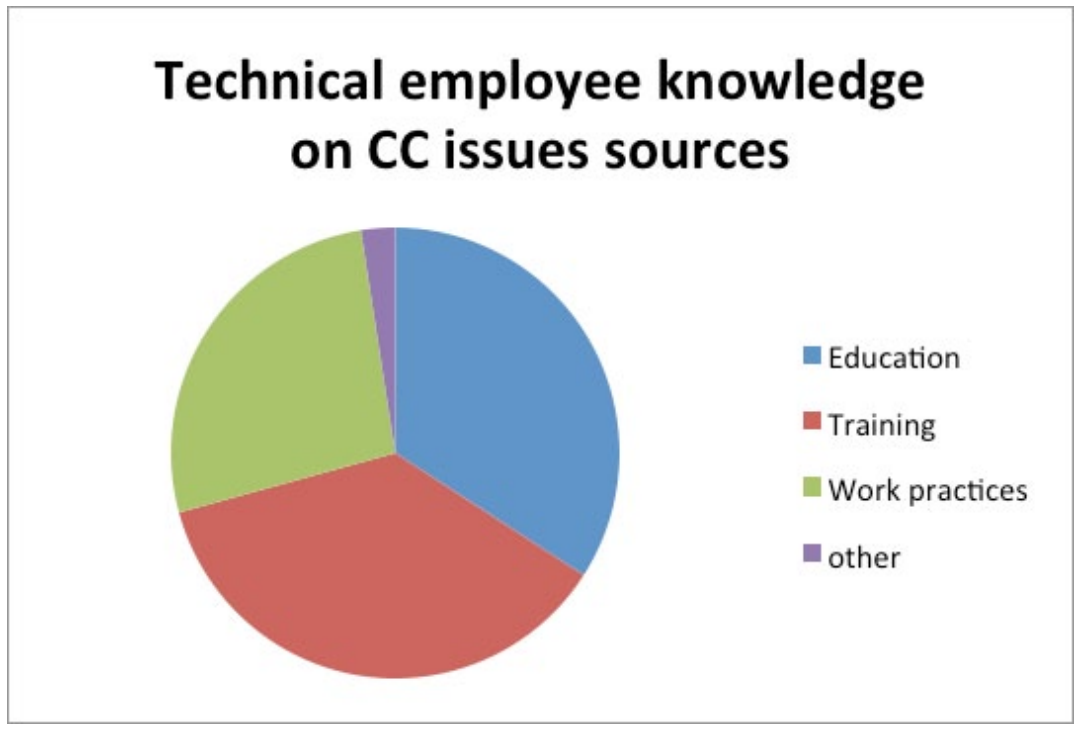
On a scale from 1 -5 where 1 is the least and 5 is the highest results show that the average level of decision makers' awareness of CCP could be considered above medium, where 20 institutions out of 24 ranked at level 3 and more. Alike, the technical employee knowledge on CC issues where 20 institutions ranked at as level 3 and more. Figure 3.2 below present the results for this issue.

Figure 3.2: Scale of awareness/ knowledge (1 is the least and 5 is the highest)



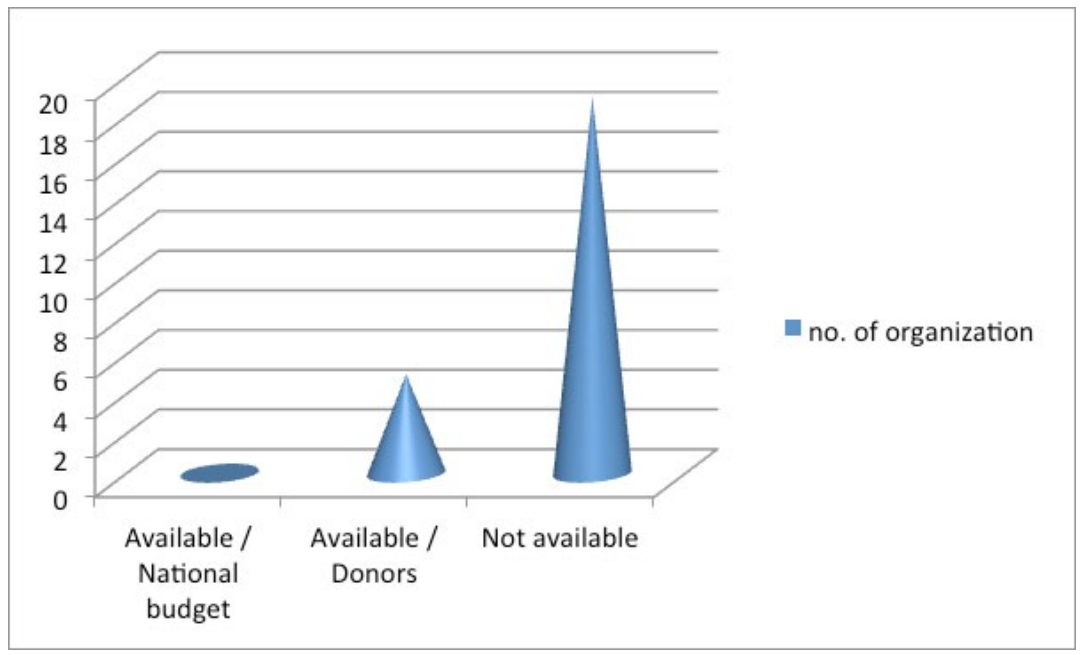
3. Sources of technical employee knowledge on CC issues

The received feedback show that national institutions depend on several sources to gain knowledge and experience related to climate change topics. Education and training methods were almost at the same level of importance for the targeted stakeholders. In addition, work practices provide them with a good share of knowledge to support the education and training. One stakeholder added Media as another source to gain knowledge. Figure 3.3 below presents the stakeholders' feedback in this regard.



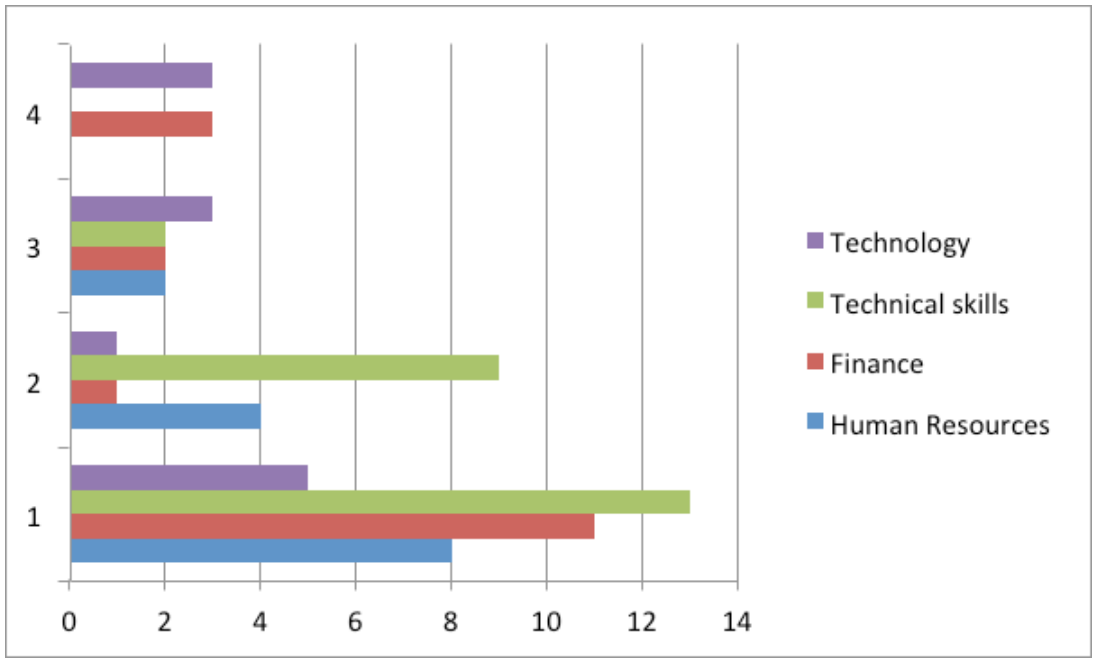
4. Availability of financial resources for CCP implementation

The results show that financial resources for CCP implementation within the institutions yearly budget are not available unless it is from donors' side. Although the level of decision makers' awareness of climate change issues is considered as above medium, according to this assessment, still the national budget does not allocate financial resources for this topic. Figure 3.4 below presents the stakeholders' feedback in this regard



5. The basic needs for developing capacities related to CCP implementation

The basic needs for developing capacities related to CCP implementation ranked upon priorities. The numerical value of "1" represents most needed while "4" represents no need. Results are presented Figure 3.5 below



6. Technical capacity development areas needs and priorities

Existing capacities strengths and weakness determination will be based on the highest and lowest level of capacity available at most of each cluster members, respectively.

Technical capacity development areas needs and priorities selection based on selecting the capacity indicators that:

- Have a high rank priority by most of the cluster member.
- Have the less level of existing capacity and at the same time represent a high or medium priority for the cluster.

A. Public Sector Cluster:

Existing Capacities Strengths:

- Communication with other stakeholder in issues related to CCP at the national level.
- Organization impact/role in the National Climate Change Committee
- Having an enabling environment; integration of climate change policy and measures into organization legislations/ strategies/ development planning

Existing Capacities Weakness:

- Disability to perform systematic observations related to CCP; meteorological indices, hydrological records and climatological services.
- Disability to develop and implement Monitoring, Reporting and Verification (MRV) of greenhouse gas emissions.
- Weakness of negotiations skills on UNFCCC and Kyoto Protocol implementation.
- Lack of a sustainable system for the collection and processing of GHG inventory data on a sustainable level.
- Lack of experience related to climate projections and downscaling using climate projections models
- Lack of experience to develop technical proposals for NAMAs
- Not aware of technology transfer mechanism for CDM and GEF projects
- Lack of in depth cross sectoral assessment with the socio-economic dimensions
- Lack of experience to explore the mitigation landscape: NAMAs, PMR, LEDs, MRV, INDCs, CDM…etc
- Lack of awareness of climate change financing and funding mechanisms

- Lack of experience to estimate cost of risks related to extreme events, the adequately insurance and risk management, efficient early warning systems, mainstreaming disaster risk reduction and disaster management
- Weakness of experience to use GIS application in different areas and using satellite information for integrated analysis of climate impacts
- Weakness of experience to conduct awareness campaigns/activities related to aspects and topics of CCP.
- Weakness of experience to mainstream CC in education and capacity building development sector
- Lack of experience to determine climate change exposure, vulnerability, impacts and adaptation planning at national, regional and sectoral levels.
- Lack of experience for climate proofing: integration of climate adaptation concepts in the design and operation of new and existing developmental projects.

3.4 Priorities of Capacity Development:

The priority issues which were selected by more than 50 % of the targeted cluster are:

1. Organization impact/role in the National Climate Change Committee
2. Having an enabling environment; integration of climate change policy and measures into organization's legislations/strategies/development planning
3. Communication with other stakeholders in issues related to CCP at the national level
4. Development of technical proposals for NAMAs
5. Awareness of technology transfer mechanisms
6. Cost estimation of risks related to extreme events, the adequately insurance and risk management, efficient early warning systems, mainstreaming disaster risk reduction and disaster management.

The second grade priorities topics that were ranked as high or medium priority by less than 50 % of the targeted cluster are:

1. Availability of information on climate change issues in general
2. Ability to perform systematic observations related to CCP; meteorological indices, hydrological records and climatological services.
3. Have in depth cross sectoral assessment with the socio-economic dimensions
4. Exploring the mitigation landscape: NAMAs, PMR, LEDs, MRV, INDCs, CDM…etc
5. Awareness of climate change financing and funding mechanisms.
6. Using GIS application in different areas and using satellite information for integrated analysis of climate impacts.
7. Mainstreaming CC in education and capacity building development sector.
8. Determination of climate change exposure, vulnerability, impacts and adaptation planning at national, regional and sectoral levels.
9. Climate proofing: integration of climate adaptation concepts in the design and operation of new and existing developmental projects.

B. Private Sector Cluster:

- **Existing Capacities Strengths:**
- Conduct awareness campaigns/activities related to aspects and topics of CCP.
- Have in depth cross sectoral assessment with the socio-economic dimensions
- Mainstreaming CC in education and capacity building development sector
- Determination of climate change exposure, vulnerability, impacts and adaptation planning at national, regional and sectoral levels.
- Climate proofing: integration of climate adaptation concepts in the design and operation of new and existing developmental projects

Existing Capacities Weakness:

- Disability to develop and implement Monitoring, Reporting and Verification (MRV) of greenhouse gas emissions.
- Lack of sustainable system for the collection and processing of GHG inventory data on a sustainable level.
- Lack of experience to develop technical proposals for NAMAs
- Disability to perform systematic observations related to CCP; meteorological indices, hydrological records and climatological services
- Lack of awareness of technology transfer mechanism for CDM and capacity building projects supported by GEF
- Lack of experience to use GIS application in different areas and using satellite information for integrated analysis of climate impacts.

Priorities of Capacity Development:

The first grade high priorities topics that were ranked as high priority by 75 % of the targeted cluster are:

- Organization impact/role in the National Climate Change Committee
- Availability of information on climate change issues in general.
- Conduct awareness campaigns/activities related to CCP.
- Mainstreaming CC in education and capacity building development sector.
- Determination of climate change exposure, vulnerability, impacts and adaptation planning at national, regional and sectorial levels.

The second grade high priorities topics that were ranked as high priority by 50 % of the targeted cluster are:

1. Having an enabling environment; integration of climate change policy and measures into the organization's legislations/strategies/development planning
2. Communication with other stakeholders in issues related to CCP at the national level

3. Having a sustainable system for the collection and processing of GHG inventory data on a sustainable level.
4. Climate projections and downscaling using climate projections models.
5. Development of technical proposals for NAMAs.
6. Awareness of climate change financing and funding mechanisms.
7. Climate proofing: integration of climate adaptation concepts in the design and operation of new and existing developmental projects.

C. Non-governmental Organizations Cluster (NGOs):

Existing Capacities Strengths:

- Communication with other stakeholders in issues related to CCP at the national level
- Availability of information on climate change issues in general
- Exploring the mitigation landscape: NAMAs, PMR, LEDs, MRV, INDCs, CDM…etc
- Conduct awareness campaigns/activities related to CCP

Existing Capacities Weakness:

- Lack of an enabling environment; integration of climate change policy and measures into the organization's legislations/strategies/development planning.
- Disability to perform systematic observations related to CCP; meteorological indices, hydrological records and climatological services
- Disability to develop and implement Monitoring, Reporting and Verification (MRV) of greenhouse gas emissions
- Lack of sustainable system for the collection and processing of GHG inventory data on a sustainable level.

- Lack of climate projections and downscaling using climate projections models
- Lack of experience to develop technical proposals for NAMAs
- Lack of in depth cross sectoral assessment with the socio-economic dimensions.
- Lack of experience to estimate cost of risks related to extreme events, the adequately insurance and risk management, efficient early warning systems, mainstreaming disaster risk reduction and disaster management
- Lack of experience to use GIS application in different areas and using satellite information for integrated analysis of climate impacts
- Lack of experience to determine climate change exposure, vulnerability, impacts and Adaptation planning at national, regional and sectoral levels.
- Lack of experience related to climate proofing: integration of climate adaptation concepts in the design and operation of new and existing developmental projects

Priorities of Capacity Development:

The first grade high priorities topics that were ranked as high or medium priority by more than 50 % of the targeted cluster, are:

- Development of technical proposals for NAMAs
- Aware of technology transfer mechanism for CDM and GEF projects
- Cost estimation of risks related to extreme events, the adequately insurance and risk management, efficient early warning systems, mainstreaming disaster risk reduction and disaster management
- Conduct awareness campaigns/activities related to CCP
- Mainstreaming CC in education and capacity building development sector
- Climate proofing: integration of climate adaptation concepts in the design and operation of new and existing developmental projects.

The second grade high priorities topics that were ranked as high or medium priority by 50 % of the targeted cluster, are:

- Organization impact/role in the National Climate Change Committee
- Having an enabling environment; integration of climate change policy and measures into organization legislations/strategies/development planning
- Communication with other stakeholders in issues related to CCP at the national level
- Awareness of Climate Change financing and funding mechanisms

D. Research/Universities Cluster:

Existing Capacities Strengths:

- Ability to perform systematic observations related to CCP; meteorological indices, hydrological records and climatological services
- Using GIS application in different areas and using satellite information for integrated analysis of climate impacts
- Communication with other stakeholders in issues related to CCP at the national level
- Availability of information on climate change issues in general
- Ability to develop and implement Monitoring, Reporting and Verification (MRV) of greenhouse gas emissions
- Conduct awareness campaigns/activities related to CCP
- Determination of climate change exposure, vulnerability, impacts and Adaptation planning at national, regional and sectoral levels.

Existing Capacities Weakness:

- Lack of sustainable system for the collection and processing of GHG inventory data on a sustainable level.
- Lack of an enabling environment; integration of climate change policy and measures into organization legislations/strategies/development planning

- Weakness of Negotiations on UNFCCC and Kyoto Protocol implementation
- Weakness of climate projections and downscaling using climate projections models
- Weakness of experience for developing technical proposals for NAMAs
- Lack of awareness of technology transfer mechanism for CDM and GEF projects
- Weakness of experience to have in depth cross sectoral assessment with the socio-economic dimensions
- Lack of experience for exploring the mitigation landscape: NAMAs, PMR, LEDs, MRV, INDCs, CDM…etc.
- Lack of experience to estimate cost of risks related to extreme events, the adequately insurance and risk management, efficient early warning systems, mainstreaming disaster risk reduction and disaster management
- Lack of experience related to climate proofing: integration of climate adaptation concepts in the design and operation of new and existing developmental projects

Priorities of Capacity Development:

The first grade high priorities topics that were ranked as high or medium priority by all members of the targeted cluster, are:

1. Communication with other stakeholders in issues related to CCP at the national level
2. Climate projections and downscaling using climate projections models

The second grade high priorities topics that were ranked as high or medium priority by more than 50 % of the targeted cluster are:

1. Organization impact/role in the National Climate Change Committee
2. Having an enabling environment; Integration of climate change policy and measures into organization legislations/ strategies/ development planning

3. Ability to implement Monitoring, Reporting and Verification (MRV) of greenhouse gas emissions
4. Negotiations on UNFCCC and Kyoto Protocol implementation
5. Aware of technology transfer mechanism for CDM and GEF projects. Using GIS application in different areas and using satellite information for integrated analysis of climate impacts
6. Conduct awareness campaigns/activities related to CCP
7. Determination of Climate Change exposure, vulnerability, impacts and Adaptation planning at national, regional and sectoral levels.

E. Additional Special Capacity Needs:

Special focus for additional specific needs/training of institutions was done to make sure that all needed capacities are addressed in this assessment. So, these special needs will be taken into consideration while designing the capacity development program to enhance national stakeholders' performance while implementing the Policy. The requested capacities development includes;

1. Climate change relation to sustainable development and specifically to transport sector, urban infrastructure, water sector, food security, integrated soil and water management and wastewater reuse.
2. Improve the performance of internal organizational systems and processes related to CCP, leading to stronger organizations with the ability to adapt and continue to develop over time.
3. Improve the performance of staff in charge of CCP follow up according to specific, defined competencies and job requirements.
4. Improve the external environment, in which organizations and individuals function, including structures supporting the way organizations interact, and/or policies and standards that must be adhered to. These may be at the national level or below.
5. Economics of climate change.
6. Digital mapping and building national geospatial system for CCP.

7. Climate change and public health, burden of disease; quantitative risk assessment; estimating dose-response and design of early warning system for some climate-sensitive health outcomes to reduce the magnitude or extent of a disease outbreak (health impacts).

8. Strengthening of national disaster preparedness and risk reduction capacities.

9. Impact of climate change on marine environment in the Gulf of Aqaba.

10. Building Private - Public Partnerships for climate change adaptation and mitigation projects.

11. Access to local and regional climate change data and records to study and analyze.

12. Mitigation modeling software (LEAP).

13. Vulnerability and adaptation assessment software.

14. Uncertainty analysis for GHG emissions (training on related software).

3.5 Common Capacity Development Priorities:

Although the previous identification process was based on four clusters of institutional entities, the ICE project can also design a combined capacity development plan that responds to the main requirements by the four sectors. The major ten issues and priorities for combined capacity development are:

- Organization impact/role in the National Climate Change Committee
- Having an enabling environment; integration of climate change policy and measures into organization legislations/ strategies/ development planning
- Availability of information on climate change issues in general
- Development of technical proposals for NAMAs
- Exploring the mitigation landscape: NAMAs, PMR, LEDs, MRV, INDCs, CDM…etc
- Awareness of climate change financing and funding mechanisms

- Determination of climate change exposure, vulnerability, impacts and adaptation planning at national, regional and sectoral levels.
- Climate proofing: integration of climate adaptation concepts in the design and operation of new and existing developmental projects
- Conduct awareness campaigns/activities related to CCP

3.6: Capacity Development Roadmap

By having an inclusive vision on the national stakeholders' capacities and needs related to climate change Policy implementation the significance of a detailed oriented Capacity Building Program (CBP) is highly seen. This CBP should bridge the gaps between the current capacities and the needed capacities, which will benefit directly the implementation of climate change policy.

This assessment presents recommendations to support developing the CBP for national stakeholders involved in the policy implementation. The needed CBP should;

1. Be designed with a vision of enhancing national stakeholders' capacities; technically and financially, to implement the National Climate Change Policy.
2. Have a comprehensive action plan which would be reviewed every year to map progress.
3. Divided into four work-streams which to be conducted in parallel over the CBP time frame:
    - Work stream A for public institutions.
    - Work stream B for private sector.
    - Work stream C for NGOs.
    - Work stream D for research/universities.
4. Design a combined stream to serve the common capacity development priorities identified by the four clusters.

5. Cover and tackle the most needed strategic intervention areas such as:

    1. Inter-sectoral coordination.
    2. Data systems and analyses
    3. Support financing systems
    4. Mainstreaming of climate change issues into development dimensions at the national and sub-national levels.
    5. Partner with institutions and individuals to sustain, extend and deepen climate change knowledge and experience;
    6. Improve the quality and relevance of strategic needed interventions for long terms sustainability.
    7. Address the specific needs/training of each institution as specified previously.

Contributors

Maha Al Zoubi

With over twelve years of experience in public and international organizations- planning and policies formulation, managing and coordinating foreign funded projects in a variety of development sectors including: Water, Energy, Agriculture, and Environment- and four years of experience in international cooperation, donor coordination, resource mobilization and financial management Maha. Al-Zu'bi has a long-standing interest in the interplay between environment, development, and policy, and actively fostering interdisciplinary approaches to real-world energy, water and environmental issues. Maha earned her master's degree in Environmental Science Management, and then she worked as a director of the Projects Department in Jordan's Ministry of Planning and International Cooperation and as Environment Analyst at the United Nations Development Program. Al-Zu'bi is a PhD Candidate at the University of Calgary-Canada; specializing in Environmental Design and Energy & Environmental Systems. She conducts her research in the Middle East region, focusing on the Arab cities, with the goal of proposing local policies and principles for governance of climate change adaptation and mitigation.

Hussein Kiswani:

Mr. Hussien Muhsen Al-Kisswani has been with the Royal Society for the Conservation of Nature (RSCN) for seven years, in which he worked in climate change projections, climate change impact assessment, ecosystem modeling and climate change vulnerability assessment. Mr. Kisswani mastered and led the work aimed to assess the regional impacts of climatic change on the future distribution of some major floristic groups and ecosystems dynamics in the Jordan Rift Valley (JRV), and incorporated the results into the conservation planning and management of Protected Areas (PAs) and Special Conservation Areas (SCAs). Additionally, he is working on introducing elements for 'climate proofing' and biodiversity conservation within PAs and SCAs. Recently, he worked with an international expert in producing the RSCN strategy for climate change adaptation and implementing two pilot projects of biodiversity adaptation with climate change. Hussein has joined Friedrich Ebert Foundation Regional Office in Amman as an energy and climate programme manager.

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Jomana holds a Master's degree of Environmental Sciences and Management from the University of Jordan. She had practical experiences that extend over 17 years working with different sectors; starting with voluntary work, public, private, international donors and NGOs. Between 1998 and 2009 she worked for the Ministry of Environment in the Waste and Chemicals Directorate and then she moved to the USAID as Environmental Project Management Specialist. Consequently, she dived deeply in Environment Protection and Sustainable Development sector. Currently, she is working on a freelance basis for several companies and NGOs, providing consultancies and services related to environment protection; climate change, waste management, water, energy , project management, sustainable development and capacity development sector. In addition, she designs and delivers different training and awareness sessions to enhance communities capabilities and build the capacities of its different categories in several topics and at multiple scales; technical and life skills.


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