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**ENPI CLIMA-SOUTH**

**Support to Climate Change Mitigation and Adaptation in the ENPI South Region**

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# **Annex 1: LIST OF INTERVIEWED STAKEHOLDERS**

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# **Annex 4: LIST OF POSSIBLE ACTIVITIES**

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# List of Acronyms

CBS Central Bureau of Statistics

CC Climate Change

CDM Clean Development Mechanism

ENPI European Neighborhood Policy Instrument

ERs Emission reductions

EU European Union

ICCIC Israel Climate Change Information Center

LEDS Low Emission Development Strategy

MEP Ministry of Environmental Protection

MoT Ministry of Transport

MEWR Ministry of Energy and Water Resources

NAMAs Nationally Appropriate Mitigation Actions

NMM New Market Mechanism

OECD Organisation for Economic Co-operation and Development

PRTR Pollutant Release and Transfer Register

TNA Technological Needs Assessment

UNDP United Nations Development Programme

UNFCCC United Nations Framework Convention on Climate Change

WRI World Resources Institute

# 1. Introduction

**Project name**: ENPI CLIMA-South support to climate change mitigation and adaptation in South Mediterranean countries

**Location**: within the 10 south Mediterranean countries; Algeria, Lebanon, Morocco, Tunisia, Libya, Egypt, Israel, Jordan, Palestine and Syria.

**Duration**: 48 months

**Status of the project:** The ENPI CLIMA SOUTH project started in February 2013 is now at the inception phase until July 2013. Climate change profiles were drawn up during the Identification Phase in 2011 for each country on the basis of their latest national communications to the UNFCCC. While the newly established team of Key Experts was working in Tunisia and Algeria, a team of 3 short term experts (two internationals and one national based in Jerusalem) worked in parallel in Israel, to update and expand the 2011 country profile during this inception phase according to the most recent documents and reports in consultation with stakeholders interviewed during the mission held in May in Jerusalem, Tel Aviv and Haifa (cf Annex 1 List of person interviewed). Table (1) below summarizes the results obtained for Israel.

Israel has the status of Non-Annex 1 country under the UNFCCC, however after joining the Organization for Economic Co-operation and Development (OECD), Israel is committed to **modify its status** in the CC process, shifting to Annex 1 like status, or a post-2012 equivalents.

**Table (1) Israel - 2011 Country profile summary**

|  |  |  |  |
| --- | --- | --- | --- |
| GHG emissions (net): | 1996: 62.7 MtCO2eq  2007: 76.8 MtCO2eq | GHG emission growth rate: | 1.9% (1996-2007) |
| Main GHG emitting sectors: | Energy (85%), Waste (8%), Agriculture (4%), Industrial processes (3). Within energy, manufacturing industries and transport are important subsectors. All data are for 2007. Percentages are based on total net emissions. | | |
| Special national circumstances: | 92% of Israel’s population lives on 40% of Israel’s land. The population density in especially the Tel Aviv district is extremely high (over 7000/km2).   * High GDP growth rate, * Limited renewable resources, water shortages * Land scarcity, * High population growth, immigration | | |
| Main adaptation challenges: | * education in water availability and quality * Expected reduction in agricultural productivity * Increases in the occurrence of extreme weather events and floods * Impacts on ecosystems | | |
| Mitigation: | Israel has set a target of 20% reduction in GHG emissions by 2020 compared to a business as usual scenario. Among the main measures to mitigate greenhouse gas emissions is energy efficiency, the promotion of renewable energy, with most of the mitigation potential in energy efficiency, green buildings and transport. | | |

The 2011 findings were updated during the 2013 mission and provide a starting point for the identification tool described below. The profiles obtained for each country will be updated during the course of the project implementation as monitoring and evaluation process. They will also be declined at the regional or thematic levels.

**CC capacity assessement & Activities identification Tool**

The ENPI CLIMA-South is implemented in a dynamic region, with rapidly changing social and political environments. At the same time, climate change is at a critical stage of the international negotiations in which new developments may be expected. Flexibility is therefore of the utmost importance and an approach is needed that can be rapidly adapted on the basis of the changing needs and moving opportunities. This situation was taken into account with the development of a simple, flexible and participatory tool allowing the visualization of issues to agree on means and ways to address them.

The assessment tool used for this project is based on Key Experts’ analysis of the situation described in climate change relevant documentation and the results obtained during interviews and discussions using a set of questionnaires prepared on mitigation, adaptation and communication related issues (see column 1 of each Table). The current situation of a country is assessed and scored from 1 to 5 [[1]](#footnote-1),indicating that the country’s situation with respect to that particular intervention area is completely satisfactory (where capacities equal needs).

The results obtained are converted in a visual representation of ‘spider chart’; several possible intervention areas are charted on the spokes of the diagram. The number of spokes can be increased and more intervention areas can be added according to questions asked. The Key Expert Adaptation for example has developed a specific one with more adaptation parameters. This method can be best illustrated using an example of the application of the tool as in the figure below.

Figure 1.Example of a current status assessment of climate change capacities versus needs

In this example, the country is doing very well on mitigation option identification but poor on climate modeling and adaptation plan formulation and very poor on carbon finance mechanisms. This suggests a direction for priority interventions. The idea is to ‘*stretch the web*’, in order to smoothen out the indentures in the graph through possible interventions.

Figure 2.Stretching the web - identified targeted improvements from current situation

Schematically, this process involves the following steps:

***Pre-condition***:

The national counterpart is clearly identified to discuss it

***Assessment of needs should be based on:***

Views of national government stakeholders

Views of expert community

Objective indicators (when possible)

***The assessment of the current status should be based on the same sources of information***

Views of national government stakeholders

Views of expert community

Objective indicators (when possible)

***Other donor interventions are important to consider. Important aspects that should be reflected in the analysis are***

To what extent can other donors’ efforts bridge the gap between needs & current status

Timeline – how long will it take to achieve these gap-eliminations?

How can we monitor progress?

***Discussion with national counterparts***

Initial outcome of the analysis of needs vs. status vs. ongoing donor efforts: suggested

priority gaps to be addressed

Feedback and agreement on priority needs.

This process will be repeated from time to time to measure progress. The tool can also be applied several times to zoom in on various topics. Interventions are formulated against needs as assessed. Eliminating the indentures in the form then means eliminating the worst gaps between the current situation and the needs of the country (or region). Major donors’ interventions on climate change can be placed to identify which areas may already be covered, or where coordination of efforts would be needed. This analysis, and the ‘webs’ created is an excellent tool to support dialogue and communication with other donors and coordination of efforts. While the tool and its use is intuitively clear, constructive dialogue is necessary to make it perform well.

# 2. GHG policy Assessment up-date in Israel

## 2.1 The low carbon development issues

Table (2) below shows that three countries are more active than the others (i.e. Israel, Jordan and Morocco); Egypt and Tunisia are ‘in between’ whereas Algeria, Lebanon, Libya, Palestine and Syria are the least active.

Table (2) CDM projects & submitted NAMAs in ENPI South countries in 2011

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Country | No. registered CDM projects | NAMA submission | Country | No. registered CDM projects | NAMA submission |
| Algeria | 0 | Yes, not concrete | Libya | 1 | No |
| Egypt | 11 | No | Morocco | 8 | Yes, specific |
| Israel | **25** | **Yes, specific** | Palestine | 0 | No |
| Jordan | 4 | Yes, specific | Syria | 3 | No |
| Lebanon | 0 | No | Tunisia | 2 | Yes, specific |

## 2.2 GHG stakeholders consultations and findings

The Key expert for low carbon development conducted interviews and consultations with various climate change stakeholders, as well as specific low carbon development experts (See Annex 1). A series of interviews through consultative meetings were organized with representatives/staff of various agencies:

***GOVERNMENT OFFICIALS & PUBLIC SERVICES***

* **Ministry of Environmental Protection (MEP**), UNFCCC Focal Point at Division of Air Quality & Climate Change and the Foreign Relations Coordinator (Division of International Relations) stated that in the last few years Israel implemented several key steps on climate change mitigation, above all the Second National Communication on Climate Change that was submitted to the UNFCCC (2010) and the Greenhouse Gas National Plan for Reducing GHG Emissions (November 2010). The Plan received a significant budget (2.2 billion shekels, about $600 million) for implementation of mitigation measures up till 2020. Due to the recent government budget cuts, the Treasury froze the Plan and a budget for 2013-2014 has not been allocated. Israel has gained wide experience in data collection and analysis (the national GHG inventory is updated every year) and in identification of climate change mitigation measures (only the transport sector needs further work on that direction WRI is launching a process to develop 2 new GHG Protocol guidelines for mitigation action/policy accounting and for mitigation goals accounting. Israel volunteered to join a pilot testing process that WRI is carrying out to implement the draft mitigation standard/s and to then provide feedback. Moreover, a voluntary greenhouse gas registry was formally launched on July 1, 2010, and to date around 45 companies have joined and most report their annual emissions. The Environmental Protection Law (Pollutant Release and Transfer - Registering and Reporting Obligation (PRTR) was approved by the Knesset in March 2012. It imposes reporting obligations on facilities with significant impact on the environment, including obligations to report on the annual quantities of pollutants emitted into the air (including GHG emissions), water, land and sea and the off-site transfer of waste generated in the facility for treatment.
* **Ministry of Energy & Water Resources (MEWR)**: a detailed picture of the initiatives carried out and ongoing in Israel on energy access, energy efficiency and renewable was given by the Chief Scientist. The availability of large volumes of natural gas is strongly modifying the energy policy of Israel, since it can meet the country energy demand. The Government had set a guiding objective in energy efficiency to reduce electricity consumption by 20% until year 2020, as stated by the National Energy Efficiency Programme (it is a government decisions). The Government issued in 2010 a policy paper “Policy on the Integration of Renewable Energy Sources into the Israeli Electricity Sector” on the use of renewable energy sources; this paper sets a 10% generation target of Israel’s to cover electricity needs from renewable energy sources by 2020. The conclusion was that Israel is investing in energy storage and is open to develop a trilateral cooperation project on energy involving Palestine and Egypt.
* **Ministry of Transport and Road Safety (MTRS)**: the Head of energy, fuels and environmental protection department, spoke about the recentpolicies and laws entered into force in Israel to mitigate the GHG emissions in the transport sector. Such actions are related to the shift to public transport (Bus Rapid Transit, light rail, parking policies, etc.), to the use of cleaner fuels in private vehicles, to the introduction in the coming years of less emitting fuels like CNG. However, there is no yet an overall GHG emission reduction strategy for the transport sector.
* **Central Bureau of Statistics (CBS)**: the Head of the Agriculture and Environmental Statistics Sector-Economic Infrastructure Department stated that CBS is in charge of preparing and updating the National GHG emission inventory; he is directly working on it since 2005. The inventory covers energy, transportation, agriculture, forestry and land use, waste. The CBS is also providing support and coordination to the Municipal Authorities for the development of the city-level GHG emission inventories. He believes that the national expertise on data collection and analysis is currently very good, even though the public awareness is still low, mainly due to the fact that the National Communication is available in English language only. He finally mentioned the CBS availability to participate in regional workshop for transferring the Israeli experience on GHG inventories to the other ENPI countries and **to build a regional project for developing climate change indicators.**

***ACADEMIA & CIVIL SOCIETY***

* **Israel Climate Change Information Center (ICCIC)**: An Israeli Climate Change Information Center (ICCIC) was set up by the Ministry of Environmental Protection in Haifa University in March 2012. ICCIC serves as the Focal Point for all country state-of-the-art know-how on CC impacts and adaptation options, exploring potentials for exporting experience and capacities to developing countries. ICCIC is mainly focusing on adaptation, on seven sectors and cross-cutting issues: regional and local climate scenarios, water resources, public health, biodiversity, urban planning and “green” buildings, geo-strategic aspects and economics.
* **Forum15 – The Israeli Forum of Self-Government Cities:** The Projects manager explained that the “Forum 15” brings together most of Israel’s large cities, housing nearly 3 million residents (approximately 40% of Israel’s population). Forum 15 launched in 2008 as a national “*Climate Convention*”, a the local version of the ICLEI`s International Convention for Climate Protection, signed by Israel’s eighteen major municipalities (fifteen cities of the Forum and three additional major cities – Jerusalem, Bat-Yam, and Ashkelon). Under this Convention, the municipalities made the commitment to reduce greenhouse gas emissions by no less than 20% by the year 2020 - against the year 2000 and to prepare a municipal plan of action to achieve those goals. She highlighted some key priorities for Forum 15: the identification of pilot demonstrative sites in Israel, public awareness raising and the startup of international activities and collaborations.
* **Herschel Sustainability Center (HSC):** the Executive Director of the Center and theSustainability & Climate Change Coordinatorof **Life & Environment (LE)**, (the Israeli Union of Environmental NGOs) were interviewed. The two organizations are working in close cooperation in the same building in Tel Aviv, gave to the team a complete picture of their ongoing initiatives on climate change. They confirmed the need to increase public awareness on CC topics and highlighted some priorities for the country: further empower local authorities, develop sectoral strategies for local communities, and analyze financial engineering systems for implementing sustainable actions.
* **Israel Energy Forum**, the focal point on research and policy planning was interviewed. The energy forum was established 7 years ago, having the main goal of driving the government energy strategies towards sustainability. He raised some main priorities: promotion of green buildings, use of renewable energy technologies and incentive schemes, raising awareness of consumers on energy efficiency, institutional strengthening, empower local authorities.
* **Israel/Palestine Center for Research and Information**: The Director Environment and Water Department gave to the team an update on two on the interesting ongoing regional projects involving Israel: the GLOWA which was finished and they want to move to the next steps of environmental projects.

***TECHNICAL AND FINANCIAL PARTNERS***

* **Delegation of the European Union to Israel**: the Policy Officer – Scientific Section helped the team in getting an overall understanding of the current situation in Israel regarding climate change and of the ongoing donor-funded projects.
* **EU-Israel Sub-Committee on Environment and Climate Change** held on May 28th at the Foreign Affairs in Jerusalem: the team met with the Deputy Head of Division of theEuropean External Action Service, a representative of DG Environment (Brussels), and representatives of the Foreign Affairs and Ministry of Environment.

The assessment through stakeholders’ consultation was conducted using the “web structure” approach mentioned in the proposed methodology (cf. Box 1 page 6). The results of the interviews, consultations and other references on low carbon development are summarized in the next paragraphs.

## 2.3 GHG Inventory performance to date and progress needed

Table 3 and Figure 1 below illustrate the outcomes of the assessment on the GHG assessment preparation process. Israel has gained a long and extensive experience in GHG assessment, and especially in formulating GHG inventories. CBS in particular represents an excellence in that field and could transfer experiences to other ENPI countries. Local GHG inventories have been also develop/promoted by “Forum 15” and with CBS offering technical support. Some capacity building activities might be useful at sectoral level, i.e. transport, tourism, agriculture, to enhance the expertise on GHG inventories and to promote institutional cooperation.

Table (3) Assessment of current GHG inventory preparation process

| Focus | Rating | Target | Status | Comment | Capacity Needs |
| --- | --- | --- | --- | --- | --- |
| Methodology | 4,5 | 5 | GHG inventory updated every year since 2006 | Tier 2 in many sectors | no needs as there is already capacity building for preparation of the NIR (TAIEX in London, July 2013) |
| Institutional arrangements | 3 | 5 | Data are available in various authorities, CBS collects them | coordination among institutions could be improved | Capacity building on GHG national systems for target authorities (min of Transport, Agriculture, Tourism, Interior) |
| GHG Data management | 5 | 5 | data are managed by CBS | very good data management in CBS | no needs |
| National Expertise | 4,5 | 5 | high expertise in CBS | many GHG inventory experts | Capacity building at local level and in specific sectors (i.e. agriculture) |
| GHG Data assessment | 4,5 | 5 | data are modeled and assessed by CBS and academia | High level of data assessment capabilities | Capacity building at local level and in specific sectors (i.e. agriculture) |
| GHG Records | 4,5 | 5 | good archive capacity and system | well developed | no needs |



Figure (3) Current GHG inventory preparation process assessment in Morocco

The consultations with the Ministry of Environmental Protection, the UNFCCC focal point, CBS, NGOs and the academia lead to the conclusion that the overall evaluation of the current status is high/very high for most aspects (national expertise, data management, GHG records and documentation, documentation methodology, data assessment) and medium for institutional arrangements, as illustrated in Figure 3 above.

Based on that, we obviously propose to set the most ambitious targets for Israel on GHG inventory performance at the end of this project, getting to a very good status on all subtopics. This might happen if the cross-cooperation among institutions will be enhanced and if some sectors (i.e. transport, agriculture) will improve their expertise on GHG data assessment.

## 2.4 Mitigation assessment and mitigation options

The consultations with MEP, MEWR, MoT, CBS, ICCIC, the academia, as well as NGOs concluded that Israel up to date owns a clear and comprehensive assessment of the mitigation options, with minor gaps in some sectors only (transport, agriculture). As illustrated in Paragraph 2.2, the Government has actually developed a CC mitigation policy, a national action plan, and also sectoral strategies (i.e. energy efficiency, renewable), even though the country is currently facing temporary budget constraints and the national plan is frozen at this time. It is worth to note that the high level of the national expertise on CC mitigation is accompanied by a lower level of the public perception of the topics. Moreover, Israel is not working on Technical Needs Assessment because this tool is mainly thought for developing countries (and it wasn't offered by the UNFCCC). Therefore, the overall evaluation of the current status is ranking very good / good for all aspects of mitigation assessment but the national perception on mitigation options. This is illustrated in Table (4) and Figure (4) below.

Table (4) Current mitigation assessment versus needs for mitigation scenarios development

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mitigation Assessment | Rating | Target. | Status | Comment |
| Mitigation Scenarios & Policies | 4,5 | 5 | CC mitigation policy published in 2011 | Capacity building at local level |
| Mitigation Options | 4,5 | 5 | High level | no needs |
| Mitigation Options by sector | 4 | 5 | Some sectors have not developed their Mitigation Options (i.e. agriculture, transport) | Capacity building in mitigation assessment in selected sectors |
| Technical Needs Assessment | - | - | n.a. | TNA only done by developing countries |
| National Expertise in Mitigation | 4 | 5 | High level | Stronger involvement of relevant stakeholders is necessary |
| National perception on mitigation options | 2,5 | 4 | Low awareness on mitigation | Awareness raising highly needed in all sectors |

**Fig. (4) Assessment for mitigation scenario development**

The desired target is a very good level of public awareness on mitigation and to enhance the national capacities in some specific sectors, to globally achieve an optimal status of low carbon development policies in the country.

## 2.5 Climate Change Finance

Even if this country is a member of the OECD, it is also simultaneously a Non-Annex 1 Party to the Climate Change Convention and Kyoto Protocol, therefore has registered a high number of CDM projects (30 by now) and gained a significant experience on climate change flexible mechanisms. This situation leads to a good knowledge on CDM, pCDM, NAMA, LED and NMM, even though, according to MEP, Israel is not looking for external financial support for their future low carbon development measures.

The national plan for reducing GHG emissions included a budget for educational and information activities during 2011-2012 to increase awareness and promote behavioral changes in the public in order to achieve electricity savings and energy efficiency, and greenhouse gas reductions. There is a need of enhancing the perception of climate change in stakeholders target groups, such as private sector (PS), national experts, policy makers (PM), financial institutions (FI) and Insurance Companies. This is illustrated in Table (5) and Figure (5).

Table (5) Assessment of Current Status versus needs of Financial Mechanisms

| Activity/Assessment | Rating | Target | Comments and Needs |
| --- | --- | --- | --- |
| Estimation of CO2 ERs | 4,5 | 5 | several studies developed |
| Costing CO2 Ers | 4,5 | 5 | several studies developed |
| Perception PS, FI & Ins | 3 | 5 | need of oriented awareness raising initiatives |
| CDM & P-CDM | 4,5 | 5 | 30 CDM registered |
| NAMAs | 4 | 5 | Enhance cooperation between various bodies |
| LEDS formulation | 3 | 4 |  |
| NMMs | n.a. | n.a. | Israel will not ask for external financing |
| MRV | 4 | 5 | National MRV in preparation |



Figure (5) Assessment of Current Status versus needs of Financial Mechanisms

## 2.6 Mapping and synthesis of the results obtained

The diagnostic of the CC situation in Israel based on the documentation analysis and the discussion with the national stakeholders in the different sectors has allowed pointing some priorities in terms of assistance needs, as follows:

* ***Consultations on the international climate change negotiations*** with special focus on the GHG commitments for the country in the post-Kyoto UNFCCC process.
* ***Importance of strengthening the institutional coordination*** on CC to reinforce effective cross-sectoral approach. Currently, in fact, the country has developed its Greenhouse Gas Reduction National Plan in several sector strategies; however few sectors still do not have their own low carbon development plans.
* ***Strengthen the coordination among the several CC initiatives under development*** (voluntary registry, PRTR, pilot MRV, etc.) to enforce a leading role in the ENPI region on GHG policies. A Twinning project with the EU will provide support for this work.
* ***Enhance the power of the local authorities in low carbon development planning***, taking advantage of “Forum 15” and of already available municipal climate plans, to develop case studies, allowing a better coordination with the national plan.
* ***Awareness campaigns*** for decision makers, politicians at national and local level (parliaments, local collectively elected officials, etc.), as well as for the private sector, investors and bankers. Public perception of CC should also be raised through dedicated information and communication initiatives.
* ***Enhance the role of NGOs*** and sub-national entities. The implementation of CC policy at territorial level will require in the active implication of NGOs and sub national stakeholders who have developed long term experience and could bring a significant added value to the CC policy.

## 2.7 Targets for improvements of the situation on Low carbon development

Based on consultations with the mentioned stakeholders in Israel, the overall assessment of Climate Change Mitigation / Low Carbon Development perspective identified the following targets for improving the current situation:

* Improve implementation of ***policy measures*** through better ***coordination*** between government ministries and local authorities.
* Promote ***dialogue with the EU*** on climate change and enhance the country visibility in the ***international climate change negotiations.***
* Involve Israel in ***regional/national GHG inventory workshops***, sharing with ENPI countries the national experience on GHG data collection and management, and creating synergies with other funded regional projects.
* Involve Israel in a regional ***pilot project on low carbon cities*** (i.e. with Palestine, Jordan, Egypt), sharing/enhancing Forum15 experience & promoting a similar approach in cities.
* Prepare **GHG emission reduction strategies** for the less advanced sectors (i.e. transport).
* Capacity building on specific **MRV requirements**, based on the ongoing pilot project.
* Promote **cooperation among NGOs in the region** (Palestine, Jordan, Egypt).
* ***Awareness campaigns*** to enhance Public Perception on CC mitigation**.**

Table (6) Current Status Assessment of Climate Change Mitigation versus Needs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Focus | Rating | Target | Comments | Needs |
| GHG Data collection | 4,5 | 5 | very good experience in data collection | Organizing regional WS on GHG inventory (Israel as ‘champion’) |
| GHG Data analysis | 4,5 | 5 | very good experience in data analysis | Organizing regional WS on GHG inventory (Israel as ‘champion’) |
| GHG Mitigation modelling | 4 | 5 | good experience in mitigation modeling | Organizing regional WS on mitigation assessment (Regional lead) |
| Mitigation options & NAMAs identification | 4 | 5 | sectoral and national mitigation options identified | Develop NAMAs on the less advanced sectors (i.e. transport, agriculture) |
| Mitigation option costing | 4 | 5 | good experience in mitigation costing | Organize regional WS on CO2 costing and CC indicators |
| MRV | 3 | 5 | National pilot MRV in preparation | Organize regional/ national WS on MRVs |
| LEDS formulation | 3 | 5 |  |  |
| Finance mechanisms | 4,5 | 5 | high contribution to carbon finance mechanisms | No needs |



**Figure (6) Current Status Assessment of Climate Change Mitigation versus Expected Target**

As pointed out in the previous paragraphs, due to the solid institutional framework and on the valuable national expertise on low carbon development, Israel is very well positioned in many aspects related to climate change mitigation, and therefore does not need a wide support to achieve a significant country improvement. The existing small gaps might be addressed through specific technical assistance to achieve an overall very good status in all subtopics. However, it is recommended to involve the country in regional/sub-regional training / workshops, facilitating the know-how transfer from Israel to the less experienced ENPI countries. The summary of the main findings (ratings/targets) is illustrated in Table (6) and Figure (6) above. A list of concrete activities identified during the mission to obtain such a “stretching of the web” is listed under Annex 4.

# 3. Adaptation/Resilience to climate change

## 3.1 stakeholders consultation

The analysis of issues related to CC adaptation and climate resilience in Israel is based on the reading of the 2nd National Communication (November 2010), the First and Second ICCIC Reports (2011 and 2012), interviews in Jerusalem, Tel Aviv and Haifa which enabled the team to meet with key stakeholders. These visits were organized by a climate change national expert, also former staff of the ministry of the Environment, who facilitated the organization of consultative meetings. The series of interviews was done jointly with the Low Carbon development Expert with the following institutions (listed under Annex 1):

* Ministry of Environmental Protection (MEP)
* Ministry of Energy & Water Resources (MEWR)
* Ministry of Transport and Road Safety (MTRS)
* Central Bureau of Statistics (CBS)
* Israeli Forum of Self-Government Cities (Forum15)
* Israel/Palestine Center for Research & Information (IPCRI)
* Life & Environment, The Israeli Union of Environmental NGOs
* Herschel Sustainability Center (HSC)

and most importantly for adaptation/resilience

* Samuel Neaman Institute, Technion-Israel Institute of Technology,



The Ministry of Environmental Protection is currently developing a national action plan on adaptation to climate change. In order to help formulate policy and recommendations on the necessary measures to minimize vulnerability to climate change in different sectors, the ministry decided to establish the “[Israel Climate Change Information Center”](http://www.sviva.gov.il/Enviroment/bin/en.jsp?enPage=e_BlankPage&enDisplay=view&enDispWhat=Zone&enDispWho=knowledge_center&enZone=knowledge_center)in March 2011 (see Interview page 10). The goal of the Center during its initial stages of operation is ‘*to gather and coordinate the scientific knowledge available on climate change issues in Israel in seven areas: regional climatic forecasting, impacts of climate change on the water sector, urban planning and building, public health, biodiversity, the economy and regional geo-strategic issues’*. However, the political decision leading to budget constraints for the ICCIC is holding back its work which will be carried out at a slower pace.

## 3.2 Climate data management/modeling & sharing

* + - ***Climate data observation and their management***

Meteorological data measurements were regularly carried out over the last 100 years in Israel. Currently meteorological data measurements are done at hundreds of stations operate at several networks: the Israeli Meteorological Service operates a network of meteorological stations which includes 80 automatic monitoring stations. These stations measure temperature, precipitation and relative humidity. Most of them (about 70) also measures wind speed and wind direction; in addition, 12 stations measure sun radiation and 7 barometric pressure. The Ministry of Agriculture operates a national network of meteorological stations. This network[[2]](#footnote-2) includes 30 stations nationwide.

The network provides the farmers information regarding rain quantities, temperature, and wind. The Ministry of Environment, The Israeli electric Company, some Municipal Associations and other organizations are also operating air quality monitoring stations networks (~120 stations) in which some meteorological data suchas temperature, wind speed and direction and relative humidity are also measured. Partial station map can be found in the following link[*http://www.svivaaqm.net/Default.rtl.aspx*](http://www.svivaaqm.net/Default.rtl.aspx)

Meteorological station owned by private companies – the biggest private network of meteorological stations belong to "Meteo-Tech" which operates several dozen automatic stations as well as cloud radar and other systems.[*http://www.meteo-tech.co.il/about-eng.asp*](http://www.meteo-tech.co.il/about-eng.asp). Many other meteorological stations operated for various needs, such as research, aviation and monitoring of local agencies. Part of these stations data can be found in the following link: [*http://www.agri.huji.ac.il/weather\_data/Sensitive\_Map.htm*](http://www.agri.huji.ac.il/weather_data/Sensitive_Map.htm)*.* This map also contains additional stations such as marine stations which measures marine data such as wave height, water temperature etc.

The total meteorological information system of Israel is therefore composed of a wide network of measurement stations. Most of these stations are operated automatically and controlled at high level, in conformity to WMO standards. The only weak point is the fact that height measurements by radiosonde are routinely performed by a single station (Biet Dagan).

* + - ***Climate change scenarios/data sharing***

As described in the section above, climate data are widely accessible and shared among various services. The principle and practice of carrying out multidisciplinary research demonstrate high capacity with scenario modeling and data sharing which are reflected in the recent ICCIC 2011 and 2012 Adaptation reports.

Table (7): Assessment of climate data and climate data modeling

| Focus | Ref | Rating | COMMENTS |
| --- | --- | --- | --- |
| Climate observation networks | 5 | 4 | International standard of the meteorological network density and climate observation |
| Data management | 5 | 4 | Collection capabilities and data management of a high performance |
| CC projections & data modelling | 5 | 4 | High skills associated with high experience at national and international levels |
| Data use & sharing to identify vulnerability | 5 | 4 | Data shared as required |
| Data use & sharing to identify adaptation | 5 | 4 | High understanding of data use for adaptation identification |

## 

## 3.2 Socio-economic data related to climate change

Socio-economic data are managed by the “Central Bureau for Statistics” which is describing its work as follow: “*the work of the CBS follows internationally accepted standards which enable comparison of statistical information with other countries. It gathers current, monthly, quarterly and annually data on the national economy (production, consumption, capital formation, labor productivity, savings), the balance of payments and foreign trade, the activity of different economic branches (agriculture, manufacturing, construction, transport, commerce and services, etc.), the price of goods and services, the population, family size, employment, education, health, crime, government services and more. The CBS also conducts periodic and one-time surveys on a variety of subjects such as land use analysis, population density etc…. The data are disseminated in a wide variety of publications, among them the Statistical Abstract of Israel. Current and updated statistical information is brought to the public's attention through daily press releases. Government ministries use the data collected by CBS for policymaking, planning and tracking development. The data are also made available to academic research institutions and the general public”.*

Israel therefore offers a set of high quality data, in conformity with OECD standards, shared with all relevant stakeholders and relevant public.

Table (8): Assessment of Socio-economic data related to climate change

| Focus | Ref | Rating | COMMENTS |
| --- | --- | --- | --- |
| Availability of data for assessment | 5 | 4 | Large amount of technical and socio-economic data available |
| Data use for the identification of the vulnerability | 5 | 4 | Professional accessibility of the sectorial user |
| Data use for the vulnerability assessment | 5 | 4 | Sectoral initiatives done |
| Data use for the implementation of adaptation measures | 5 | 4 | Sectoral initiatives done |

## 

## Vulnerability assessment

The first report produced within the framework of the ICCIC was submitted to the Ministry of Environmental Protection in December 2011. The early findings reflect the current state of knowledge on the implications of climate change: the report surveys scientific research and professional studies in Israel and abroad, identifies knowledge gaps and makes recommendations on priorities for bridging these gaps (See box 1 below). It relates to forecasted climate changes in Israel over the next 50 years, per decade, and to the impacts of climate change on four areas: the water sector, public health, biodiversity, and urban building. In addition, the scientific knowledge in two multi-disciplinary topics is also surveyed geostrategic issues and the economy in Israel.

**Box 1: Among the main findings of the report**

*- Continued increase in average annual temperatures in Israel of between 0.3-.0.5°C per decade.*

*- Reduction in the average quantity of rain in Israel of between 1.1-3.7°C per decade.i'm not sure about that*

*- Increased desertification in the southern part of Israel.*

*- Increase in the duration and intensity of heat waves, which will increase risks to vulnerable populations.*

*- Increase in extreme events such as floods, which will result in damage to property and ecosystems.*

*- Increased probability of forest fires.*

*-Uncertainty with regard to the impacts on biodiversity, with a risk of increased numbers of invasive species and earlier migration periods of migrating birds.*

*- Necessity to adapt buildings and urban planning to conditions of increased temperature and flood risks and to develop the field of green building.*

*- Growth in migration waves to Israel, increased struggles over water sources, changes in sea level and impacts on civil and military facilities on the coast.*

*- Necessity for nature damage insurance.*

This report concludes that “these forecasted conditions will significantly impact on different sectors of the economy and are expected to impact on neighboring countries as well”.

Table (9): Appraisal of the vulnerability assessment

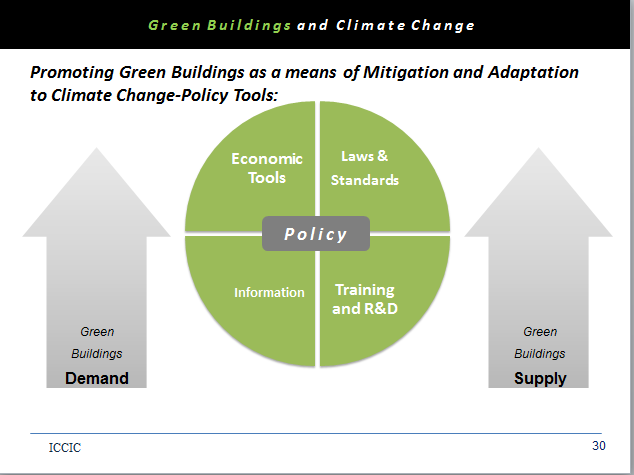
|  |  |  |  |
| --- | --- | --- | --- |
| Focus | Ref | Rating | COMMENTS |
| Initial identification of vulnerability exists at the national level? | 5 | 5 | Done |
| Initial assessments of the vulnerability at the sectoral level? | 5 | 5 | Done |
| Comprehensive assessments of vulnerability at the sectoral level? | 5 | 5 | Done |

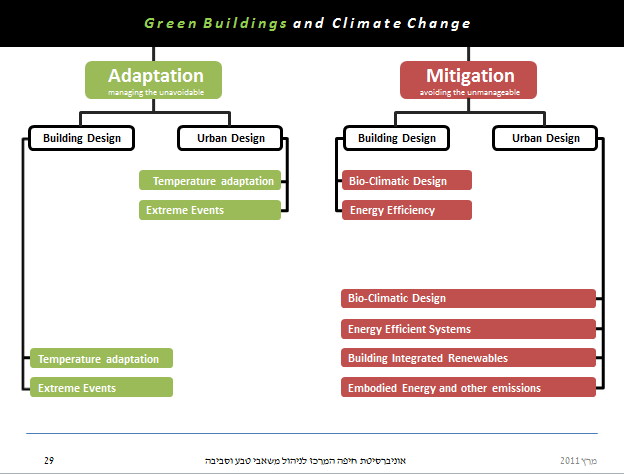
## 3.4 Adaptation to climate change

In the summer of 2008, an initial report on "*Israel's Adaptation to Global Climate Change"* was published, which addresses the anticipated impacts of climate change on Israel and presents interim recommendations on adaptation measures in each of the following sectors: water, agriculture, seas and coasts, public health, biodiversity, energy and the economy. A second ICCIC report “***Israel Adaptation to Climate change Policy Recommendations”*** presenting a concrete set of recommendations on climate change adaptation policy was submitted to the Ministry of Environmental Protection in August 2012.

**Box 2:** *The summary of Report 2 is complementary to Report 1 (Box 1 above) and focuses on the proposed national adaptation policy in the relevant areas and in detailed international marketing of the ICCIC activities….. All the various measures to cope with climate change were surveyed in order to determine the economic resources that should be invested, even if the effects of climate change turn out to be less severe. These options are defined as "No Regret alternatives"……specific policies are presented for water resources, public health, biodiversity and green building.*

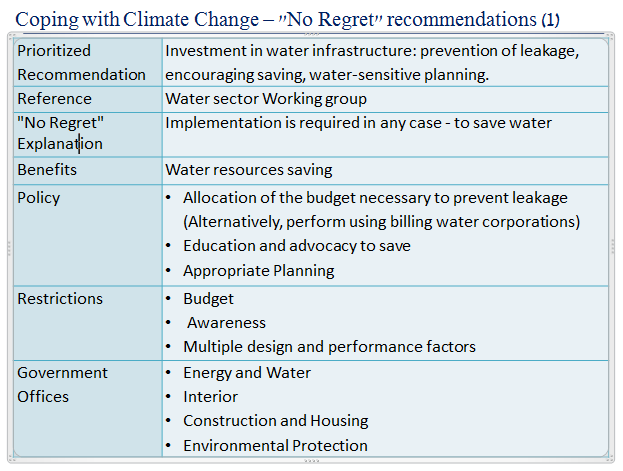
The analysis presented for Green Building policy (see Fig. 7) for example testifies a comprehensive understanding of **adaptation and mitigation** integrated analysis leading to a true resilience strategy.

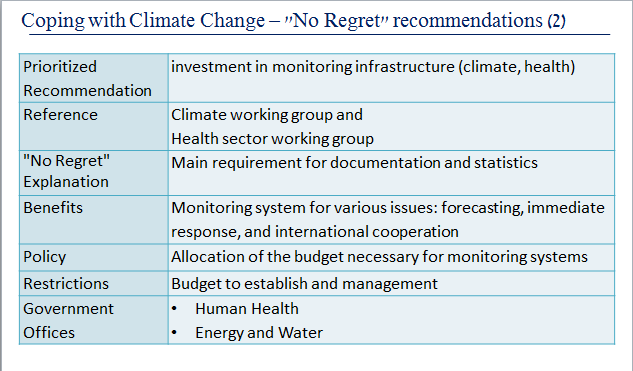
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**Fig (7) Adaptation to climate change, The case of Israel Green Building, June 2013, ICCIC**

The set of ‘No regret’ priority actions *(i.e. “justified regardless of the issue of climate change adaptation”*) were presented to the ENPI Team at a meeting in Haifa at the ICCC in June. They address three key issues linked to key climate change impacts and socio-economic Israeli priorities: (1) water management, (2) monitoring infrastructure (in particular in connection with heath impacts) and (3) a private/public insurance scheme. See summary of representations reproduced below.





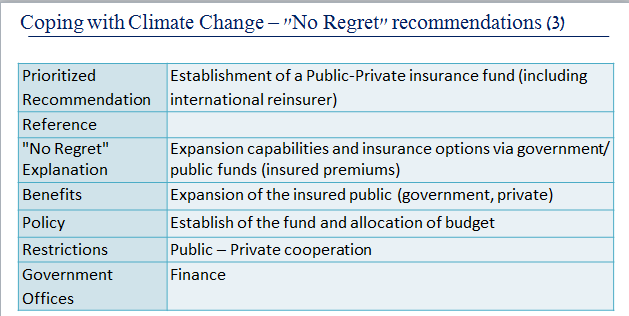


Table (10) presents the appraisal of the assessment of resilience to climate change in Isreal.

Table (10): Assessment of the adaptation to climate change

| Focus | Ref. | Rating | COMMENTS |
| --- | --- | --- | --- |
| National vision for adaptation to CC | 5 | 5 | Relatively clear vision for adaptation to CC |
| National strategy/programme /plan for adaptation to CC through addressing adverse effects and increase climate resilience | 5 | 5 | National strategy for CC is developed. Adaptation to CC measures are being further developed |
| Sectoral strategies for adaptation to CC or increase resilience | 5 | 4 | Sectoral strategies of adaptation to CC formulated |
| CC Mainstreaming / adaptation to CC in the strategic development planning process | 5 | 3 | Initiatives of mainstreaming CC but no structured and systematic methodological approach on this issue |
| Costing of adaptation to climate change | 5 | 3 | Initial assessment of adaptation to CC costing |

## 3.5 Access to finance for adaptation to climate change

Adaptation is not addressed in the National Plan for Reducing GHG Emissions, 2010 Even if funding for “adaptation” per se is not earmarked, as it is demonstrated in earlier sections, activities in the field of water, green building etc….will de facto contribute to improve the resilience of the population. The only lower rating identified is due to the fact that, as OECD member, Israel is not eligible to Developing countries adaptation funding mechanisms, therefore 2 of the questions were not relevant to this rating. Table 11 presents the assessment of access to adaptation to climate change finance in Israel.

Table (11): Assessment of Access to adaptation to climate change financing

|  |  |  |  |
| --- | --- | --- | --- |
| Focus | Ref | Rating | COMMENTS |
| Are stakeholders informed about funding for adaptation to CC? | 5 | 3 | Stakeholders are informed about potential options at national level |
| Are there any CC adaptation projects clearly identified? | 5 | 4 | Adaptation projects have been identified/ implemented and others are under development |
| Are these CC adaptation projects defined according to required format? | **-** | - | Not relevant |
| Do national capacities allow formulation of project document, according to the formats required by donors? | - | - | Not relevant |

## 3.6 Stakeholders awareness to adaptation to CC

The ministry for Environmental Protection has a very dynamic team promoting awareness rising, but mostly in the field of environment in general / sustainable environment; NGOs are also very skilled and active in awareness rising in particular at the city level but climate issues are not the specific focus; a general campaign on climate change/post Kyoto could certainly help promoting climate change issues which is totally coherent with other topic for concern (water, land use, heath etc….).

Table (12) reflects the assessment of the level of stakeholder’s awareness to adaptation to climate change.

Table (12): Assessment of level of awareness of stakeholders to adaptation to CC

|  |  |  |  |
| --- | --- | --- | --- |
| Focus | Ref | Rating | COMMENTS |
| Level of awareness of stakeholders to environmental challenges as well as CC/adaptation to CC. | 5 | 3 | Good degree of involvement of environmental stakeholders in the national dialogue; less obvious with the private sector |
| Level of awareness of Civil Society/NGO to environmental challenges as well as CC/adaptation to CC | 5 | 4 | Excellent level of NGO awareness |
| Do Stakeholders have a good understanding of adaptation to CC? | 5 | 4 | Initiatives of the ministry of the environment has create a good level of understanding |
| Has the civil society a good understanding of adaptation to CC? | 5 | 4 | Key civil society organization are very well aware; |

## 3.7 Mapping and synthesis of the results obtained

The analysis of the current situation and the needs for improvement was conducted according to the agreed set of criteria:

* Climate data and data modeling
* Socio-economic data in relation to climate change
* Vulnerability Assessment and formulation of adaptation options
* Access to adaptation to climate change financing
* Level of awareness of stakeholder to adaptation to CC

The main elements of this analysis are illustrated in Figure 7. The result show high to very high skills and capacity levels.

Fig 7: Analysis of the current situation

## 3.8 Targets for improvements of the current situation on adaptation

Taking into consideration the nature of the project (regional character, focused on capacities building,) the end of project targets is proposed below (see Fig. 8), where the reference level equals the Target level, since the current potential of Israel is very high. The highest needed efforts are for access to finance through financial engineering (public/private scheme etc….) which is consistent with a key win-win national priority.

Figure 8: Proposed situation at the end of the project

# 5. Conclusions

The CC institutional setup in Israel is highly developed, as well as the legislative and regulatory status regarding environment and CC (most EU regulations have been ‘transposed’ into national law). The country has a mature and effective operational commitment towards low carbon development, thanks to the development of specific policies and action plans and to the creation of dedicated center, authorities and organizations. Key findings:

* Israel has the status of Non-Annex 1 country under the UNFCCC, however after joining the Organization for Economic Co-operation and Development (OECD), Israel is committed to **modify its status** in the CC process, shifting to Annex 1 like status, or a post-2012 equivalents.
* **Data collection, management and assessment** for CC purposes is currently very well developed, with a wide experience of CBS and a medium commitment of the relevant institutions.
* Several Ministries have developed sector strategies for low carbon development however the **institutional coordination** could be enhanced.
* National plans exist for the promotion of **energy efficiency and renewable energy**, setting precise targets by 2020 could be a success.
* All main **Cities** have prepared **local action plans** to promote the low carbon development in their territories, within the Forum 15 Climate Convention umbrella.
* The **national perception** of the climate change issues could be improved, even though the civil society, above all NGOs, is implementing several initiatives for raising awareness on sustainability topics.
* Generally, Israel is not supported by external donors for classical climate change issues as developing countries are; they **will not ask for financial support for national activities**; they could certainly benefit from the regional trainings organized for the project; and
* Because **high expertise and skills can be found in Universities and NGO/think tanks, sharing/contributions could be envisaged** upon request.

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# Annex 1: LIST OF INTERVIEWED STAKEHOLDERS

|  |  |  |
| --- | --- | --- |
| GOVERNMENT OFFICIALS | | |
| Ms. Cohen-Ginat Ronnie | UNFCCC Focal Point, Division of Air Quality & Climate Change, Ministry of Environmental Protection P. O. Box 34033 Jerusalem, Israel 95464 | Tel: 972 2 6553936/778  Fax: 972 2 6553763  Mobile: 972 50 6233390  Email: [ronyg@sviva.gov.il](mailto:ronyg@sviva.gov.il) |
| Ms. COHEN Galit | Senior Deputy, Director General Planning and Sustainable Development, Ministry of Environmental Protection Jerusalem | Tel +972 2 6553862  Fax +972 2 655 3853  Email: [galitc@sviva.gov.il](mailto:galitc@sviva.gov.il) |
| Mr. Abudi Idan | Ministry of Transport and Road Safety (MTRS), Head of energy, fuels and environmental protection department | Tel +973 3 5657106  Mobile +973 506212854  Fax +973 3 5657102  Email [abudi@mot.gov.il](mailto:abudi@mot.gov.il) |
| Dr. WALD Sholomo | Ministry of Energy and Water – Chief Scientist, 14 Hartom st. Har Hotzvim, P.O. Box 36148, Jerusalem 9136002 | Tel +972 2 5316121  Fax +972 2 5316017  Email: [sholow@energy.gov.il](mailto:sholow@energy.gov.il) |
| Dr. Yanai Moshe | Head of the Agriculture and Environmental Statistics Sector - Economic Infrastructure Department, Central Bureau of Statistics - Jerusalem | Tel: 972 50 6235364  Email: yanaim@cbs.gov.il |
| **ACADEMIA / CIVIL SOCIETY- NGOs** | | |
| Ms . SAGI Linor | Project manager, Forum 15 , Israeli Forum of Self Government Cities - Tel Aviv | Tel +972 3 6844236  Mobile: +972 50 5243874  [linor@forum15.org.il](mailto:linor@forum15.org.il) |
| Ms. Givon Maya | Life & Environment - Israeli Union of environmental NGOs, Sustainability & Climate Change Coordinator, Tel Aviv | Phone +972 3 560 2256  Fax+972 52 4739155  E-mail [climate@sviva.net](mailto:climate@sviva.net)  URL: [www.sviva.net](http://www.sviva.net) |
| Dr. RONEN Orli | Executive Director, Heschel Sustainability Center – Nachalat Binyamin st 85 - Tel Aviv 66102 | Tel+ 972 3 5608788  Fax +972 3 5609091  Email: orli@heschel.org.il |
| Prof. Ayalon Ofira | Head of Environment Cluster [Samuel Neaman Institute](http://www.neaman.org.il/) - Technion Director, Natural Resource & Environmental Research [Center](http://nrerc.haifa.ac.il/about.htm) . University of Haifa  Tel/Fax: 972-4-8292190 | Phone +972 4 8292190.  Fax +972-4-8231889 Email ofira@sni.technion.ac.il  [aofira@gmail.com](mailto:aofira@gmail.com) [agofira@tx.technion.ac.il](mailto:agofira@tx.technion.ac.il) |
| Mr. Segal Noam | Israel Energy Forum - Tel Aviv | Phone: 03-6224777 |
| Mr. Twite Robin | Israel/Palestine Center for Research and Information, Director Environment and Water Department | Phone: +972 26769460 Email: [robin@ippcri.org](mailto:robin@ippcri.org) |
| **Technical & Financial partners** | | |
| Ms. MEIR Alexandra | Delegation of the European Union  Scientific Section, Policy Officer  Paz Tower, 16th floor 5-7 Shoham street | Tel +972 3 600 0911  Fax +972 3 613 7770  Email:  [Alexandra.meir@eeas.europa.eu](mailto:Alexandra.meir@eeas.europa.eu) |

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# Annex 2: LIST OF COLLECTED & CONSULTED DOCUMENTS

CIRCLE Climate Impact Research Coordination for a Larger Europe - <http://www.circle-era.net/>

Climate Change Mitigation in Israel, Nov. 2012

Climate Change Policy in Israel, Nov. 2011

GLOWA Jordan River - <http://www.glowa-jordan-river.de/>

Greenhouse Gas Reduction Action Plan, Israel Environment Bulletin, Vol. 37, Sept. 2011.

Israel National Report on Climate Change, First National Communication to the Conference of the Parties to the UNFCCC, Jerusalem, November 2000.

Israel Preparations for Global Climatic Changes, Phase I, The implications of climate changes on Israel, and interim recommendations, Irit Golan-Engelko & Yeshayahu Bar-Or Jerusalem, July 2008.

Israel Adaptation to Climate Adaptation to Climate Change Policy, ICCIC 1st Report, Executive Summary, November 2011.

Israel Adaptation to Climate Adaptation to Climate Change Policy Recommendations, ICCIC 2nd Rapport, Executive Summary, August 2012.

Israel's Second National Communication on Climate Change, November 2010.

KKL-JNF, Global Warming: <http://www.kkl.org.il/kkl/english/main_subject/globalwarming/>

National Energy Efficiency Program - Reducing Electricity Consumption 2010-2020, Ministry of National Infrastructures, 2010.

Policy on the Integration of Renewable Energy Sources into the Israeli Electricity Sector, Ministry of National Infrastructures, February 2010.

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# Annex 3: LIST OF ON-GOING CC PROJECTS

|  |  |  |
| --- | --- | --- |
| Bilateral Projects | Status | Agency |
| Israel-U.S. Binational Industrial Research and Developmen joint renewable energy development | ongoing | U.S Department of Energy, MNI & BIRD Foundation |
| Horizon 2020 – Solid Wastes Landfill Mining and Reclamation | ongoing | EU/MeHSIP PPIF |
| Desalinisation Plant | ongoing | EU/ EIB |
| Establishment of an "Energy Efficiency Centre" in Israel  Sector: Environmental research | ongoing | EU |
| Strengthening the Capacity of Local Authorities for Ecological Modernisation | ongoing | EU |
| Pollutant Release and Transfer - Registering and Reporting Obligation (PRTR) TAIEX Programme | preparation | EU TAIEX |
| **Regional Projects in which Israel is involved** | **Status** | **Agency** |
| MED-EMIP - Euro-Mediterranean Energy Market Integration Project | ongoing | EU |
| Cooperation in Urban Development and Dialogue (CUIDAD) Sustainable Urban Development | ongoing | EU |
| MED-ENEC II - Energy efficiency in construction | ongoing | EU |
| MED-REG II– Energy regulators | ongoing | EU |
| MEDSTAT III - Statistical cooperation (with on component on energy statistics) | ongoing | EU |
| Sustainable Water Management and De-pollution of the Mediterranean | ongoing | EU |
| Paving the Way for MSP | ongoing | EU |
| CIRCE: Climate Change and Impact Research: the Mediterranean Environment | ongoing | EU |
| Combined solar power and desalinisation plants: technico-economic potential in Mediterranean countries (MED-CSD). | Approved | EU-FP7 |
| Climate Change, hydro-conflicts and Human Security (CLICO). | ongoing | EU-FP7 |
| Data Repositories and Computational Infrastructure for Environmental and climate studies in the Eastern Mediterranean (DARECLIMED). | ongoing | EU-FP7 |
| Mediterranean Sea Acidification in a changing climate (MedSea) | Ongoing | EU-FP7 |
| FEMIP Supports FEMIP’s efforts to promote sustainable economic growth in the Mediterranean Partner Countries through investments in infrastructure and especially in private sector development | ongoing | EU |
| Combined solar power and desalinisation plants: technico-economic potential in Mediterranean countries (MED-CSD). | ongoing | EU-FP7 |

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# Annex 4: LIST OF POSSIBLE ACTIVITIES

**Communication**

* Support to NGOs active in fighting against climate change, and promote cooperation among NGOs in the region (oPT, Jordan, Lebanon, Egypt)
* Support the ICCIC for information and knowledge sharing and management on adaptation at regional level, to become an excellence centre in accordance with the provisions of the UNFCCC Cancun Agreements - **Wait for comments from Chief Scientist office**
* Discussions with EU on climate change negotiations and understanding actual measures being taken for reducing GHG emissions
* Public awareness raising – information campaigns
* Enhancing knowledge of and cooperation between decision makers (in government, local authorities, industry) for implementation of long term mitigation policies

**Low carbon development**

* Institutional strengthening for the development of strategic planning tools for both mitigation (capacity to elaborate a National Low Emission Development and Climate Resilient Strategy) - **Wait for comments from Chief Scientist office**
* Capacity building on specific MRV requirements (switch to Tier 2 IPCC Guidelines for the establishment of national inventories**); a TAIEX programme is now under preparation for the National Inventory Report – Duplication?**

**Resilience**

* Training of the Ministry of Environment and other relevant administrations on ecosystem-based approaches to climate change. **Wait for comments from Chief Scientist office**
* Support the engagement of the Forum of 15 (municipalities) and build capacity to join the Covenant of the Mayors

1. A qualitative assessment is carried out by assigning a level to each analysis element state as follow: [1] Very low [2] Low [3] Average [4] Good [5] Very Good [↑](#footnote-ref-1)
2. Station map can be found in the following link <http://www.meteo.co.il/> [↑](#footnote-ref-2)