

Infrastructure

## Infrastructure





2007 · 2013

<u>Support to economic recovery: local development, reconstruction and rehabilitation of infrastructures</u>

#### € 8 775 000

In continuation of a similar project committed in 2006 (see here under for more details), this project aims at contributing to a prompt and efficient recovery of the most affected regions in Lebanon after 2006 war with Israel. The priority domains of intervention remain the enhancement of public infrastructures, and the support to local development initiatives (and in particular to small and medium enterprises).

- Construction of road networks and retaining wall in the Municipalities of Yohmor, Taybeh and El-Arkoub (South Lebanon)
- Construction of irrigation canal in Khiam, drainage canal in Nabatieh and rehabilitation of a rainwater collection pond in Bent Jbeil.
- Construction of Municipality Building in Chakra
- Extension of drainage network in Nabatieh
- Construction of solid waste facility in Nabatieh & Marjaoun

In order to cover additional projects identified during the 2006 identification mission the EU signed on the 16th of August 2007 a second financing agreement with the CDR for an amount of 8.775.000€. During 2008 a selection was made out of a reserve list identified during the 2006 EU Damage Assessment mission. The implementation of the 4 first projects here above has taken place from 2010 till end of 2012. The construction of the solid waste facility in Nabatieh encounters delays but should be finalised by the end of 2013.

#### 2007

### **SME Energy Facility**

#### € 14 700 000

The overall objective is to create incentives for small and medium enterprises investments in energy savings and renewable energies technologies by providing investment facilities.

The project has two components:

- 1- A grant awarded to Banque du Liban (EUR 12.2 million): The project aims at subsidising the borrowings of SME willing to invest in renewable sources of energy or in energy savings. SME belonging to the sectors of agriculture, industry, tourism, craft manufacturing and high technologies receive (through Banque du Liban) a subsidy equivalent to 5% of their borrowing from commercial banks. SME belonging to other sectors receive a subsidy of 15%. BDL subsidises borrowings up to USD 1 million.
- 2- A grant awarded to KAFALAT: (EUR 2.5 million): The project aims at creating a new fund within KAFALAT called «KAFALAT Energy». KAFALAT gives already guarantees to energy projects in the five above-mentioned sectors for borrowings up to USD 400.000 and durations up to 7 years. This fund allows for the extension of the guarantees to projects up to ten years, since the payback period of projects in energy savings and renewable sources of energy is sometimes longer than 7 years. The total amount for the «KAFALAT Energy Fund» is EUR 2.3 million The technical assistance contract focuses on training to commercial banks, Kafalat and BDL personnel on energy efficiency and renewable energy domains.

Borrowings up to USD 400.000 in the five above-mentioned sectors could benefit from both the subsidy of BDL and the guarantee of KAFALAT.

2006

### Support to economic recovery and reconstruction of Lebanon € 11 365 000

The project aims at contributing to a prompt and efficient recovery of the most affected regions in Lebanon after 2006's war with Israel. The priority domains of intervention are enhancing public infrastructures and socioeconomic development.

In September and November 2006 the EU executed an identification mission on the impact of the August 2006 conflict. After an interactive process between the EU and the beneficiary, the below mentioned projects were agreed on for financing. The implementation of the second and third project has taken place from 2010 till end of 2012. The construction of three waste water treatment plants in South Lebanon is on-going, and should be finalised by 2014.

- Construction of a Wastewater Network System and three Wastewater Treatment Plants in South Lebanon
- Construction of a water reservoir, water distribution networks and drilling of two boreholes in South Lebanon
- Construction of Public Buildings in Six Municipalities in South Lebanon



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## BGR - Protection of Jeita Spring (July 2010 - December 2013) € 1700 000

This Technical Cooperation project, funded by BMZ, is implemented on the German side by the Federal Institute for Geosciences and Natural Resources (BGR). Lebanese partners are: the Council for Development and Reconstruction (CDR), the Water Establishment Beirut and Mount Lebanon (WEBML) and the Ministry of Energy and Water (MoEW). The project is closely coordinated with a German Financial Cooperation project with the same name working in the same area, implemented by KfW development bank. Project duration: 3.5 years (07/2010 - 12/2013). Funding: 1.7 Mio EUR.

Rationale: The water of Jeita Spring provides the major source of drinking water for Beirut and surrounding districts. Pollution of this spring has occurred in the recent past and is puts the water supply of Beirut at risk. The major threat of pollution arises from infiltration of untreated wastewater into the karst aquifer. The pollution risk can be reduced by implementing wastewater projects which integrate geoscientific aspects into the planning process and by delineating and implementing groundwater protection zones.

**Project aim:** Major Risks for the Drinking Water Supply in the Greater Beirut Area are reduced by implementing measures to protect the groundwater catchment basin of the Jeita Spring from pollution.

Project tasks (Jeita catchment only):

- Integration of water resources protection aspects into the investment planning and implementation process in the wastewater sector (planning of KfW/CDR wastewater facilities);
- Integration of water resources protection aspects into land use planning (establishment of groundwater protection zones);
- Collection and use of monitoring data concerning quality and quantity of water resources (including advice concerning water resources management options);
- Support of the partner institutions concerning the implementation of urgent protective measures;
- Sensitisation of the population concerning risks of water pollution and connection to the sewage system.

## Infrastructure



#### **Achievements:**

- Site selection process for Jeita WWTP finalised; proposed EIA guideline jointly implemented in KfW wastewater project; wastewater reuse standard and guideline proposed; wastewater BMP proposed.
- Groundwater catchment delineated (tracer tests); groundwater protection zones delineated; inventory of groundwater hazards compiled.
- Monitoring system of water balance components and water quality installed; water balance established including WEAP model; water resources management options proposed.
- Constructive measures proposed for improved Jeita spring capture and water conveyance to treatment plant Dbayeh.
- Awareness campaign for groundwater protection conducted at all major schools (7000 pupils, classes 8-12) in the catchment.

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#### 2008 -2014

### GIZ - Assistance to the Water Sector Reform (2008-2014) € 8 000 000

In 2000 Lebanon began a process of water sector reform by adopting a new Water Law. Since 2005 twenty-one water authorities have been merged to form four public Water Establishments (WEs) under the Ministry of Energy and Water (MEW). Responsibilities for wastewater management and investment projects were also transferred to the WEs. However, the implementation of the reform is still on-going and further assistance is required to enable WEs to provide reliable water supply and wastewater services to the population of Lebanon.

GIZ is implementing this project on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ). On the Lebanese side the main partners are the MEW and the four WEs. The concept of the project is to improve the performance of the WEs while helping the MoEW to assume its regulatory role. Advisory services to WEs emphasize on business planning, organisational restructuring, customer relations, and introducing water metering together with consumption-based tariffs. In addition, WEs are prepared for taking over new tasks related to wastewater management.

The overall duration of this project is from February 2008 until April 2014.

Objectives: The overall objective is to establish efficient and professional water supply and wastewater service providers who are regulated by the MEW. Specific objectives are:

- Strengthening of the capacity of the MEW to support and regulate WEs.
- $\bullet \ Strengthening \ of \ technical \ and \ management \ capacities \ in \ all \ of \ the \ four \ WEs.$
- Improvement of relations between customers and WEs.

#### Achievements to date:

- Under the leadership of MEW, the first National Strategy for the Water Sector in Lebanon has been finalised and approved by Parliament in March 2012.
- Three out of four Water Establishments managed to develop 5-year business plans which support gradual achievement of objectives set in the national strategy.

- Since mid-2009, Water Establishments apply an agreed set of performance indicators on a quarterly basis. This allows comparing the performance of WEs and supports MoEW in assuming its regulatory functions.
- In 2011 the management of all WEs agreed on main principles for introducing consumption-based tariffs. Based on readings of newly installed customer water meters in selected areas, reliable data about water consumption are available since end of 2010. This will be used to gradually introduce consumption-based tariffs.
- In 2012 the management of three WEs developed new organizational structures and internal by-laws which are in line with international standards.
- In South Lebanon Water Establishment, a customer service and call centre is operational since mid-2011 and responsible for handling enquiries and customer complaints.

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2007 - 2013

<u>Support to Border Security and Border Management Project; General Security, Lebanese Customs, Internal Security Forces.</u>

€ 5 257 868

2007-2012, additional support planned for 2013



Reconstruction and Upgrading of the Lebanese Coastal Radar; Lebanese

Maritime Forces

€ 4 166 240

Pedestrian bridges construction in Beirut, Saida and Tripoli € 940 000

A grant of EUR 940 000 was allocated in 2009 to the Lebanese Ministry of Transports and Public Works, the later having undertaken the implementation of the Project

The Project consists of the construction of four high standards pedestrian bridges, located at Sports city and Tayyouni areas in Beirut, Saida and Tripoli, and three to four others with regular standards.

Objectives: To facilitate pedestrians crossing busy roads

Achievements: Inauguration ceremony for the pedestrian bridges in Tayyouni and Sports City (Beirut) was held in August 2012

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2009 -2012 Renewable energy project

€ 390 000

The Project was implemented under the leadership of UNDP-Lebanon in cooperation with the Lebanese Ministry of Energy and Water. It consisted of the following components:

- Installation of 90.000 energy saving lamps in 10.000 houses in South Lebanon
- Procurement of testing equipment for solar collectors

Objectives: To promote renewable energy capacity in Lebanon

Achievements: Project completed. Another component may be added in the future

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Water and sanitation

€ 11 233 241 as a grant and € 76 127 539 as soft loan

ICT for water resources management (€ 850 000 as grant)

Implemented by: Lebanese Government and Direct Management

The action provides assistance to the Ministry of Energy and Water in water basins management, with a particular focus on cross border basins. In particular, the project assists the Ministry to improve its know-how of water resources management and its technical capacity to introduce appropriate technologies (multitask detection stations) in Lebanon major cross border rivers. Also, at strategic level, the project strengthens the programming capacity of the Ministry to plan the use of water for agriculture and for civil purpose.

Water supply networks in Dannieh, Koura, Kalaman and Faouar (€ 9 000 000 as grant)

Implemented by: Lebanese Government

The project aims to improve hygienic and health conditions of the population in target areas. Such intervention, as a completion/ integration to the previously achieved works – from 1996 till 2001- by the Ministry of Energy and Water, falls under Paris III initiatives and is included in the Agreement named "Recovery, Reconstruction and Reform" signed between the Lebanese Government and the Italian one in November 2007. The action is providing the special infrastructural intervention required by the mountainous area, also in the view of reducing the migration rate of the inhabitants toward the neighbouring coastal zones and/or abroad. Although the region is very rich in terms of underground water, the current availability of water is still very limited caused by the lack of water distribution networks. The water supply scheme could be divided into 7 main lots, of which two will be completed.



Implemented by: Lebanese Government

This action is aimed at improving hygienic and health conditions of the population in targeted urban areas. The direct beneficiaries will be the inhabitants of the region who do not have access to drinking water and whose need will be satisfied by the provision of the comprehensive infrastructure that includes the building of water pumping stations, the connection to the drinking water plants, the construction of water basins and new wells and the installation of the piping and purification systems.

Programme for water supply and wastewater treatment in the province of Jbeil (€ 39 089 097 as soft loan and € 1 126 050 as grant )

Implemented by: Lebanese Government

The intervention foresees the rehabilitation and the construction of basins and distribution networks, the construction of pumping stations and wells, and rehabilitation and protection of transmission lines. In addition, the project includes the construction of a wastewater treatment plant in Qartaba with its related piping network, for a daily capacity of .435 m3.

Wastewater purification plant in Zahle (€17 287 913 as soft loan and € 103 291 as grant)

Implemented by: Lebanese Government

This project foresees the construction of a wastewater treatment plant in Zahle (nearly 205.000 people will benefit from this project and capacity equal to 37,300 m3/ day) with a range of about 12km of sewage trunks and sewer access roads.

Hrajel and Michmich waste treatment plants & sewage system (€ 13 839 384 as soft loan and € 153 900 as grant)

Implemented by: Lebanese Government

The objective of the intervention is the abatement of environment pollution and geological water sources contamination and the strengthening of the management capacities of water authorities in targeted region. In Hrajel (Mount Lebanon) and Mishmish (North Lebanon), only parts of the urban conglomerates are connected to the sewage network and there are no purification systems. The area will be provided with 44 km of sewage pipes and two water treatment plants. Besides the concerned communities, the intervention will benefit also the population of Beirut, whose main water source is put at risk from Mount Lebanon contamination factors.



Sanitation Keserwan € 70 000 000 (loans)

The project foresees the development of an integrated sanitation system in Keserwan, through the construction, on both sides of the Jounieh bay, of two wastewater treatment plants, two long outfalls in the sea with coastal distributors and interceptors for the transfer of collected wastewater to the water treatment plants. This project will help face the current environmental emergency in the Caza of keserwan, percolation area of the Jeita Source water (providing 60% of Beirut)s water supply) and one of the main industrial and touristic basins of the country.

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The project will have an economic and social impact on the sanitary conditions which will be improved and the quality of water sources which will be protected and will help thus reduce waterborne diseases. The environmental impact of this project will be significant, in terms of protection of the karst massif water resources in Keserwan, elimination of direct effluent discharges I the Mediterranean, through coastal collection networks and promotion of the water courses environmental status.

France has granted a loan of 70 Million Euro as a co-funding with the European investment bank (roughly 70 Million Euro) and the European Commission (10 Million Euro grant in the framework of the Neighbourhood Investment Facility). The construction works of the two wastewater treatment plants and the related networks are scheduled to take place between 2014 and 2018.

### Sanitation Programme North Lebanon

#### € 30 000 000 (loan)

The water supply and treatment project in North Lebanon promotes the sustainable management of the environment and water resources and the rationalisation of the operations in this sector, specifically through the connection of the installed wastewater treatment plants. The project will be finalised in 2013, thanks to the connection of the funded wastewater treatment plants in Batroun and chekka.

By contributing to the improvement of the drinking water public distribution service, weakened by the war, the protection of the degraded environment and the integration of the sanitation systems, the project should have a major economic and social impact. The sustainability of these interventions depends on the operating and maintenance conditions which will be secured on the long run, the billing conditions of the sanitation service and financial independence of the Water Establishment of North Lebanon.

This project was developed with the Council for Development and reconstruction – associating the Water Establishment of North Lebanon and municipalities – to whom France has granted a soft loan of 30 Million Euro.

### The development of a hydroelectric master plan in Lebanon

#### € 591 552

This study aimed at developing a master plan for hydroelectric production in Lebanon. It helped develop an inventory and a mapping of water resources in Lebanon and measure the potential and cost of hydroelectric generation. Thanks to this study, the Lebanese authorities were able to identify the priority hydroelectric projects.

The French company ARTELIA EAU & ENVIRONNEMENT and its Lebanese partner COGIC conducted this study for the Ministry of Energy and Water.

The first two phases of this study were funded by a grant of 431 787 € from the French government in the framework of the Fund for Research and Aid to the Private Sector (FASEP) of the Treasury General Directorate of the French Ministry of Economy and Finance. Detailed studies of the hydropower potential in the site of Janneh were initiated in February 2013 thanks to an additional 160 765 EUR grant from the FASEP.

# <u>Evaluating the feasibility of a collective transport system between Beirut</u> and Jounieh

#### € 718 713

This study that was completed in April 2012 allowed assessing the feasibility of the establishment and operation of a railway line along the Lebanese coastline (linking Beirut and Jounieh).

The French Group EGIS INTERNATIONAL conducted this study for the Ministry of Public Works and Transport and the Council for Development and Reconstruction (CDR).

This project was funded by a 718 713 € grant from the French government in the framework of the Fund for Research and Aid to the Private Sector (FASEP) of the Treasury General Directorate of the French Ministry of Economy and Finance. The contribution of the CDR amounted to 76 100 €.



2008-2013

Community Energy Efficiency and Enewable Energy Demonstration Project for the Recovery of Lebanon

#### € 5 761 250

- The main objective of the CEDRO project is to support Lebanon's recovery, reconstruction and reform activities and to complement the national power sector reform strategy through the implementation of end-use energy efficiency and renewable energy projects, removing the barriers for the promotion of sustainable energy applications in Lebanon. To achieve this, the project will work on three levels: the first involves the establishment of a demonstrative model addressing public sector building and facilities, the second involves the activation of the replication process, and the third involves the triggering of a national sustainable energy strategy and action plan. The CEDRO project is financed through the Lebanon Recovery Fund and is in-line with Lebanon's ongoing efforts to improve national patterns of energy consumption and cost.
- The key outputs of the CEDRO project include: 1) installation of energy efficiency and renewable energy equipment and systems in public sector buildings and facilities; 2) increased public sector awareness and knowledge on energy efficiency and renewable energy applications; 3) availability of validated data on reduced energy consumption and cost; and 4) establishment of relevant policies and procedures to enable the continued implementation of sustainable energy measures in public sector buildings and facilities.
- The CEDRO project builds on the objectives of the Ministry of Energy and Water to meet increased national energy demand, and the objectives of the Ministry of Finance to reduce government financial burdens.
- The project's main national implementing partners are: the Council for Development and Reconstruction, the Ministry of Energy and Water, and the Ministry of Finance, who are parties to the project formulation and approval, as well as parties to strategic decision making and evaluation throughout the project lifetime.

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