Funded by the European Union

Implemented by AFD

long term technical assistance

EU-AFD TECHNICAL ASSISTANCE PROGRAMME TO SUPPORT REFORMS IN THE WATER AND WASTEWATER SECTORS IN LEBANON

Contract CLB1105 – Funded by UE-AFD - Lot 2

_____

Diagnosis of NLWE - North Lebanon Water Establishment – Organization and Human Resources

December 2022 modified February 2023

ASPA UTILITIES

8 rue Claude Monet
32000 Auch – France

sce
Aménagement & environnement

4 rue Viviano
44282 Nantes – France

CONTENT

TABLES AND FIGURES

ABREVIATIONS

AFD	Agence Française de Développement
AWO	Autonomous Water Office
BOT	Build, Operate and Transfer
BMLWE	Beirut & Mount Lebanon Water Establishment
BWE	Bekaa Water Establishment
CAPEX	Capital Expenditures
CAS	Central Administration of Statistics
CDR	Council for Development and Reconstruction
DBOT	Design, Build, Operate and Transfer
EDL – EDK	Électricité du Liban – Electricité de la Kadicha
HR	Human Resources
IT	Information Technologies
LBP	Lebanese Pound
LC	Local Committee
LRA	Litani River Authority
LTTA	Long-Term Technical Assistance
LWP	Lebanon Water Project
MHER	Ministry of Hydraulic and Electrical Resources
MoEW	Ministry of Energy and Water
NLWE	North Lebanon Water Establishment (Also referred as EELN – Établissement des Eaux du Liban Nord)
NRW	Non-Revenue Water
NSWS	National Strategy for the Wastewater Sector
NWSS	National Water Sector Strategy
O&M	Operation and Maintenance
OPEX	Operational Expenditures
PPP	Public-Private Partnership
RSR	Registered Syrian Refugees
WE	Regional Water Establishment
SCADA	Supervisory Control and Data Acquisition
SLWE	South Lebanon Water Establishment
UN	United Nations
WHO	World Health Organization
WSS	Water Supply and Sanitation
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

1 EXECUTIVE SUMMARY

The "Technical assistance programme to support reforms in the water and wastewater" of Lebanon is funded by the European Union and implemented by the AFD (Agence Française de Développement). Within this overall context, ASPA/SCE was contracted by AFD to carry out an assessment, focusing on the identification of organizational and human resources (HR) issues which affect the four Regional Water Establishments (WEs) of the country, to elaborate operational action plans and road maps for each WE.

The present report aims at presenting a diagnosis of the current situation of the North Lebanon Water Establishment (NLWE). It is based on a detailed review of existing documentation and data, consolidated by technical visits to the main actors of the Lebanese water sector (November 2022), including NLWE.

It presents a general review of the national context and of the current performances of NLWE, before identifying gaps and challenges of peculiar relevance for the further steps of the assessment, i.e., the establishment of recommendations related to the internal reorganization of the utility and its HR management.

Main findings

- The reform of the national water sector framework is incomplete. Decisions on the exact role expected from the WEs are required before addressing the organizational structure and the needs of personnel of each establishment.
  - Relationship with the tutela of the Ministry of Electricity and Water (MoEW).
  - Interfaces with other actors such as the CDR (Council for Development and Reconstruction) and the municipalities. What is the commitment of the WE about sewerage collection and treatment? Also, about irrigation?
  - Lack of objectives clearly set-up and monitored through performance indicators.

  In short, is it not possible to determine the detailed organizational framework and to address the RH issues of an WE before having a clearer "delegation contract" which defines the role of the entity.
- The status of the WEs is unclear. The original spirit of the Law 221-2000 was giving a status of independent organization, self-sufficient in terms of finance and autonomous in terms of internal administration. This spirit has been jeopardized by subsequent legal decisions. The application of the rules defined by the Public Service Council for organizational chart, personnel recruitment, and HR management are incompatible with the activity of an operating company.

  It might be clearly decided which model to be followed by the WEs. Is NLWE a "company" (although owned by the State) or a "public authority"?
- The available information is poor. This penalized the accuracy of a 360º diagnosis of the utility, before scrutinizing the HR issues.
- The present organization chart, established by law, does not comply with the requirements. Some activities are totally or partially missing such as wastewater, irrigation, communication, customer service, HR, water resource management, IT, health and safety, NRW control, etc.
- NLWE is facing many difficulties related to human resources: retirement without replacement, resignations of skilled personnel due to better offers in the private sector, recruitment prohibited since 2017, and the recruitment process submitted to the control of the Public Service Council.
- Obviously, financial issues are also at the root of many difficulties. The present national crisis emphasizes, up to a critical stage, problems that already existed before the crisis. Organizational charts and HR management in WEs must be thought on a long-term basis, as part of the revision of the overall national water sector framework.

2 INTRODUCTION

2.1 OBJECTIVE OF THE PRESENT REPORT

The "Technical assistance programme to support reforms in the water and wastewater" of Lebanon is funded by the European Union and implemented by the AFD (Agence Française de Développement).

Within this overall context, ASPA/SCE was contracted by AFD to carry out an assessment, focusing on the identification of organizational and human resources issues that affect the four Regional Water Establishments (WEs) of the country, to elaborate operational action plans and road maps for each WE.

A diagnosis report of the current situation of North Lebanon Water Establishment (NLWE) has already been prepared by the Long-term Technical Assistance (LTTA) contracted by AFD for the overall Technical Assistance Programme to Support Reforms in the Water and Wastewater.[1]

The present document intends to consolidate the previous LTTA's diagnosis with additional information gathered through the meetings and technical visits carried out in November 2022. It focuses on the specific topics which are at the heart of ASPA's assessment.

As such, Chapter 3 summarizes a general review of NLWE's current situation. Chapter 4 addresses more specifically the challenges in terms of human resources management.

Chapter 5 intends to identify key issues that will have to be discussed with NLWE in meetings focused on the review of the HR management of the utility. As well, Annex 6.8 suggests a generic organizational chart to be used as a starting basis when investigating the more appropriate structure for NLWE.

A workshop will be organized with the management of the WE to present and discuss the findings of the present report.

2.2 OVERVIEW OF THE NATIONAL CONTEXT

2.2.1 Overall framework of the water sector

Up to the year 2000, Lebanese drinking water services were managed by 22 Water Boards and 209 Local Committees.

The situation before 1999

Over time, Mesopotamian, Roman, Ottoman, and French water laws came to cohabitate with Muslim customs and practices and traditional Arab social water arrangements in Lebanon.

Customs and practices were constituted by various rules relating more to common sense than anything else and were recognized over time and given approval by legislators. It was not until the Ottoman reforms of 1839 and the publication of the Mejelleh Code, published by the Ottoman Empire in 1877, that a large part of the prevailing customs and habits was transformed into juridical texts.

The period of the French Mandate over Lebanon (1920– 1943) witnessed the adoption of two fundamental texts related to the protection and utilization of public water (Orders 144-S/1925 and 320/1926), which led to the involvement of French engineers via the inauguration of large-scale hydraulic projects and concession contracts that were put in place as part of their 'mission hydraulique'.

[1] AFD (2022). *Initial Diagnostic of the Water Establishments – Data collection and diagnosis report – NLWE*, Consultants Hydroconseil-Hydrophil-VA, Revised Edition, July 2022.

After Lebanon gained independence in 1943, a General Directorate of Hydraulic and Electric Affairs was placed in the hands of the Ministry of Public Works. This situation remained unchanged until 1966, when the Ministry of Hydraulic and Electrical Resources (MHER) was established. Following the creation of the Beirut Water Office since 1951, 2 other Autonomous Water Offices (AWOs) were created to improve potable and irrigation water services to consumers. Decree 4517/1972 governed the organization of the AWOs and their relations with the MHER. This period also saw the creation of the Litani River Authority (LRA) in 1954. More than two hundred Local Committees (LCs) were created along the 1980s to cover the absence of government management of water resources. The LCs were nominally placed under the tutelage of the AWOs. The exploitation of potable water was regulated in 1983 (Decree 108/1983). In 1990, after fifteen years of civil war, the management of water resources was challenged with wrecked infrastructure and a completely disorganized administration.

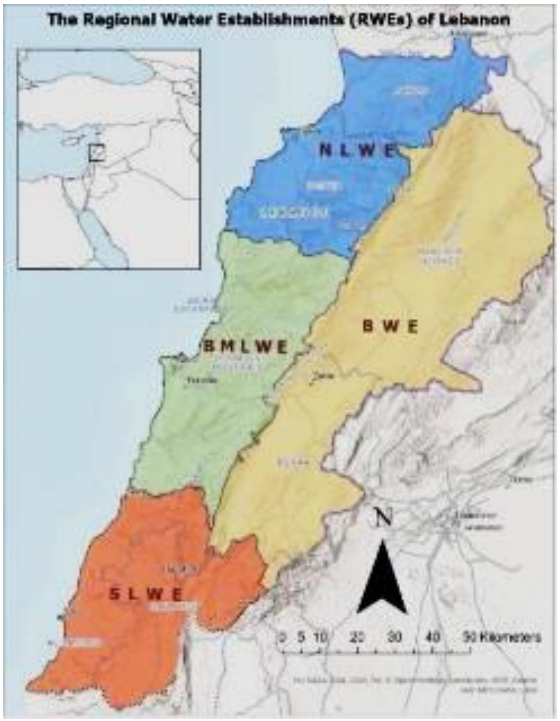
Lebanon embarked upon an ambitious program of social and economic reconstruction to rebuild much of its physical, social and economic infrastructure. The reconstruction program was financed mostly through borrowing from domestic banks, which resulted in a heavy government debt burden. By 1998, the growing debt, created by the postwar reconstruction program, became a major problem, which was exacerbated by the collapse of the country's real-estate sector. This brought the ambitious social and economic reconstruction program, initiated in the 1990s, to a halt.

(see Gharios et al., 2022)

a) Establishment of the WEs

Law nº 221 of 26/05/2000[2] opened a new era with an in-depth reorganization of the water sector. The Law provided the overarching legal framework for the development and operation of the water and wastewater sector in Lebanon. However, the law clearly envisioned and relied on the development of implementing regulations and decrees, which have not been fully developed since then.

- The Law defined the role of the Ministry of Energy and Water (MoEW) as the entity responsible for policy making, planning and implementation, regulation, and monitoring of the water sector (water supply, wastewater, and irrigation).
- It merged the former Water Boards and Local Committees into 4 Regional Water Establishments (WE), as the main water and wastewater service providers in charge of operating and maintaining the water supply and wastewater infrastructure and providing services to communities:
  - Beirut and Mount Lebanon Water Establishment (BMLWE), located in Beirut, covering the territory of the 2 Governorates of Beirut and Mount Lebanon;
  - North Lebanon Water Establishment (NLWE), located in Tripoli, covering the territory of the 2 Governorates of North Lebanon and Akkar;
  - Bekaa Water Establishment (BWE), located in Zahleh, covering the territory of the 2 Governorates of Bekaa and West Bekaa;
  - South Lebanon Water Establishment (SLWE), located in Saïda, covering the territory of the 2 Governorates of Nabatiyeh and the South.



The WEs enjoy legal personality and financial and administrative independence. According to the law, their mission is to ensure the following services:

[2] Completed by other legal documents:
Law 241/2000 of 07/08/2000, Law 377/2001 of 14/12/2001, Bylaw 8122 of 03/07/2002

- Studying, implementing, operating, maintaining, and renewing water systems to supply potable and irrigation water and collecting, treating, and discharging wastewater, according to the master plan, or upon previous approval by the Ministry.
- Proposing tariffs, taking into consideration the general socio-economic conditions.
- Monitoring the quality of drinking water and the quality of discharged wastewater.

Table 1
Main characteristics of the WEs - 2020

	NLWE	BWE	BMLWE	SLWE
Estimated population served	1 279 000	750.000	2.907.000	1.200.000
Number of villages	457	250	533	385
Number of water treatment plants	3	11	6	7
Produced volume of water (Mm^3/year)	94	68	171	113
Water network length (km)	6 000	4.384	9.000	5.000
Number of connections	67 500	86.761	592.835	176.000
Number of meters installed	60 979	38.400	185.960	NA
Number of employees	604	403	782	236
NRW rate (%)	48%	48%	30% - 40%	55%
Collection rate (%)	50%	32%	79%	51%

Source: data collected by LTTA

b) Litani River Authority

The Litani River Authority (LRA) had been created before the sector reorganization of 2000, aiming at managing water resources and hydropower capacities of the Litani River Basin (part of Bekaa Governorate and South Governorate). It remains as an autonomous entity (under the MoEW), with some attributions with regard to irrigation and water supply in rural areas of the basin.

c) Council for Development and Reconstruction

The Council for Development and Reconstruction (CDR) is another important body of the institutional structure of the sector. The CDR was created in 1977, with a corporate status, and directly attached to the Council of Ministers. The CDR competences focus on planning and implementing infrastructure projects. As such, the CDR is responsible for preparing feasibility studies, undertaking the execution of projects of any public institution, department, or municipality. The CDR, therefore, plays a major role in the investment programs to improve facilities operated by the WEs.

d) National Water Sector Strategy

A National Water Sector Strategy (NWSS) was proposed in 2010, followed by the National Strategy for the Wastewater Sector (NSWS). Both National Strategy Plans for water and wastewater were officially adopted by the Lebanese Government in 2012. The NWSS has been updated in the year 2021.

While the NWSS represented a necessary and important step in the development of the Lebanese water sector, it remained a non-binding executive order that did not impose any legal requirement on public or private entities to take actions. The strategical framework constituted, however, an important starting base for the induction of the Canal 800 and Greater Beirut Water Supply Project (GBWSP) projects, as well as the rehabilitation of water distribution networks. The planned US$ 5 billion investment program for the period 2011-2015 was spread across the four WEs (Beirut Mount Lebanon 40%, North 23%, South 21%, and Bekaa 16%). However, its implementation has been constrained by weak accountability and continuous delays in

the implementation of Law 221 that should guarantee the institutional and legal autonomy of the WEs. New tariff schemes should have been developed. Indicators related to service quality, collection rate or NRW remained poor. Despite ambitious aspirations, progress towards implementation of the strategy has been very slow to this date.

A review process for the NWSS began in June 2019. The updated NWSS was issued in 2020, without any mention of the key issues and gaps that remained unchanged.

e) Water Code

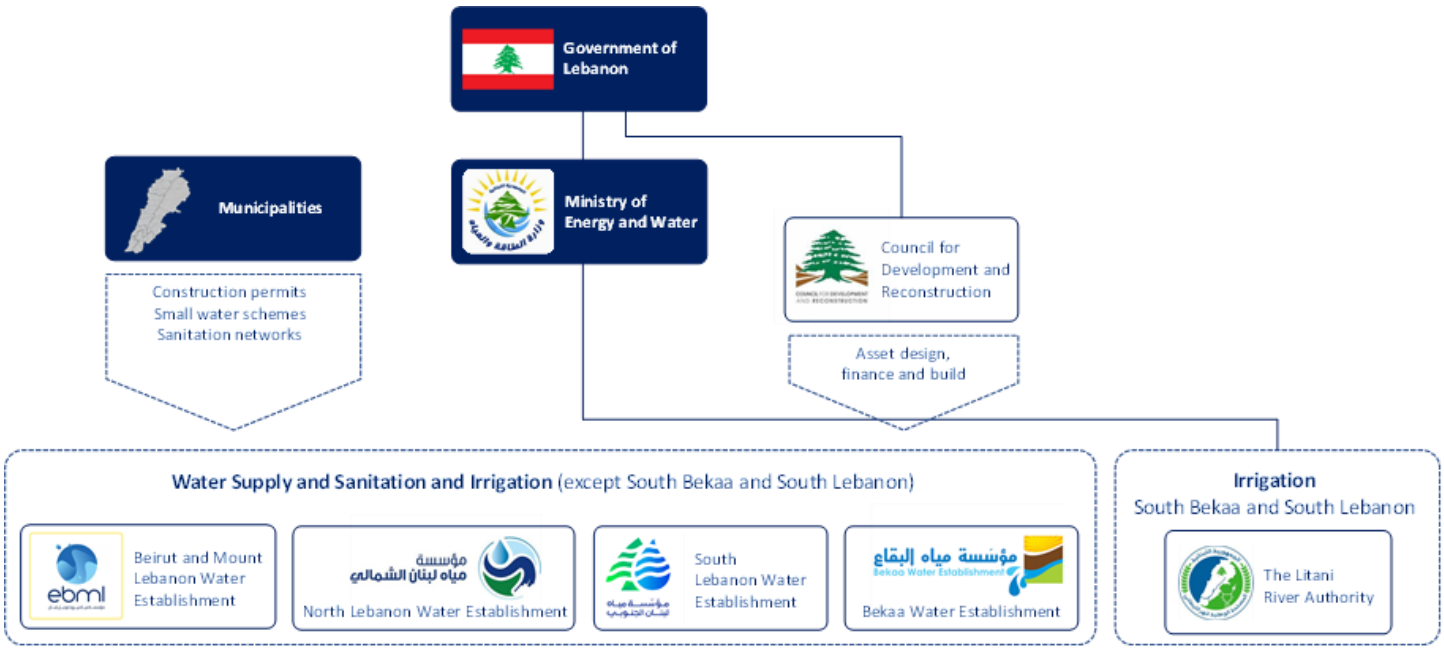
The Water Code was initially drafted in 2005. However, it was promulgated much later, by Law nº 77 dated 13/04/2018, amended by Law nº 192, dated 22/10/2020. It is not yet under application.

The Water Code represents a refinement of the institutional framework of the sector, reinforcing some major principles, such as sustainable management, responsibility of public authorities to ensure drinking water and water for irrigation, wastewater treatment, water resources protection, and water quality control.

It completes Law 221 with the creation of the National Water Council as the main policy and planning body.

It also encourages private sector participation and promotes the principle of having users / polluters pay for the pollution they produce. Public establishments (including WEs) are allowed to delegate management and promote PPP (Public-Private Partnership) projects[3]. Unfortunately, the text does not provide sufficient details on how the new policies might be implemented.

Figure 1
Water Sector Institutional Organization



Source: 2012 Water Strategy Document

In conclusion, the present institutional framework of the sector is clearly established in terms of general principles, but lacks complementary decrees to detail the reforms:

- Decree on vested rights over water.
- Membership and organization of the National Water Council.

[3] Legal forms of Built-Operate-Transfer – BOT, or Design-Build-Operate-Transfer – DBOT.

- Tariffs and fees regime.
- Public WSS services delegation types and arrangements for PPP,
- Rights and responsibilities of water users' associations.

2.2.2 Challenges related to the current national crisis

With the end of the hostilities in 1990, the challenges of post-war policy reforms in Lebanon's water sector became evident. The water and sanitation infrastructure, badly scarred by the civil war, had to be rebuilt.

Twenty years after launching its water sector reform, Lebanon has not been able to completely meet the needs of the water users or the priorities of the managing authorities. Significant delays and weaknesses have impeded the full implementation of the key reform launched in 2000. Poor coordination among government entities has led to the continuing fragmentation of responsibilities for investment planning and execution, and partial implementation of a delegated model of service provision has not been complemented by a parallel effort to strengthen central government management of the water sector.

The MoEW and the LTTA have already detailed the challenges in two documents:

- Updated National Water Sector Strategy 2020-2035;
- Road Map to the Recovery of the Water Sector in Lebanon.

Although the Water Code was amended in October 2020, it still carries on with the same old problem of adding another layer on top of older water texts without entirely replacing the old ones.

As a result, the development of WEs is still hampered by key drawbacks:

- The distribution of responsibilities and tasks are not sufficiently detailed, between the operational level of the WEs and the tutela / regulation at national level.
- The autonomy of the WEs is nominal at best. They are still linked to the central government in key areas:
  - Inability to hire staff independently of the government's consent, and obligation to follow the Council for Civil Service rules and procedures.
  - Financial independence is non-existent.
  - Poor cost recovery (insufficient tariff, high NRW, and poor collection efficiency).
  - Unclear ownership of the assets.
  - Insufficient cooperation with security and legal authorities to enforce laws.
- Relationship with consumers and coordination with municipalities are poor:
  - Wastewater fees conflict with fees levied by municipalities – there is double tapping where both entities levy the same tariff separately and independently.
  - Lack of trust.
  - Poor communication with beneficiaries.
  - Lack of transparency.

Table 2 summarizes some more relevant challenges. The last box (Organizational challenges for the WEs) is the mere subject of the present study. Nevertheless, these organizational challenges cannot be properly addressed as long as clear strategic decisions have not been taken with regard to the preceding boxes.

Table 2
Tentative summary of key challenges

Financial challenges
• Solve the issue of the pending invoices issued by private operators hired to manage wastewater treatment plants. The contracts were signed by the CDR, a settlement should be agreed. • Improve the investment capacities of the WEs to be able to face the future needs of the services. • Reduce deficit and balance income v/s expenses, which means rationalizing O&M expenses as well as reviewing the tariff settings in compliance with the real cost of the service
Commercial challenges
• Upscale metering and improve billing efficiency. • Increase the number of customers by the identification of illegal connections. • Improve the quality of services to reinforce the confidence of the customers in the WEs. • Increase the collection rate.
Technical challenges
• Implement meters to monitor the volumes on the water sources and the production. • Develop an action plan to control and reduce the NRW. • Rehabilitate old infrastructures. • Takeover the wastewater plants management under in-house or outsourced operation
Legal and institutional challenges

• Complete the application decrees of the Water Law.
• Clarify the relationships between the WEs and their tutela (MoEW), the municipalities, the CDR, and all other entities related to the sector.
• Reinforce the WEs' autonomy, in particular for the recruitment process and HR management.
• Deeply review the framework for wastewater services. For the time being:
  • The WEs are officially responsible for the service provision, but this responsibility is not considered in their organization as stated by the law
  • Most existing WWTPs are handled by the CDR
  • Sewerage network operation is partially carried out by municipalities
  • Tariff levels for sewerage are unrealistically too low
• Also, review the real level of responsibility of the WEs in terms of water resource management and irrigation.

Organizational challenges for the WEs
• Review the organization of each WE according to the services to be provided. • Reinforce the human resources capacities. • Review and simplify the procurement procedure. • Allow WE to determine salaries competitively outside the government salary scale. • Define a strategy for outsourcing, and develop contractual schemes based on performance.

3 GENERAL REVIEW OF NLWE CURRENT SITUATION

EELN (Établissement des Eaux du Liban Nord, hereafter NLWE, North Lebanon Water Establishment) is a public institution in charge by law 221-2000 of the drinking water production and distribution as well as irrigation services and wastewater management. The services rendered by NLWE cover the Lebanese Governorates of North Lebanon and Akkar, with a dimension of about 1,950 km^2.

NLWE serves almost 50% of the 278 000 housing units in the area.

NLWE management is considering that the present organization has no sufficient capacity to manage the wastewater systems (technical and financial capacities). For this reason, the collection network is still operated by municipalities and the WWTP are still operated under the management of the CDR.

The LTTA team has issued in 2022 a global assessment for the NLWE. The situation can be summarized as follows:

Table 3
Main indicators of NLWE's situation (about June 2022)

Population		
Estimated population served		1 279 000
Nbr of municipalities		457
Nbr of Housing Units		270 000
Nbr of connections		67 500
Housing units per connection		4
Subscribers (2019)		
Metered subscriber		60 979
Gauged subscribers		67 804
	Total subscribers	**128 783**
Rate of metered subscribers		47%
Water production		
Volume produced (Million m³/Y)		94
Collection rate (%)		50%
Est. NRW rate (%)		48%
Water Resources & Infrastructures		
Nbr of Water Treatment Plants		3
Nbr of Pumping Stations		79
Nbr of Wells		69
Nbr of Springs		153
Nbr of Dams		0
Est. length of the water networks (km)		6 000
Wastewater		
Nbr of Major WWTP in NLWE jurisdiction		
In service (to date all operated by CDR)		4
Under constructio/rehabilitation (by CDR)		5
		9
Length of existing sewer		Not Known
Staffing		
Nbr of actual employees (Permanent + On demand)		604

Source: AFD (2022). Initial Diagnostic of the Water Establishments – Data collection and diagnosis report – N*LWE, Consultants Hydroconseil-Hydrophil-VA, Revised Edition, July 2022*

3.1 NORTH LEBANON AREAS

According to the Central Administration of Statistics (CAS), total population of the area is estimated to 1,28 million inhabitants, including Lebanese, non-Lebanese nationalities, and Registered Syrian Refugees (RSR). The population is slightly declining, due to the global crisis that is reinforcing emigration flows and to the progressive reduction of the number of Syrian Refugees.

Despite the population decline, Table 5 shows an increase in the number of households (+2% for Akkar and +3% for other areas), except for the RSR.

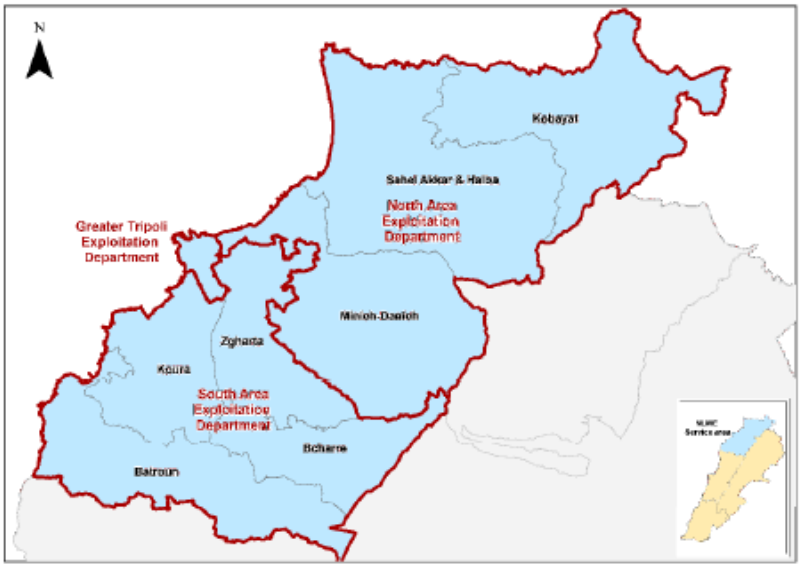


Table 4
Estimated population 2020

	2018	2019	2020	2021
Tripoli	243 833	243 711	242 639	240 649
Koura	84 563	84 521	84 149	83 459
Zgharta	87 749	87 705	87 319	86 603
Batroun	58 868	58 839	58 580	58 099
Akkar	323 966	323 804	322 379	319 736
Bcharre	22 099	22 088	21 991	21 810
Minieh -Danniyeh	140 797	140 727	140 107	138 959
Registered Syrian refugees	258 685	249 360	235 970	229 262
Total Population	1 220 560	1 210 755	1 193 134	1 178 578

Source: CAS

Table 5
Estimated number of households 2020

	2018	2019	2020	2021
Tripoli	55 633	56 050	56 471	56 894
Koura	22 246	22 413	22 581	22 750
Zgharta	21 753	21 916	22 081	22 246
Batroun	17 459	17 590	17 722	17 855
Akkar	68 201	68 542	68 885	69 229
Bcharre	6 298	6 345	6 393	6 441
Minieh -Danniyeh	29 783	30 006	30 231	30 458
RSR	58 757	56 639	53 598	52 074
Total Households	280 130	279 502	277 961	277 948

Source: CAS

3.2 NLWE EXPECTED ACTIVITIES

According to the Law 221-2000, the NLWE must perform the main activities related to the water and wastewater at a competitive level and use modern tools and processes to achieve the goal of satisfying the customers and preparing for future improvements. The activities are confirmed by the Water Law nº 192-2020, which has recently been voted by the Parliament and is still waiting for application decrees. The activities may be summarized as follows:

- Resources management: protection of the water resources,
- Follow-up of the raw water quality,
- Forecast of the water demand,
- Supervision of the treated water quality,
- Management of the house connections,
- O&M of the drinking water distribution network, reservoirs, pumping stations, etc.,
- O&M of the wastewater collection network including pumping stations, as well as wastewater treatment plants,
- O&M of the irrigation systems,
- Proposals for the reinforcement of capacities and for new extensions (water, wastewater, and irrigation),
- Implementation of the environment protection policy: treated effluent discharge, sludge management, noise, and odors control,
- Customer service management: billing process, collection, metering strategy, quality of service (24/7), customer relation, updating and maintenance of customer database,
- Technical: design and supervision, laboratory, specific software (LIMS, GIS, CMMS, SCADA etc.), process expertise, meters calibration, master plans, power supply, and power optimization
- Tariffs proposals,
- Non-Revenue Water (NRW) policy: illegal connections, illegal wells, disconnections, leak detection,
- Communication: internal, external (universities, civil society, municipalities, etc.),
- Human resources management: wages policy, recruitment strategy, training, performance assessment, careers management, bonus and benefits rules, union relationships, etc.,
- Finance: expenses control, income, accounting, assets management, financial strategy, investment planning, profit & loss, annual balance,
- Legal: insurance, warranties, owner's rights, laws update and compliance, water law, labor law, contracts management, etc.,
- IT: software and hardware maintenance, update, licenses management, security, telecommunication,
- Procurement: cost optimization, products quality, new technologies
- Logistics: sites maintenance (cleaning, landscaping), vehicles, buildings maintenance, HVA,
- Administrative: board coordination, archives, relationships with public administration, chairman office,
- Health and safety: maintenance of the safety equipment, control safety on site works, training, follow-up of accidents
- Regional offices: as NLWE covers a large area, it is important to maintain local contacts with the customers. Regional offices are implemented and should be maintained. They oversee local customer relations, O&M of local water production, and local networks.

3.3 ORGANIZATION CHART OF NLWE

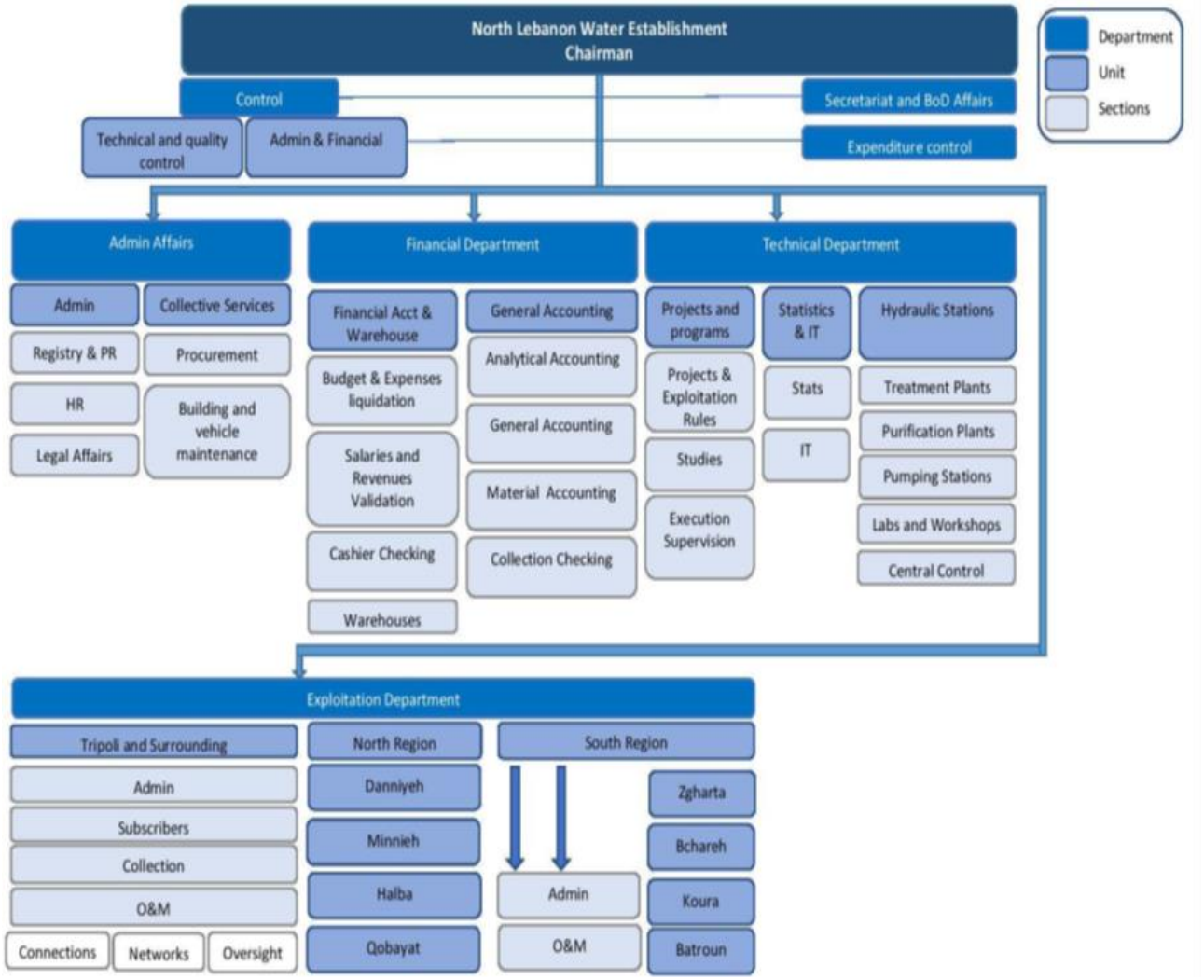
NLWE – North Lebanon Establishment, based in Tripoli, is a public institution under the supervision of the MoEW. The services under the management of the NLWE cover Tripoli, Koura, Zgharta, Batroun, Akkar, Bcharre, Minieh, and Danniyeh with about 457 villages and a dimension of 1950 km^2.

Created by law 221-2000, NLWE is the result of the merging of seven former water authorities: Akkar, Qobayat, Zgharta, Bechareh, Koura, Batroun, and Tripoli.

The Establishment is driven under decrees promulgated in 2005, which are:

- Decree 14602 of 14/6/2005 – Rules of procedure
- Decree 14603 of 14/6/2005 – Operating rules amended by Decree 1759 of 16/4/2009
- Decree 14639 of 16/6/2005 – Financial regulations
- Decree 14874 of 1/7/2005 – Staff rules and regulations
- Decree 14913 of 5/7/2005 – Administrative organization

Figure 2
NLWE Organization Chart



Source: Organization chart as per decree ref 14913 (2005)

NLWE is organized around 4 main departments:

- Administrative Affairs, with 2 units:
  - Administration with three sections of Registry & PR, Human Resources, and Legal affairs
  - Collective Service with sections of Procurement and Building & vehicle maintenance.
- Financial Department, with 2 units:
  - Financial Acct & Warehouse with sections of Budget & Expenses, Sales & Revenues Validation, Cashier Checking, and Warehouses,
  - General Accounting with sections of Analytical Accounting, General Accounting, Material Accounting, and Collection Checking.
- Technical Department with 3 units:
  - Projects and Programs with sections of Projects & Exploitation Rules, Studies and Execution Supervision,
  - Statistics & IT with sections of Statistics and IT,
  - Hydraulic Stations with sections of Water Treatment Plants, Wastewater Treatment Plants, Pumping Stations, Labs & Workshops, and Central Control.
- Operation Department (also referred to as Exploitation Department) with 3 units by region:
  - Tripoli and Surrounding with Administration, Subscribers, Collection, and O&M sections,
  - North Region is divided into 4 units: Danniyeh, Minnieh, Halba, and Qobayat,
  - South Region with sections of Administration and O&M divided into 4 units: Zgharta, Bchareh, Koura, and Batroun.

As a matter of fact, the present NLWE organization does not match the requirement of all the activities listed in 3.2. Many gaps are observed, with key required activities that are not highlighted in the organization chart established by law since 2005:

- Wastewater
- Irrigation
- Customer relations (except a subscriber's unit as part of the Operation Department limited to Tripoli and surroundings)
- Communication
- Health, safety, and security
- Resources management
- Human resources
- IT and automation
- Non-Revenue Water

The Ondeo experience

In 2003 – 2007 the Tripoli water board was singled out for a PPP experience. With funding from the AFD, the CDR awarded Ondeo Liban (subsidiary of the French Operator Suez) a contract to fully manage the Tripoli water board. This experience has left many positive spin-offs that are still visible today in NLWE operations.

- Ondeo was allowed to recruit according to its own criteria 65 new contractual employees that where later integrated as full-time employees of NLWE through a special procedure in the civil service board called (restricted examination) where the examination is limited to personnel already under contract with NLWE.
- Collection was highly improved by restoring the consumers' confidence in the quality of the service provided.

- Participation of the middle management in the decision-making process was improved by simplifying the bureaucracy and delegation of responsibility. We did witness during our visits that this state of mind has been preserved by the actual CEO and is still benefiting NLWE to this day.
- Access to modern technologies has also produced lasting effects on the personnel and the procedures.
- Unfortunately NLWE has not been able to retain some of the valuable members of the Ondeo team due to its incapacity to pay salaries competitive with the private sector.
- Ondeo had to deploy a lot of energy to circumvent all the juridical hurdles left by the non-existence of appropriate laws concerning the PPP process and the novelty for all stakeholders of the experience. This contributed to their refusal to extend the contract for three more years as was offered to them.

3.4 COMMERCIAL PERFORMANCE

3.4.1 Tariff settings

Gauge

Accounts are billed either though gauges or through meters. In both cases, tariffs are set as a lumpsum. The price of the m^3 is then derived from this lumpsum. The correct procedure should be to go from the pricing of one m^3 and then determine what the client should pay for a continuous $1m^3$/day

- Gauges are technically supposed to allow a maximum flow equivalent to $1m^3$/day when permanently open.[4] The device incentives the use of individual roof tanks, which can be filled by the limited but constant flow passing through the gauge, during the night.
- Accounts equipped with flow meters are usually billed for a theoretical consumption of 1 m^3/day. Meters are supposed to be periodically read (every 3 months). An extra charge is invoiced when the metered consumption is larger than $1m^3$/day. However, meter reading is not effective at the current time, due to insufficient staffing and insufficient funding to pay transportation costs.

The actual tariff under application is summarized in the following table:

- Metered accounts must pay a little more, due to higher maintenance costs.
- Sewerage charges are rather symbolic, unable to cover the cost of the service[5].
- The database does not differentiate the customers and the flat fee is the same for domestic and non-domestic accounts.

4 The gauge is calibrated for 1 m^3/day for every household with 200 m^2 area or less. It can be regulated for higher flows (up to 3 m^3/day) for larger customers.

5 Generally speaking, the O&M cost of the sewerage service (collection + treatment) is similar to the cost of the water supply service. In many countries (for example Brazil), sewerage tariff is calculated by applying 100% or 80% over the water supply fee when the account is linked to a sewer.

Table 6
Current tariff grid (as of 2022)

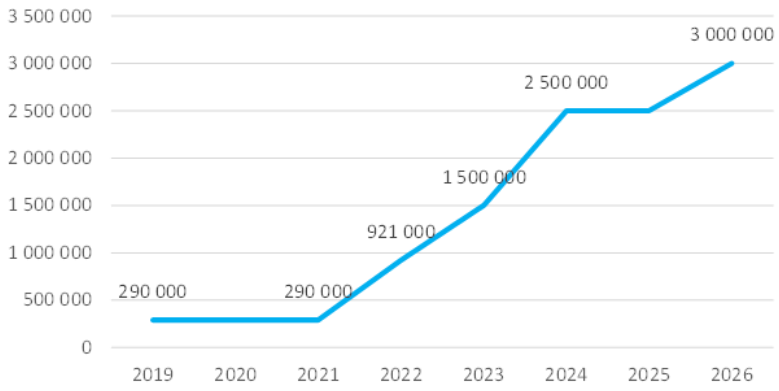
NLWE	Annual Tariff (LBP)			
Tariff Items	Gauge (1m³/day)		Meter (1m³/day)	
	Not Connected to WWTP	Connected to WWTP	Not Connected to WWTP	Connected to WWTP
Annual Water Fees	756 000	756 000	756 000	756 000
Maintenance (Gauge/Meter)	48 000	48 000	84 000	84 000
Wastewater Fees	12 000	24 000	12 000	24 000
Automation Fees	0	0	0	0
VAT (11%)	89 760	91 080	93 720	95 040
Rounding	240	920	280	960
Stamp	1 000	1 000	1 000	1 000
Total	907 000	921 000	947 000	961 000

In theory, tariffs should be set up for each WE, based on the demonstration provided by each establishment to cover their own costs. The Board of the WE proposes the tariff for the coming year, but the proposition must be validated by the MoEW and the Ministry of Finance before becoming effective.

In 2020, the OPEX cost recovery rate was estimated at 53%. Tariffs did not move in 2021, despite the high inflation rate since the beginning of the national crisis. They were readjusted in 2022.

Faced with the political difficulty to decide drastic increases of the water tariff, the plan is to approve gradual adjustments in order to reach sustainability within 4 years. In the “Roadmap to recovery of the water sector in Lebanon” (May 2022), the MoEW plans to progressively increase tariffs up to LBP/year 3 million by 2026 , but it seems that by request of the MoEW the target date was reviewed and shortened, as the 3 million fee has to be applied for 2023

Figure 3
Real and planned tariffs 2019-2026 (LBP/year)



Source: MoEW (2022). Roadmap to recovery of the water sector in Lebanon

3.4.2 Customer database

The number of registered customers reached 129 559 accounts at the end of 2021 and steadily increases about 2% per year.

Considering the 277 948 households existing in 2021 (see 3.1), the subscription coverage rate is estimated to 46,6%[6].

Subscribers have either gauge (52,9%) or water meter (47,1%). There are 60.979 meters installed in NLWE (35.000 in Tripoli). Faulty water meters are being regularly replaced.

Customers are not registered by type (domestic, commercial, industrial, state, municipality, etc.), and this will limit the implementation, at some point, of a differentiated tariff structure.

Moreover, the Establishment estimates illegal connections at about 20 000. Until 2019, a specific unit for controlling illegal connections and customer database upgrading was in place. However, no data is collected to recognize, and register illegal connections. Regularization of these connections is currently not performed.

3.4.3 Billing and collecting

NLWE does not issue bills. The concept of "billing" refers to the following procedure:

- The MoEW establishes the tariffs to be charged annually
- Radio and TV announcements inform the population about the tariffs and deadlines to pay the "bills"
- Payment can be done:
  - Paying NLWE employees ("bill collectors") who go house-to-house collecting the charges
  - Going to the Water Establishment Agency
  - Paying through OMT transfer
- Payment is usually done once a year, but installments (up to 6 per year) are also possible
- Subscribers receive an invoice/receipt once payment is done

Collection rate was 50,2% in 2020. The decrease observed since 2018 is related to a declining capacity and willingness to pay from the customers, associated with the crisis and the deterioration of the operational capacity of the WE.

Table 7
Information about revenues (LBP)

	2018	2019	2020
Revenues (billing)	31 706 208 005	32 522 098 112	32 342 529 527
Revenues (collection)	18 361 753 587	16 608 263 209	16 250 661 214
Collection rate	57,9%	51,1%	50,2%

Source: "Needs and Forecast 2021-2024", NLWE, June 2021

3.4.4 Customer care

NLWE has implemented a call center. A total number of 14 contacts received from the customers was observed for the whole month of November during the site visit on November 30th.

[6] Probably less, as approximately 10% of the customers are non-domestic (estimated through international benchmarking, as Lebanese customer database do not make difference between domestic and non-domestic connections).

3.5 TECHNICAL PERFORMANCE

3.5.1 Water production and demand

According to LTTA´s diagnosis (2022), the water production scheme consists of a combination of 69 wells, 153 springs, 79 pumping stations, and 3 water treatment plants.

Water production significantly decreased since the beginning of the crisis, mainly due to energy availability and financial restrictions. In 2020, water production was 94,5 Mm^3/year, with about 44% of the resource coming from wells and 56% from springs.

Table 8
Water Production - 2020

	Wells	Springs	Total
Water Production (m^3/year)	41 298 813	53 196 706	94 495 519

Source: "Needs and Forecast 2021-2024", NLWE, June 2021

Water consumption has no reliable records, as bulk meters do not cover the entire service area (and some are not operational).

From a conceptual point of view, it is possible to reach a "contractual water demand", by multiplying the number of subscribers by the subscribed consumption of 1 m^3/day. In 2020 the "contractual water demand" was around 47,3 Mm^3/year.

Table 9
Contractual Water Demand, 2020

	Nº of subscribers	**Annual contractual per subscriber (m^3)**	**Total contractual water demand (m^3/year)**
Water consumed	129 559	365	47 289 035

Source: "Needs and Forecast 2021-2024", NLWE, June 2021

3.5.2 Water distribution

The network length is estimated at 6 000 km.

Regarding the level of service, daily service is intermittent almost everywhere out of Tripoli:

- Tripoli may have (with a permanent power supply) 24h/day supply, with 44 000 m^3/day done by gravity and 30 000 m^3/day by pumping stations. For Tripoli, the current fuel requirements are 600 l/h.
- In other sub-systems, water distribution is limited to 6 to 10 hours/day, or even less, due to fuel shortage and unreliable electricity from the national grid (EDL or EDK).
- Obviously, areas served by gravity enjoy longer periods of service.

People in general do not drink tap water (bottled water is the main source of drinking water consumption, although tap water is used for cooking), as they consider its quality to be dubious.

According to WHO/UNICEF Joint Monitoring Program for Water Supply, Sanitation and Hygiene[7], only 47,7% of water is considered "safely managed" (statistics given at the national level).

[7] https://washdata.org/, 2021

If limited water production capacity may have some responsibility over the lack of continuous service, it is far from being the sole responsible. Daily energy interruptions, network leakages, illicit connections, lack of spare parts for repairs (such as pump components, pipe accessories, and electrical materials), and private roof-top water tanks[8] contribute significantly to the poor service provided.

NLWE does not have any SCADA system to monitor and operate the water plants, the pumping stations, and the reservoirs.

The distribution network is not equipped with district meters.

Bulk meters are not operational in part of the production schemes. Service meters are not universally installed. Commercial and technical water losses are not accounted for. In short, there is no reliable water balance and no precise estimate of the NRW rate.

Based on estimates of the water consumption and the "contractual water demand", the theoretical NRW rate would have been around 50% in 2020.

3.5.3 Sewerage services

Sewerage has been "forgotten" by the water sector framework reorganization since 2000. Water supply was a priority. For the time being, there is no clear strategy about sewerage. According to the WHO/UNICEF Joint Monitoring Program for Water Supply, Sanitation, and Hygiene, only 16.3% of the Lebanese population has safely managed wastewater by 2021.

For the time being:

- NLWE has no capacity (financial and human skills) to assume its formal responsibility related to sanitation services in its territory.
- Some WWTP have been built by the CDR or NGOs. These entities have no status and no capacity or willingness to operate the plants once commissioned. As they cannot transfer the O&M to somebody else, they keep the responsibility of managing the plants through the arrangement of outsourcing contracts with private operators. However, they don´t have mandate and funding for paying such contracts except in the short-term transitory phase.
- Similarly, some municipalities decided to invest by themselves in local sewage networks. They must now operate wastewater collection in areas where these networks have been implemented.
- Any institutional solution for transferring the asset ownership to a designated operator must be accompanied by a financial capacity to operate the service. Present sewerage tariffs are symbolic and do not come close to the financing package needed.
- The political fear of having to impose to the population a large increase in the tariff is at the root of the problem. International experience shows that managing sewerage services has approximately the same cost as managing water supply services. In other words, correctly embracing sewerage together with water supply implies doubling the water tariff. This means a big political move, preceded by a strong communication effort. Obviously, the present financial crisis does not provide the appropriate political environment for such a national debate.

A few WWTP exist. They are all operated by private companies hired by the CDR.

[8] As water rationing is frequent and water supply is intermittent, there is a generalized practice of installation of individual roof-top water tanks to store water. This fact has a major importance in commercial and operational management as well as in water quality issues.

Table 10
Wastewater treatment facilities in NLWE area (managed by CDR through outsourcing)

WWTP	Design capacity (m^3/day)
In service	
Selaata (Batroun)	3,200
Chika	2,600
Ejbaa	3,200
Ain Tourine	1,800
Under rehabilitation	
Tripoli	135,000
Under construction	
Aabdeh	39,000
Bchaali	500
Bcharreh	3,500
Kfar Hilda	3,500
Michmich	8,000
Total	199,300

Source: AFD (2022). Initial Diagnostic of the Water Establishments – Data collection and diagnosis report – NLWE, Revised Edition, July 2022.

According to NLWE, some 20 small WWTP have been built and are managed by the municipalities. NWLE is involved in the operation of one of these (wetland WWTP), in partnership with the municipality.

Besides this very limited activity in the sanitation sector, NLWE is reluctant to take over the sewerage services, as far as financial and technical conditions are not reviewed:

- Tariffs (or public subsidies) are set up to cover the O&M costs
- Asset ownership is clearly established, with implications on the transfer of commissioned facilities, responsibilities for heavy maintenance and replacement, technical and financial mechanisms for planning and financing new extensions, etc.
- The WE is allowed to adapt its in-house organization and its HR management to definitely embed the sewerage service within its core business. As seen above, there is currently no sanitation department or unit dedicated to sanitation in the organization chart decided by law.

3.6 FINANCIAL PERFORMANCE

3.6.1 Accountancy

Article 4.2 of Law 221 states that WEs shall request an auditing of its financial statements, and of the internal control system implemented within the establishment.

According to the National Water Sector Strategy Update – 2020, Volume II, it seems that this practice is not in force. NLWE prepares annual reports, which are submitted to the MoEW, alongside annual budgets. Such reports are not publicly disclosed.

The Consultant could not have access to any annual report or official financial statements.

From what we gathered, the annual report presents general findings on operational and commercial aspects, considerations about investment, and simplified financial statements. The annual budget describes the costs by item of expenditure and the revenue forecast. Accounts are not audited.

An inventory of fixed assets has been promoted by the MoEW with support from donors and the CDR. However, it seems that there is no transfer accompanied by an accounting document that allows reliable entries in the accounts.

An ERP system was implemented since 2010-2012 (USAid support) The NLWE is getting the most benefit from this system out of the four WEs. This is due to the presence of more computer-aware and capable staff.

The Lebanon Water Project (LWP) funded by USAid updated financial and performance audit manuals (by 2016 for SLWE and NLWE, by 2020 for BMLWE and BWE).

Asset management has also been assisted by the LWP, who developed a standardized asset management manual for all WEs.

3.6.2 Financial information

The Consultant did not have access to audited financial statements. The following table is based on information provided by NLWE in a presentation done on June 2nd, 2021 (Workshop "Water Sector 2021… Sustain and grow! Ensure water services sustainability & continuity", Beirut).

According to Table 11, and as in most water utilities in the world, energy is the heaviest category of operational costs, after the costs of personnel.

Table 11
Financial information (based on available data)

	in LBP			in €		
	2018	2019	2020	2018	2019	2020
Exchange rate (€ 1 = LBP)				1 724	1 688	1 852
Sales	31 706 208 005	32 522 098 112	32 342 529 527	18 391 072	19 266 646	17 463 569
Arrears management & penalties	5 304 828 633	5 713 687 246	5 097 601 831	3 077 047	3 384 886	2 752 485
Grants & government subsidies	5 027 990 500	7 539 618 113	21 133 660 334	2 916 468	4 466 598	11 411 264
Revenues (Billed)	42 039 027 138	45 775 403 471	58 573 791 692	24 384 587	27 118 130	31 627 317
Revenues (Collection)	18 361 753 587	16 608 263 209	16 250 661 214	10 650 669	9 839 018	8 774 655
Salaries permanent staff	8 493 730 757	7 769 231 965	7 615 741 765	4 926 758	4 602 626	4 112 172
Salaries temporary staff	3 850 305 690	4 413 913 980	4 320 789 070	2 233 356	2 614 878	2 333 039
Allowances	6 405 657 373	7 072 284 976	6 382 084 259	3 715 579	4 189 742	3 446 050
Total personnel	18 749 693 820	19 255 430 921	18 318 615 094	10 875 692	11 407 246	9 891 261
EDL/EDZ/EDQ	9 057 166 885	8 505 142 256	8 491 360 693	5 253 577	5 038 591	4 584 968
Diesel	883 780 047	660 967 415	1 284 658 401	512 633	391 568	693 660
Toyal energy	9 940 946 932	9 166 109 671	9 776 019 094	5 766 211	5 430 160	5 278 628
Other O&M	17 159 154 095	18 412 817 264	32 434 822 430	9 953 106	10 908 067	17 513 403
Total OPEX	45 849 794 847	46 834 357 856	60 529 456 618	26 595 009	27 745 473	32 683 292
Rehab-Replac. of old W. Netw.	324 838 433	309 444 296	254 650 362	188 421	183 320	137 500
House connections	277 813 327	283 642 401	146 316 233	161 145	168 035	79 004
Other equipment	130 668 119	175 343 695	66 952 389	75 794	103 877	36 151
Total CAPEX	733 319 879	768 430 392	467 918 984	425 360	455 231	252 656
Other data given by the same document						
Adjustments to Recover Currency Devaluation	0	64 722 209 742	168 102 439 899	0	38 342 541	90 768 056

Source: NLWE (2021). NEEDS AND FORECAST 2021 - 2024

Lebanon has been suffering from shortage of power supply for the past 30 years. The situation has worsened at present time, due to the conjunction of the national financial crisis and the increasing price of fuel at

international level. This has a strong impact on the public utility, Electricité du Liban (EDL), which provides electricity only a few hours per day, as they are unable to supply fuel to power central generators.

Electricity is supplied by EDL at around 0.08 US$/kWh, while energy produced by generators costs about $0.30 US$/kWh. As a result, NLWE is experiencing operating difficulties. Since 2018, NLWE pays only partially for the electricity provided by EDL.

Table 12
NLWE – Effective payment of electricity costs

	2018	2019	2020
EDL/EDZ/EDQ (paid)	135 773 885	138 577 256	124 795 693
EDL/EDZ/EDQ (unpaid)	8 921 393 000	8 366 565 000	8 366 565 000
Total invoiced	9 057 166 885	8 505 142 256	8 491 360 693

Source: NLWE (2021). NEEDS AND FORECAST 2021 - 2024

3.7 IT MANAGEMENT

As observed in 2022 by the ADPi experts required by USAid to scrutinize the IT present situation of the Lebanese WEs:

- NLWE IT unit comprises 4 specialists to cover all IT areas.
- Servers' room is in the headquarters, where the backbone is mainly based. The local network operates at 10 Mb. From the headquarters, it is possible to reach the 8 branch offices remotely trough a DSL plan provided by an internet service provider company with 2 Mb.
- Due to energy shortages, the data center works with a local generator and is turned off at night and during weekends.

The software managing all the administrative needs of the WE under the name "ERP" is in fact an off-the-shelf Microsoft product "Dynamics Navision" that has been heavily tailored for the needs of the WE.

This type of software is generally very rich in options to cater for the needs of the largest possible client base and allows for the management of a particular solution by the creation of various templates adapted to the client's needs. The creation of those templates requires a mix of computer proficiency and deep knowledge of the management needs in terms of data deliverables.

To this day, we are not aware of any in-depth training of IT personnel to enable the creation of internal templates fitting the needs of management.

The implementation process that was handled by the organization that first sold the products to the WE, has later been contracted with a single independent person, putting all the WE at the mercy of this person's availability. No proper documentation was provided for the enacted modification and newly created functions.

The database performance management has to this date been done by the independent service provider, and no training has been provided to the personnel of the WE (when they are present) for this essential function.

Reports needed from any ERP management software can either be regular or circumstantial for a specific action that must be conducted by the WE. Therefore, we see it as essential to have internal knowledge that can provide ad-hoc reports to fit management needs when they arise.

Table 13
NLWE Application Software

Device	Product	State	Comments
Virtualization	Hyperview	Operational	
Load Balance		N/A	
ERP	Nav (Microsoft)	Operational	Financial ERP module is working properly. Next steps should be engineering for GIS integration and O&M modules
Payroll	Nav (Microsoft)	Operational	
CAD	Autocad	Operational	
Hydraulic modelling	Water Cad	Operational	
Billing System	in-house software	Operational	
CRM	Nav (Microsoft)	Operational	
Email	Exchange	Operational	
Supervisory control and data acquisition - SCADA		N/A	Currently SCADA is not working. 3,5 million USD is need to put SCADA operational at (4 major water infrastructure and 17 wells).
Operational Management		N/A	NLWE developed an SOP for O&M that should migrate to the ERP
Maintenance Management		N/A	
Business Intelligence		N/A	
GPS Tracking		N/A	
Water Leakage		N/A	
Backup Software	Veam	N/A	daily, weekly and monthly
Server Antivirus	Eset	Operational	Urgent need of antivirus new software
Workstations Antivirus	Eset	Operational	Urgent need of antivirus new software
Office 365	E3	Operational	Licenses currently updated.
Laboratory - LIMS		E/NW	
Quality Management System		N/A	
Document Management Software		N/A	
Access Control and Time Attendance System		No	
GIS - Geographic Information System		Operational	82% complete in Tripoli. Not for the rest of the territory
Windows Server		Operational	Licenses currently updated
Windows Client		Operational	Licenses currently updated
Domain eeln.gov.lb		E/NW	
Dns		E/NW	
DHCP		E/NW	

Source: DAI / Águas de Portugal (2022)
Legend: E/NW: Exist or not working; N/A: not exist

4 HUMAN RESOURCES ISSUES

4.1 CURRENT SITUATION

The theoretical total number of employees is defined by the decree nº 14913 at 1257 employees. In 2022 only 246 positions are active, almost 20% of the theoretical number.

In 2017, the law nº 46-2017 (article 21) has prohibited any recruitment for all public institutions, including WEs, even for the replacement of retirees. The application of the law is still valid in 2022.

NLWE and all other WEs have contracted with service providers for "on demand" personnel.

The "on demand" personnel are made available by a private contractor to the public organization to achieve when needed temporary and limited field work as a support to the employees. Officially, the "on demand" personnel cannot be in a position of responsibility and cannot be working on a long-term basis, although this became a common practice today.

NLWE is directly hiring 71 people in charge of the irrigation system and 60 people for the collection of water bills. This staff is contracted on a seasonal basis. Bill collectors are paid according to the number of bills recovered. It is a kind of outsourcing.

As a result, the total number of working staff at NLWE was 735 in 2021:

- 246 public employees (therefore 1,010 vacant positions)
- 358 "on demand"
- 131 directly hired for irrigation operation and Bill collection.

Although the Law 221-2000 has recognized that the WEs are independent for financial, administrative, and HR recruitment processes, a limitation was decided by the government through the finance frame law nº 583-2004, article 54, specifying that the recruitment process is submitted to the rules defined by the Public Service Council (Conseil de la Fonction Publique) including the categories and the salaries scale. The law is still under application. Any recruitment should follow a complicated process. The last cycle of recruitment happened in 2013!

The actual number of public employees is therefore decreasing as existing employees reach the retirement age and cannot be replaced. NLWE expects that 50 more people will retire in the coming 5 years, with no opportunity to prepare for a smooth replacement.

NLWE, like other WEs faces many experienced staff resignations. Since the financial crisis started in 2019, the skilled people are looking for better job conditions, and they are moving toward the private business or abroad, as the public salaries are not updated to cope with inflation. [9]

It must be noted that some specific positions (for instance cashiers) have to be filled by public employees. When the employee in charge of the position reaches retirement age, another employee is requested to fill the position as an interim. As the retirees are not replaced, it shall be impossible to fill some of the key positions in the coming years, leading the NLWE to a critical situation.

[9] Recently in May 2022, the Government has issued a decree nº 9129 (12 May 2022), approving an additional financial monthly support of 1 325 000 LBP for the employees that wages do not exceed 4,000,000 LBP.

Table 14
NLWE staffing -2020

	Permanent Staff		Contractual Workers		Temporary Workers		Total Staff	
Engineers	17	6,91%			3	0,81%	20	3,24%
BA Holders	63	25,61%					63	10,21%
BT/TS Holders	37	15,04%	1	100,00%			37	6,16%
Skilled Labor	31	12,60%			107	28,92%	138	22,37%
Unskilled Labor	98	39,84%			260	70,27%	358	58,02%
Total	246	100,00%	1	100,00%	370	100,00%	616	100,00%

Source: NLWE (2021). Needs and Forecast 2021-2024

From the collected data some ratios can be calculated:

Table 15
Ratios

Customer per employee:	224
Employees per 1,000 customers	4.46
Customer per km of distribution network	21,7
Length of the network (km) per employee	10,3
Treated water per employee	161 512 m^3/employee/year
Income per employee	27 920 LBP/year/employee
Expenses per employee	49 587 LBP/year/employee
Number of computers per employee:	0,378 computer/employee

4.2 CURRENT ORGANISATION

The following tables show the current positions filled in the organization either by their official holders or by proxy as well as the unfilled positions.

We have quantified the missing positions that are summarized in the top left corner of each table.

Table 16 shows the need for a yearly amount of 1.3 million USD to cover all missing positions for department and unit heads.

Figure 4
NLWE General organigram

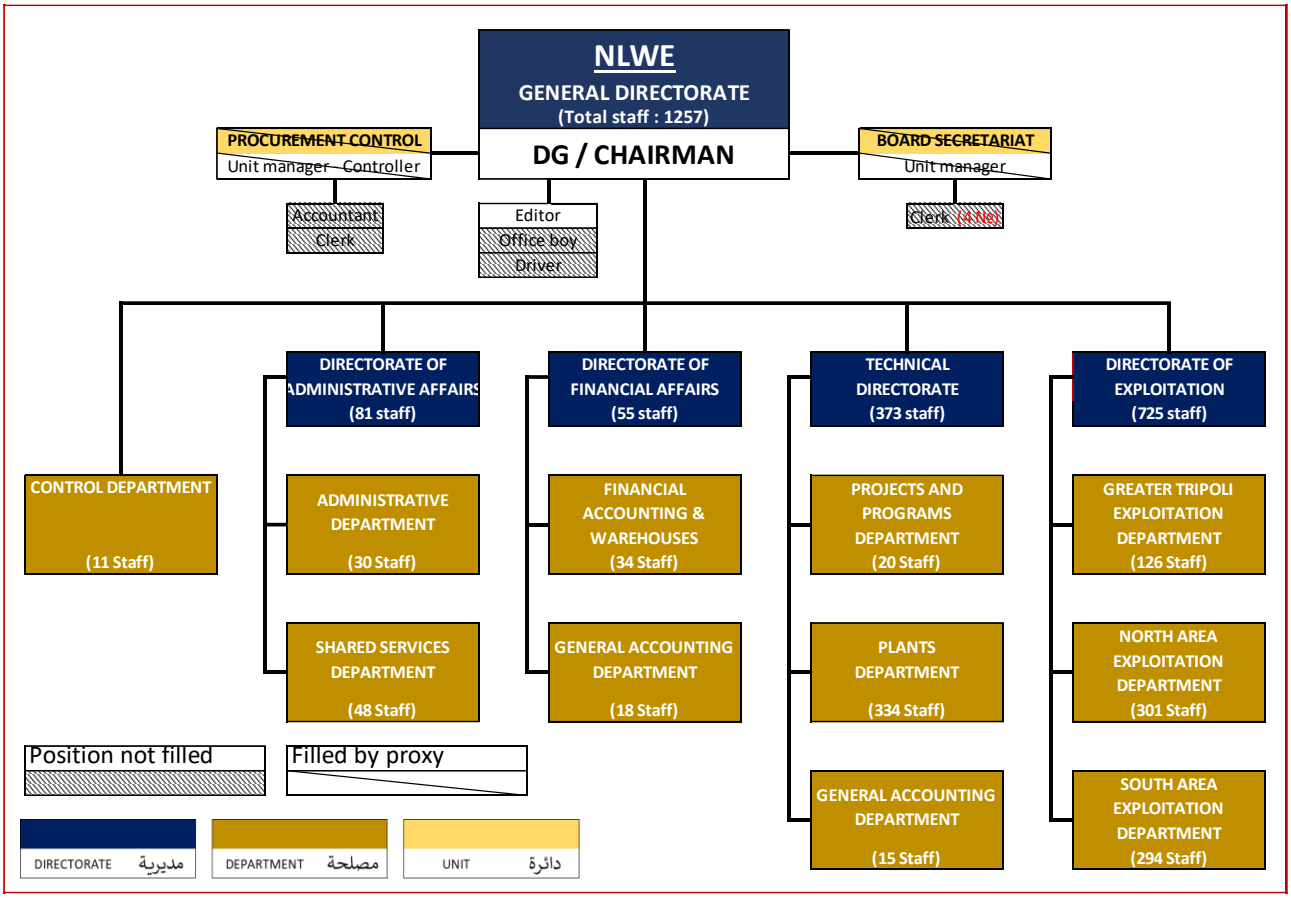


Figure 5
NLWE Control department organigram

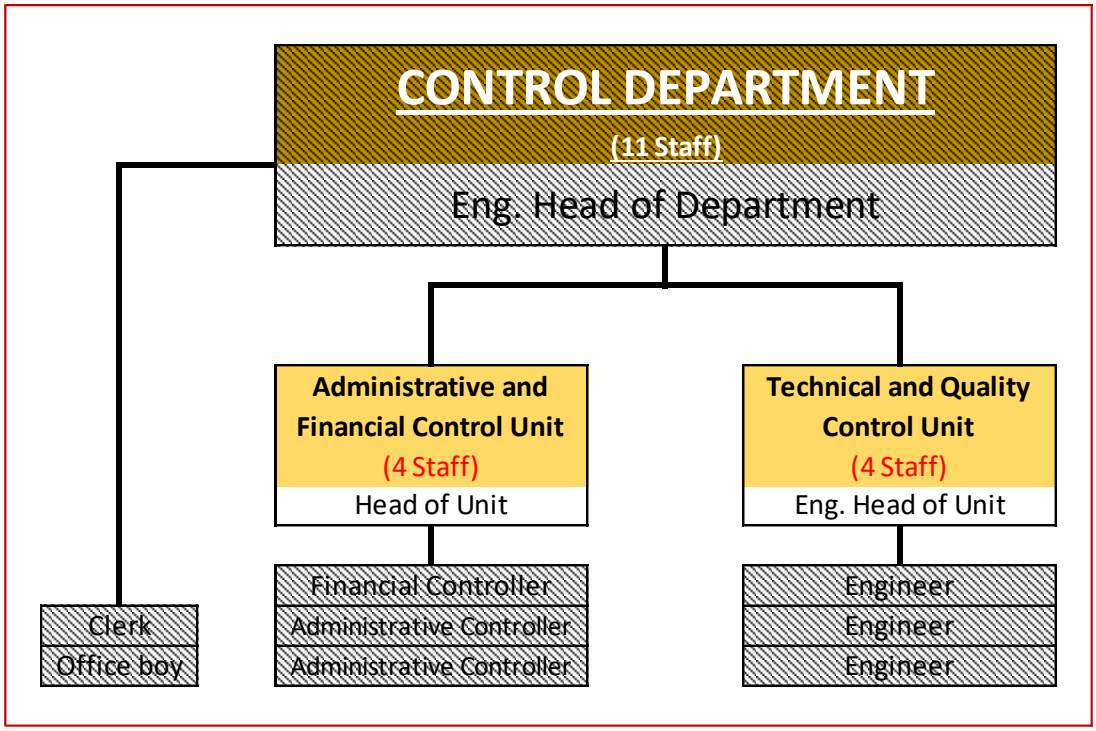


Figure 6
NLWE Administrative Directorate organigram

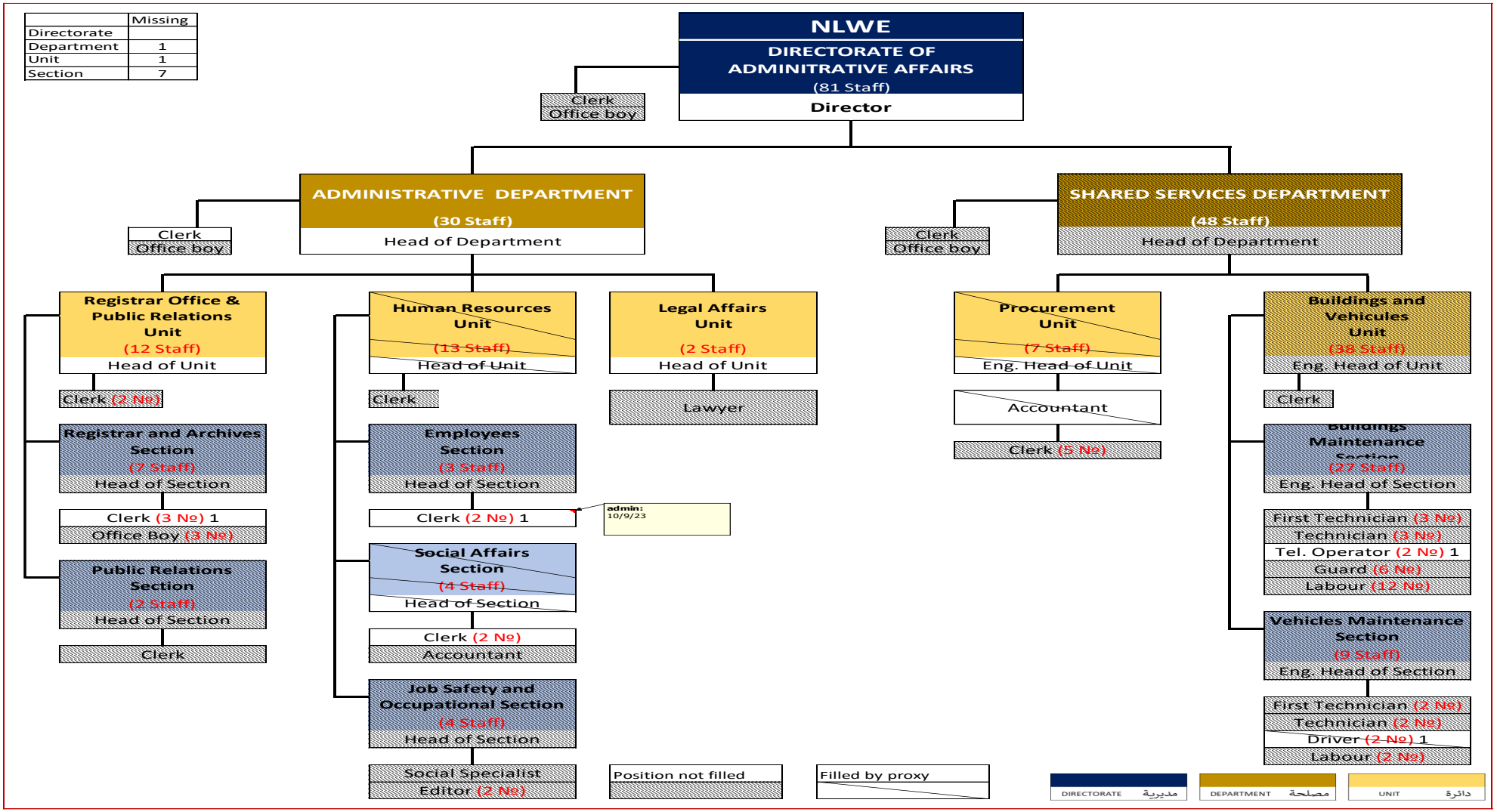


Figure 7
NLWE Finance Directorate organigram

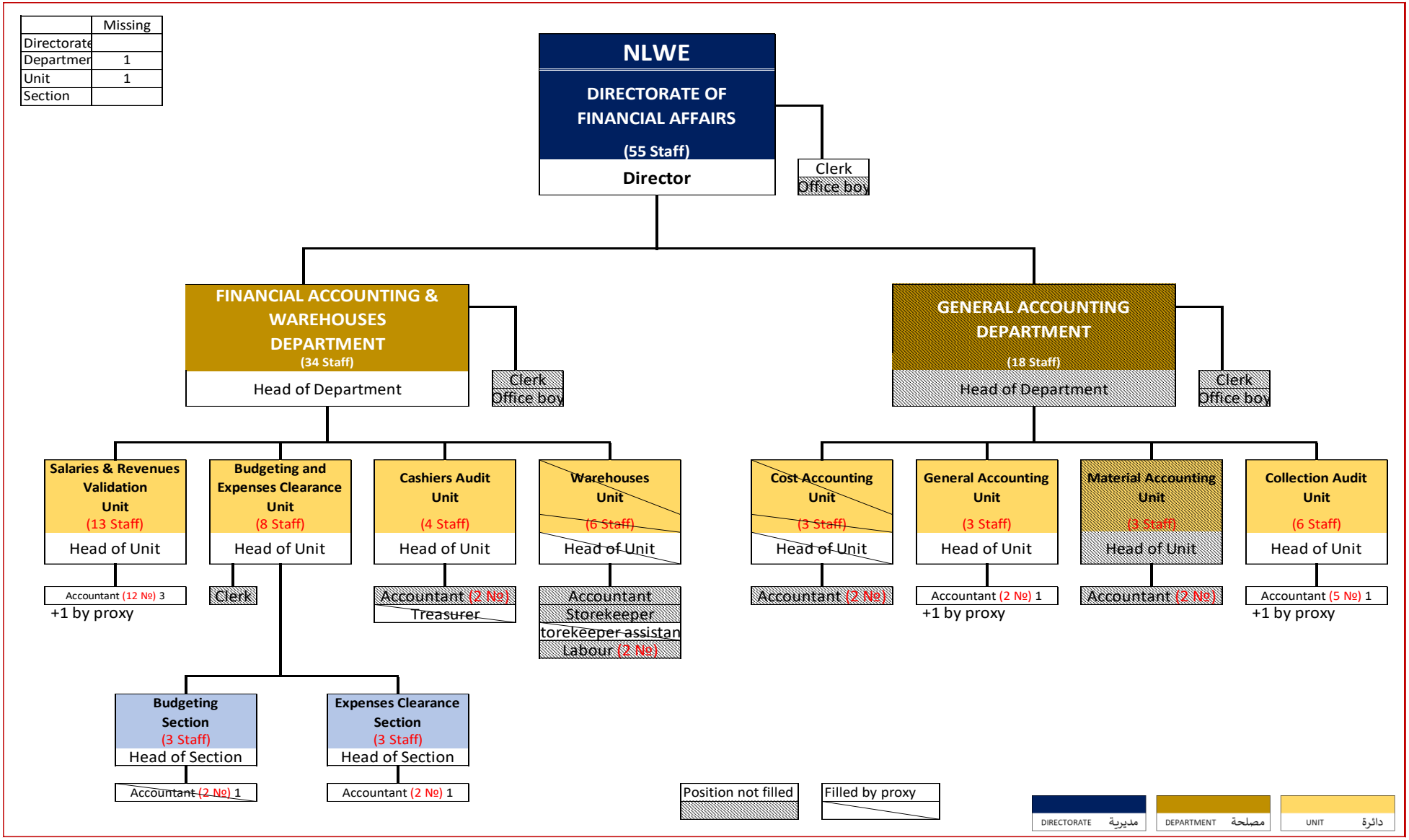


Figure 8
NLWE Technical directorate organigram

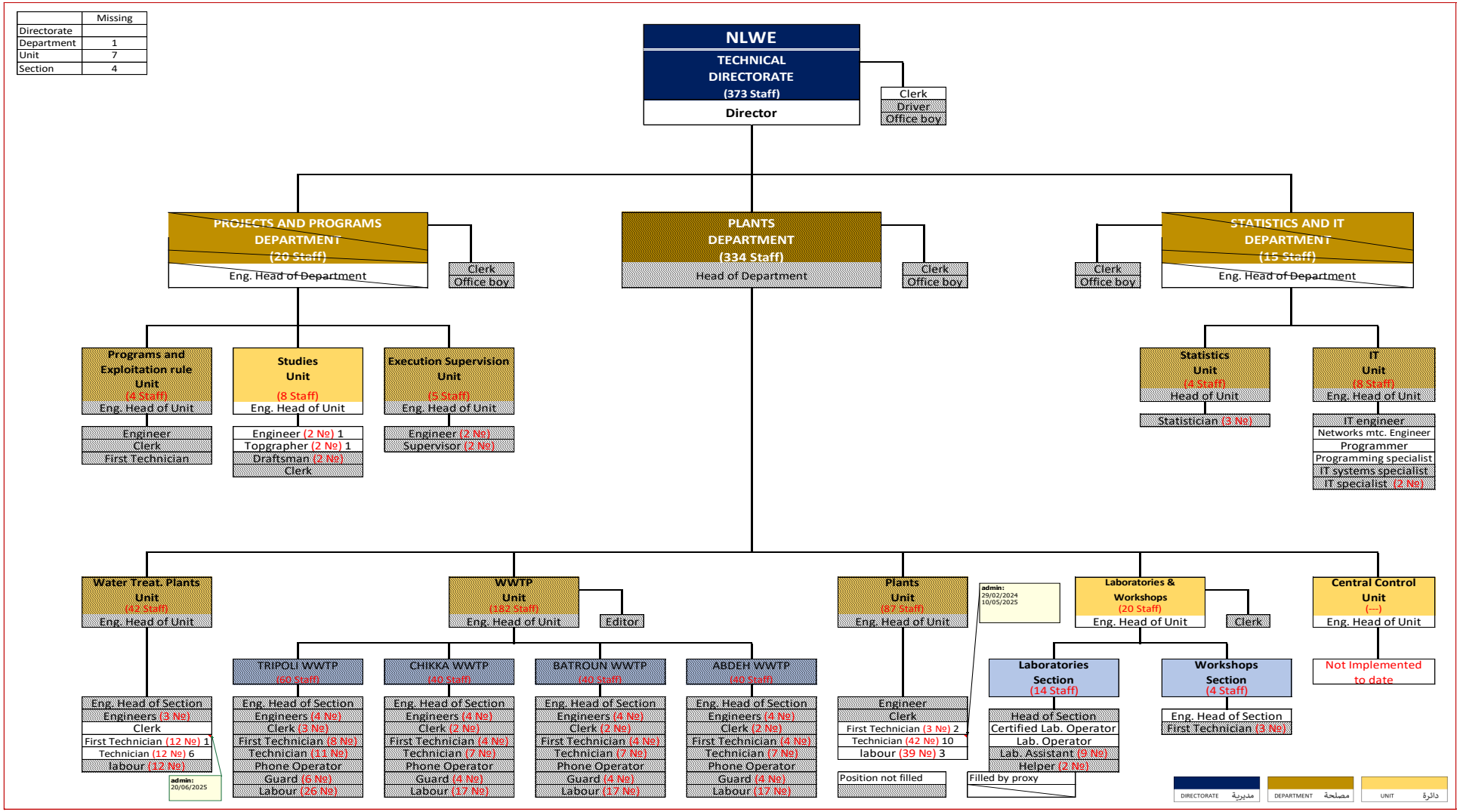


Figure 9
NLWE Exploitation Directorate (Tripoli)

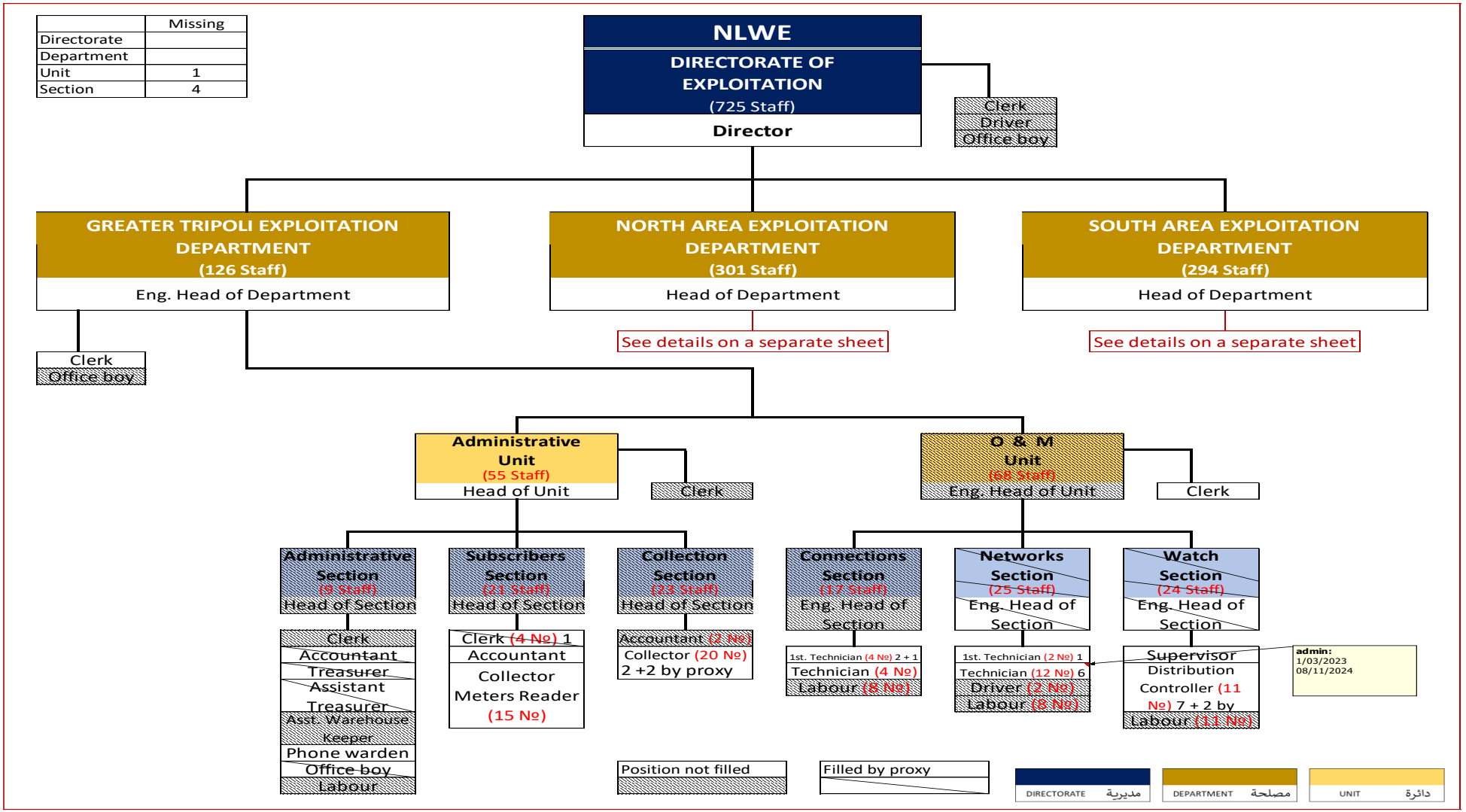


Figure 10
NLWE Exploitation Directorate (North Area)

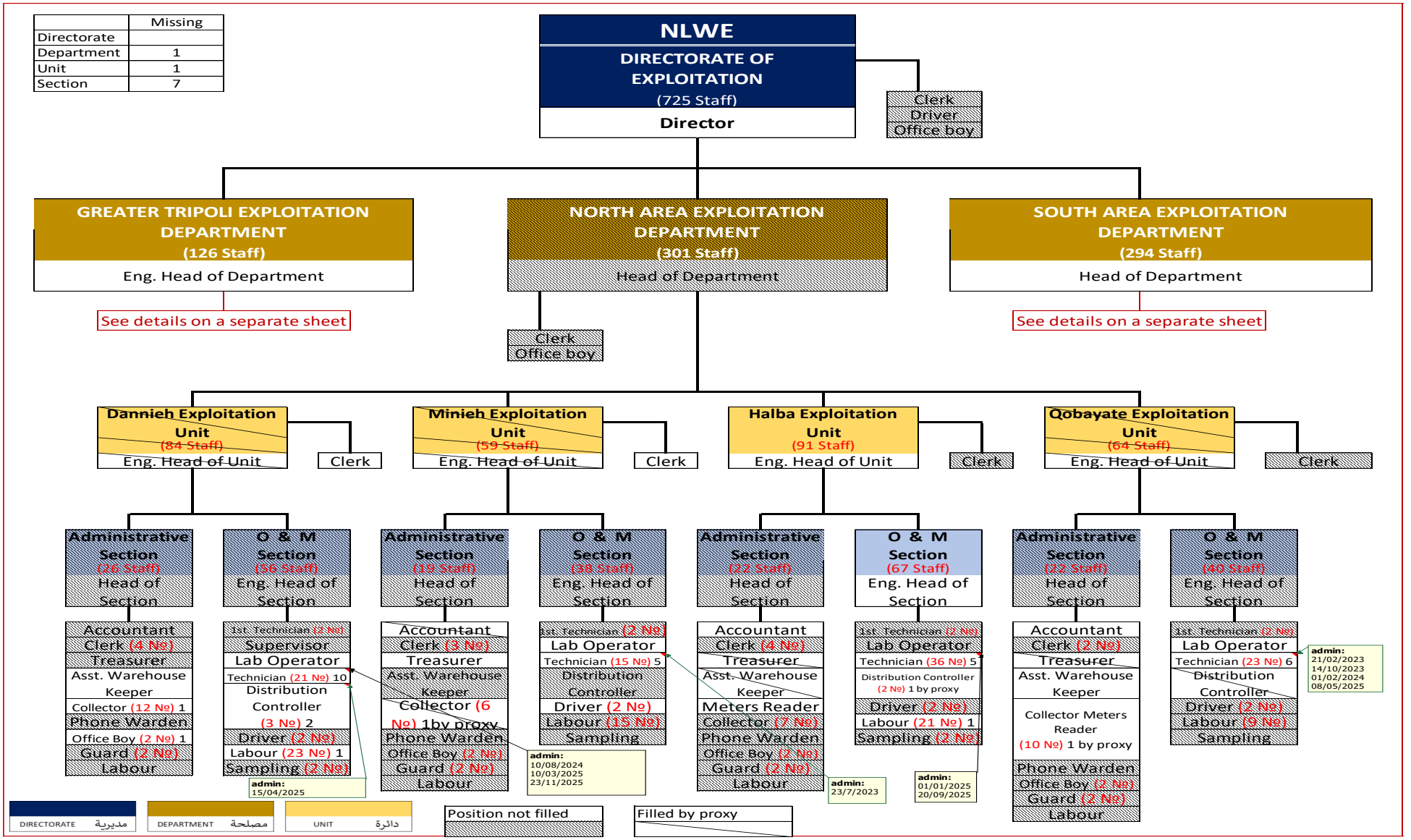


Figure 11
NLWE Exploitation Directorate (South Area)

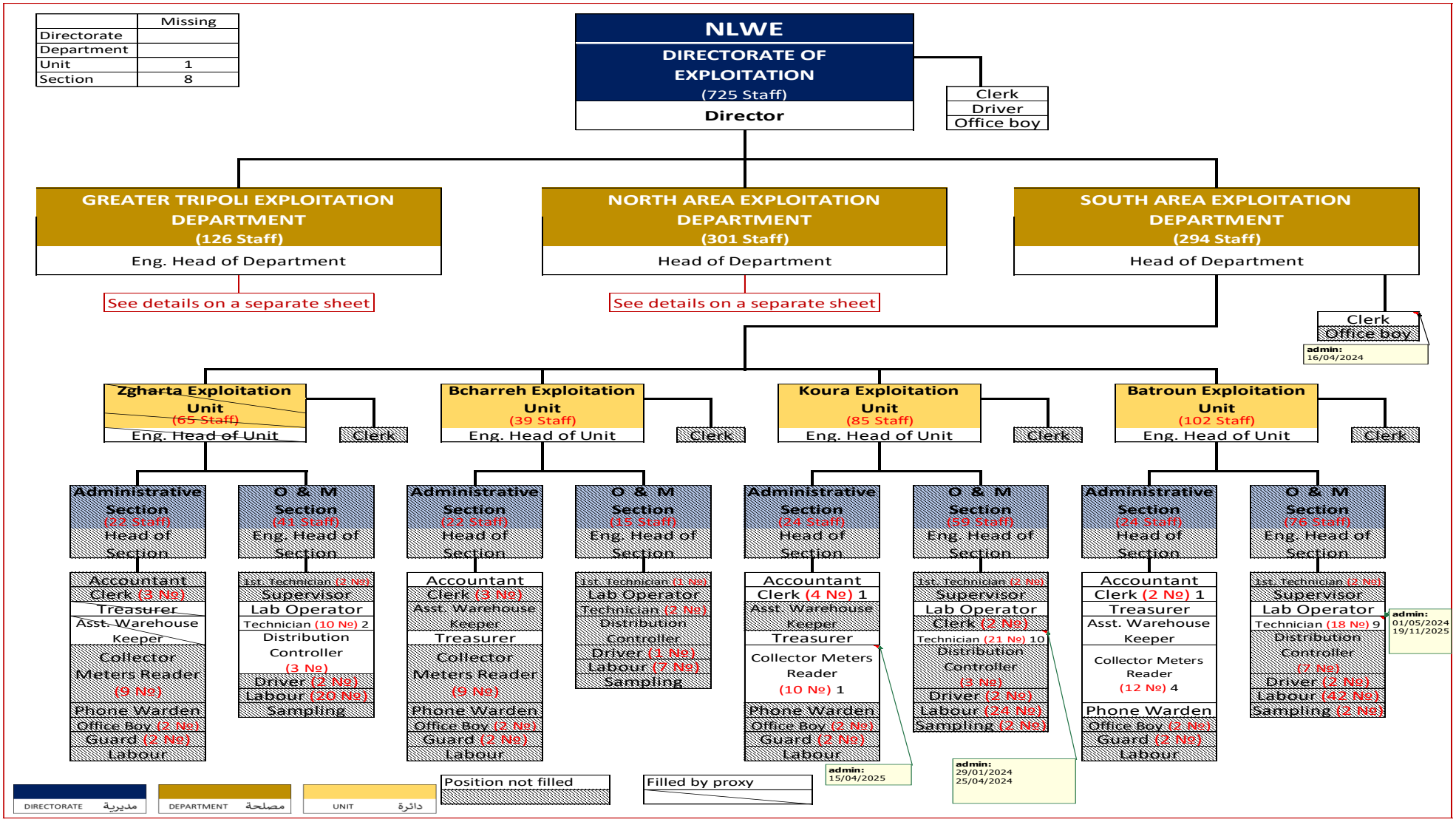


Table 166
NLWE costing of unfilled positions

Missing personnel NLWE

Directorate	Scale	Sub-scale	number	Monthly Unit salary	Yearly total salary
Control	2		1	$ 2 900	$ 34 800
Administrative	2		1	$ 2 900	$ 34 800
	3	1	1	$ 2 033	$ 24 396
	3	2	7	$ 1 973	$ 165 732
Finance	2		1	$ 2 900	$ 34 800
	3		1	$ 2 033	$ 24 396
Technical	2		1	$ 3 220	$ 38 640
	3	1	7	$ 2 247	$ 188 748
	3	2	4	$ 2 187	$ 104 976
Exploitation	2		1	$ 3 220	$ 38 640
	3	1	3	$ 2 247	$ 80 892
	3	2	19	$ 2 187	$ 498 636
					$ 1 269 456

4.3 SALARY SCALE

During our WE manager interviews, we noticed a common complaint about their personnel efficiency and proficiency. They have blamed various factors:

-Employees have come from the old “offices” structures with a lack of independence and initiative spirit.

-Limited hiring possibilities with no choice thru interviews when the hiring comes from the civil service board process where winners of exam sessions must be taken in the order of exam results without any consideration for previous experience and motivation that can be sensed thru direct interviews.

-Imposed salary scale, lower than what the private sector can offer for similar jobs.

For this last issue, we have tried to establish a comparison between the prevailing salary scale in 2019 and a benchmark for the private sector. We have obtained a private study done by Infopro SAL, a leading business, and economic research organization, for the Leaders Club, a business owner networking initiative. The part of the study that we used can be found in Annex 6.4

The study provides indicative salary brackets for various job positions according to their industry. Utilities are not one of the included categories, so we had to pick and choose from the various offered categories with our default choice going to the manufacturing sector.

For WE salaries we took the scale provided to us by the NLWE. Annex 6.5.

We chose to use 2019 figures with a dollar exchange rate of 1,500.00LBP for one dollar as the last stable basis for comparison. Today the devaluation of the Lebanese currency has disrupted the market and it is not possible even for private companies to rely on any comparative study as various actors have chosen to respond in very different ways mixing payments in cash with payments on different conversion rates.

Table 177
Salary scale comparison

RWE				Private sector					
Category	**sub-category**	**Position**	**Salary @ grade 11**	**Position**	**industry**	**Salary min**	**Salary Max**	**Difference with Midpoint**	**Difference %**
Category 1		Chairman	$ 4 267,00	General manger	Manufacturing	$9 000,00	$10 500,00	$ -5 483,00	128%
Category 2	Management	Direct. Administration	$ 2 900,00	Human resource manager	Manufacturing	$3 600,00	$ 4 200,00	$ -1 000,00	34%
		Direct. Finance	$ 2 900,00	Finance Manager	General position	$6 000,00	$ 7 800,00	$ -4 000,00	138%
Category 2	Technical	Direct. Technical	$ 3 220,00	Production manager	Manufacturing	$5 000,00	$ 6 000,00	$ -2 280,00	71%
		Direct. Operation	$ 3 220,00	Production manager	Manufacturing	$5 000,00	$ 6 000,00	$ -2 280,00	71%
Category 3-1	Management	Chief accountant	$ 2 033,00	Chief accountant	General position	$3 500,00	$ 4 500,00	$ -1 967,00	97%
		Admin & HR	$ 2 033,00	Human resource manager 10y exp.	Manufacturing	$2 500,00	$ 3 100,00	$ -767,00	38%
Category 3-1	Technical	Head of Treatment plants, Laboratory	$ 2 247,00	Quality Assurance	Manufacturing	$2 600,00	$ 3 500,00	$ -803,00	36%
		Exploitation regional manager	$ 2 247,00	Warehouse manager	Manufacturing	$2 500,00	$ 3 200,00	$ -603,00	27%
Category 3-2	Management	Budgeting/expenses cl	$ 1 973,00	Senior Accountant	General position	$2 500,00	$ 3 000,00	$ -777,00	39%
Category 3-2	Technical	Head of section	$ 2 187,00	Surveyor	Construction	$2 300,00	$ 2 800,00	$ -363,00	17%
								Average	**63%**

The only purpose of such a comparative study is to show a general overview of the situation and must not be taken as a hiring rule for any particular position. Private sector salaries in Lebanon are always implied as being in the Beirut greater area. Salaries offered in the regions are usually lower but we have no data on the % differential.

We can see from table 17 that the differences in salaries can vary from 17% to 138% with an average of 63%. This must only be considered as one of the problems facing the recruitment of adequate personnel by the WE.

4.4 NORMATIVE FRAMEWORK

The Ministry of Labour governs the labour market, regulates labour relations and enforces labour laws. Understaffed, with a limited budget and low technical capacity, its activities are confined mainly to administrative work and limited labour inspections.

The Lebanese Labour Law was passed in 1946 (Code du Travail – 23/09/1946). Some amendments have been implemented since then, in particular in 1962, 1993 and 1996. Recent amendments were promulgated in 2000 (law n°207 26/05/2000. Avoiding discrimination between men and women).

The Lebanese Labour Law is applicable to all employees and employers except for domestic and agricultural workers, enterprises limited to family members and public servants.

According to Article 7: "*Sont exceptés de la présente loi […] les services gouvernementaux et municipaux pour ce qui concerne les employés et les salariés provisoires ou journaliers auxquels ne s'appliquent pas les règlements des fonctionnaires. Ces agents feront l'objet d'une loi spéciale*".

General features of the Labour Law

- Probationary periods, during which the employer or employee may terminate the employment contract without notice. The duration is for three months and is non-renewable.
- All employees must have a standard-format written employment contract, containing specified information.
- The maximum duration of a fixed-term contract is one year automatically renewed.
- Working hours must not exceed 48 hours per week.
- Employees are generally entitled to a one-hour break after five hours' work and to a weekly rest day, usually on Sundays.
- Employees are entitled to paid annual leave after they have completed one year's service. Paid annual leave varies depending upon the total number of years completed service.
- Employees are entitled to a Schooling Allowance as per the National Social Security Fund (NSSF) for children aged between 3–21 years of age.
- Pregnant employees are entitled to 70 days of maternity leave on full pay. An employer must not dismiss a pregnant employee nor send any notice during the pregnancy or maternity leave
- Employees are entitled to sick leave after the successful completion of their probation period.
- The employer may not discriminate between working men and women regarding: type of work, amount of wage or salary, employment, promotion, professional qualifications, and apparel.
- There is a general, non-specific ban on any discrimination that prejudices equal opportunity employment, equal access to jobs, equal continuity of employment or equal enjoyment of rights, and on discrimination between employees with the same work duties. Disability is the only ground on which discrimination is specifically prohibited.
- Employers must provide employees with adequate means of protection against hazards of occupational injury and disease that may occur during work. They also have a range of specific obligations in this area.
- In principle, an employer may dismiss an employee at any time providing the required official written warnings registered at the Ministry of Labour. Other reasons for termination will lead to unlawful termination and full end-of-service gratuity.

The minimum wage in the public and private sectors is set by the government following consultation with employers and workers. Lebanon's monthly minimum wage was established at 675 000 LBP, which amounted to US$ 450 before the currency's collapse. With the crisis, it went down to US$ 30. Recently, Decree 9129 of 13/05/2022 increases the minimum wage for workers in the private sector, bringing it to a total of 2 million LBP/month. This translated to around 74 US$/month at the exchange rate of that time. The decree also approved additional financial support to civil servants of 1 325 000 LBP/month for wages that do not exceed 4 000 000 LBP/month.

In addition to the minimum wage, a salary scale also applies in the public sector. This is based on the position and rank of the respective employee.

Staff members are recruited through the Public Service Council. They are classified under categories:

- Category 1 is the highest level with high qualifications (engineers or advanced university graduates). Individuals in this group perform management functions.
- They are directly supported by people under Category 2, also of high qualification level.
- Category 3 is for individuals of intermediate level that assist the higher category people in team management. They oversee managing projects, missions, reports' production… etc. The qualification level of people under this category is high. They also include engineers for example.
- Finally, categories 4 and 5 are made up of task execution teams with lower qualifications (technical BT, high school or even no degree whatsoever).

The National Social Security Fund (NSSF) manages key elements of the social insurance system. It provides health insurance, an end-of-service indemnity, and family allowances to formal workers in the private sector. Private sector workers not covered by the NSSF or the civil service (around 50% of the labor force, including informal wage earners and self-employed people) can, in principle, obtain health coverage from the Ministry of Public Health. However, the coverage offered by the ministry is insufficient for the Lebanese population's needs. Furthermore, no unemployment fund exists to support those who lose their job or do not find one in the first place.

According to the site salaryexplorer.com (2022):

- 2 280 000 LBP/month is the average monthly salary including housing, transport, and other benefits.
- The median salary is 2 140 000 LBP/month
- Reading from the salary distribution diagram, 25% of the population earns less than 1 220 000 LBP while 75% earns less than 5 790 000 LBP.

4.5 STAFF PRODUCTIVITY

Staff productivity is a usual element of comparison when benchmarking WSS utilities. The number of employees per 1 000 active connections is the most usual KPI employed by the benchmarkers. Table shows KPIs obtained for different utilities worldwide.

2-3 employees/1000 connections is generally considered as good performance for utilities in developed countries. A ratio up to 4-5 is still accepted as a rather efficient result in less developed countries.

Table 18
WASREB (Kenya) – Evaluation of staff productivity (employees / 1,000 active connections)

WASREB, the national water regulator publishes every year a Performance Report of Kenya's water Services Sector, reviewing performance of 90 water utilities across the country.

As a rule, WASREB considers the following values for scoring national utilities in terms of staff productivity:

Size of utilities	Good	Acceptable	Not acceptable
Large companies	< 5	5 – 8	> 8
Medium companies	< 7	7 – 11	> 11
Small companies	< 9	9 – 14	> 14

Source: WASREB Impact Report n°14

According to WASREB last IMPACT n°14 report (data for the fiscal year 2020/21), the average staff productivity at the national level is stable at 7.4 employees per 1,000 active connections. The KPI is smaller for the very large utilities (2.9 in Nakuru, 3.9 in Eldoret, but 8.1 in Nairobi, and 9.0 in Mombasa), and higher for the smallest (up to 70).

With about 130 000 registered connections and 735 effective employees, the number of staff per 1 000 connections of NLWE is close to 5,65, which may be considered as a regular performance ratio, when compared with international benchmarking.

However, it may be observed that this indicator has limitations as a tool to compare staff productivity:

- All Utilities do not have the same perimeter of activities. Some utilities jointly manage electricity and water distribution. Other include solid waste removal in their scope of work, etc.

  For example, it would be difficult to compare the staff efficiency of LYDEC with other W&S utilities, as the Moroccan company is in charge of both water and electricity services for Casablanca. The staff dedicated to water and wastewater departments is relatively limited, but a larger contingent of employees works for common services (including commercial services)

Table 19
LYDEC (Casablanca - Morocco) – Nº of employees per activity – 2021

Activity	N° of employees	%
Water	273	9
Wastewater	362	12
Electricity	411	13
Public Lighting	105	3
Customer services	1 140	36
Common services	837	27
Total	3 128	100

Source: LYDEC Annual Report 2021

NLWE's perimeter includes irrigation services, which are usually not on the behalf of W&S utilities. At least 70 people are employed (through outsourcing) in the irrigation sector.

- Moreover, the relative weight of sewerage may differ a lot. In general terms, water utilities are also in charge of sanitation operations in the same area. But this is not the case everywhere. In Tunisia, for example, SONEDE is the public company responsible for water supply services of the whole country, while a distinct national public company, ONAS, oversees sanitation. In international comparisons, SONEDE often appears as one of the most efficient companies in terms of staff per 1,000 water connections. This is in part due to an effective high staff productivity of the Tunisian company, as more in-depth analysis can demonstrate, but there is a bias when SONEDE's low number of employees per 1,000 water connections is compared with the same KPI of other utilities, which must also deal with sewerage O&M.

Table 20
Tunisia – Staff productivity – Water and Sewerage

Company (2020)	N° of customers	N° of employees	Staff / 1,000 connections (W+S)
SONEDE (Water)	3 038 656	6 239	2.05
ONAS (Sewerage)	2 125 000	3 241	1.53
Total	5 163 656	9 480	1.84

Source: SONEDE and ONAS – end of 2020

- The concept of "active" connections is not well defined everywhere. In Jos (Plateau state, Nigeria), the customer database of JOWASCO, the state-owned water utility, gathers a total of about 28,000 registered customers. The database is outdated, and it is estimated that the real number of existing connections is higher, possibly around 35,000. However, the billing process of the utility is not efficient. Less than 7,000 customers are regularly billed and may be considered as active. Of course, dividing the 278 employees (as of May 2022) by 28,000, 35,000, or 7,000 will provide very different values for the staff productivity KPI.
- The number of employees underestimates the manpower needs when activities are outsourced. In Brazil, most utilities are presently used to outsource core tasks such as meter reading and bill distributing to specialized private entities, through different types of contracts. As a result, the number of direct employees is rather low but does not fully translate the staff productivity. The Brazilian national benchmarking system, SNIS, tries to observe a second indicator, adding to the number of employees the number full time equivalent workers mobilized through outsourcing, but this last information is not easy to estimate, and the result is not very reliable.

  In 2020, the total number of direct or indirect (outsourced) staff working for the Brazilian W&S utilities was estimated to be 229,100 people, out of which 150,200 (66%) are direct employees and 78,900 (34%) are outsourced workers.[10] This estimate leads to an average of 2.7 employees per 1,000 connections at the national level, meanwhile, the national average hides relevant regional variations:

  - 2.0 for the State of Parana and 2.1 for the State of São Paulo, in the more developed South-East of the country,

[10] SNIS (2022). *Diagnóstico temático – Serviços de Água e Esgoto – Gestão administrativa e financeira (ano de referência 2020.*

- Respectively 4.8 and 2.9 in the less developed macro-regions of the North and the Northeast.

Despite the conceptual limitations listed above, the number of employees per 1,000 active connections remains the stronger and most commonly used KPI to compare staff productivity among water utilities.

Table 21
Benchmarking staff productivity

Region	Country	City	Utility	Year	Source	N° wat. conn.	N° sew. conn.	N° staff	Staff W/000 W Conn.	Staff / 000 W+WS conn.
Asia C	Armenia	Yerevan		2016	IBNet	461 133	941	297 505	2,0	1,2
Asia C	Kazakhstan	Almaty		2016	IBNet				3,3	
Asia C	Uzbekistan	Tashkent	Suvsoz	2018	OpT	602 218	558 018	3 622	6,0	3,1
Asia S	Bengladesh	Dhaka	DWASA	2017	IBNet				7,6	7,2
Asia S	Bengladesh	Chittagong	CWASA	2017	IBNet				10,6	
Asia S	Myanmar	Mandalay	MCDC	2018	OpT	91 627		444	4,8	
Asia S	Pakistan	Lahore	Lahor WASA	2019	OpT	452 266	707 390	9 657		8,3
Asia S	Pakistan	Faisalabad	WASA	2019	OpT	118 422	262 339	2 688		7,1
Asia S	Sri Lanka	Colombo City	NWSDB	2018	OpT	146 881		500	3,4	3,4
Asia SE	Cambodia	Phnom Penh	PPWSA	2020	Aspa	407 779		1 114	2,7	
Asia SE	Cambodia	Siem Reap	SRWSA	2018	OpT	8 797		112	12,7	
Asia SE	Indonesia	East Java	SWU	2018	OpT	564 104	3 131	1 185	2,1	2,1
Asia SE	Indonesia	West Java	UPTD PAL	2017	OpT	154 132	2 606	451	2,9	2,9
Asia SE	Malasia	Penang	PWSC	2021	IBNet				7,5	9,9
Asia SE	Vietnam	Hue Province	HueWACO	2018	OpT	255 695		528	2,1	2,1
Europe	Bulgaria	Sofia	Sofiyska Voda	2016	IBNet				6,2	
Europe	Finland	Helsinki	HSY	2020	IBNet				2,6	2,6
Europe	France	Paris	EAU de PARIS	2021	ASPA	95 000		900	9,5	9,5
Europe	France	Strasbourg	Régie	2021	ASPA	73 586	69002	304	4,1	2,1
Europe	Portugal	Lisbon	EPAL	2020	ASPA	103 536		383,6	3,7	3,7
Europe	Portugal	Porto	Aguas do Porto	2020	ASPA	71 225	60070	436,9	6,1	3,3
Europe	Serbia	Belgrad	BVK	2020	IBNet				9,7	9,0
Europe	United Kingdom	Wales	Welsh Water	2016	IBNet				2,9	1,8
Europe	United Kingdom	Bristol	Bristol Water	2016	IBNet				0,9	
Latin America	Brazil	São Paulo State	SABESP	2020	SNIS	8 961 967	7 680 388	21 920	2,4	1,3
Latin America	Brazil	Rio de Janeiro S	CEDAE	2020	SNIS	2 729 547	885 702	7 983	2,9	2,2
Latin America	Brazil	Minas Gerais	COPASA	2020	SNIS	4 438 378	2 960 307	14 234	3,2	1,9
Latin America	Brazil	Parana	SANEPAR	2020	SNIS	3 273 807	2 308 135	10 236	3,1	1,8
Latin America	Brazil	Bahia	EMBASA	2020	SNIS	3 197 449	1 312 545	9 592	3,0	2,1
Latin America	Brazil	RS	CORSAN	2020	SNIS	2 002 046	235 621	6 560	3,3	2,9
Latin America	Brazil	GO	SANEAGO	2020	SNIS	2 270 106	1 261 012	7 599	3,3	2,2
Latin America	Brazil	DF	CAESB	2020	SNIS	699 779	608 398	2 985	4,3	2,3
Latin America	Brazil	PE	COMPESA	2020	SNIS	2 026 205	411 155	7 812	3,9	3,2
Latin America	Brazil	CE	CAGECE	2020	SNIS	1 696 655	650 037	2 584	1,5	1,1
Latin America	Brazil	SC	CASAN	2020	SNIS	798 713	109 985	3 358	4,2	3,7
Latin America	Brazil	PB	CAGEPA	2020	SNIS	828 651	275 209	3 623	4,4	3,3
Latin America	Brazil	ES	CESAN	2020	SNIS	590 335	278 764	2 381	4,0	2,7
Latin America	Brazil	RN	CAERN	2020	SNIS	741 847	200 281	2 766	3,7	2,9
Latin America	Brazil	MS	SANESUL	2020	SNIS	510 166	229 498	2 815	5,5	3,8
Latin America	Brazil	SE	DESO	2020	SNIS	587 496	144 177	2 246	3,8	3,1
Latin America	Brazil	MA	CAEMA	2020	SNIS	571 844	116 788	2 801	4,9	4,1
Latin America	Brazil	AL	CASAL	2020	SNIS	427 151	75 914	1 640	3,8	3,3
Latin America	Brazil	PA	COSANPA	2020	SNIS	444 793	52 293	2 561	5,8	5,2
Latin America	Brazil	PI	AGESPISA	2020	SNIS	424 367	45 570	1 688	4,0	3,6
Latin America	Brazil	RO	CAERD	2020	SNIS	140 750	9 280	679	4,8	4,5
Latin America	Brazil	RR	CAER	2020	SNIS	118 779	89 696	870	7,3	4,2
MENA	Egypt	Sharquia		2015	IBNet				2,6	3,2
MENA	Egypt	Dakahlia		2015	IBNet	1 122 668			4,3	3,8
MENA	Egypt	Beheira		2015	IBNet				9,0	13,2
MENA	Jordan	Amman	MIYAHUNA	2020	ASPA	730 740		1 774	2,4	
MENA	Mauritania	Nouakchott	SNDE	2018	OpT	110 000	9 950	817	7,4	6,8
MENA	Oman	Oman	PAEW	2015	IBNet				5,1	
MENA	Tunisia	National	SONEDE	2020	ASPA	3 038 656		6 239	2,1	
MENA	Tunisia	National	ONAS	2020	ASPA		2 125 000	3 241		1,5
SSA	Centrafrique	Bangui	SODECA	2017	OpT	16 877		228	13,5	
SSA	Djibuti	National	ONEAD	2018	OpT	42 132		316	7,5	
SSA	Kenya	Nairobi	NCWSC	2021	WASREB	400 693	244 095	3 239	8,1	5,0
SSA	Kenya	Mombasa	MOWASSCO	2021	WASREB	41 648		374	9,0	
SSA	Kenya	Eldoret	ELDOWAS	2021	WASREB	85 736		331	3,9	
SSA	Kenya	Nakuru	NAWASSCO	2021	WASREB	64 795		188	2,9	
SSA	Madagascar	National	JIRAMA	2020	IBNet				4,4	
SSA	Malawi	Lilongwe	LWB	2019	Esawas	90 658		581	6,4	
SSA	Mali	National	SOMAGEP-SA	2017	OpT	210 730		1 227	5,8	
SSA	Mozambique	Maputo	AdeM	2019	Esawas	256 839		832	3,2	
SSA	Nigeria	Lagos	LWC	2018	IBNet				7,5	
SSA	Nigeria	Kano	KNSWB	2020	IBNet				11,6	
SSA	Nigeria	Calabar	ORTECH	2015	OpT	40 000		232	5,8	
SSA	Rwanda	National	WASAC	2019	Esawas	213 706		1 376	6,4	6,4
SSA	Senegal	National	SONES	2017	OpT	683 421		1 311	1,9	
SSA	Senegal	National	ONAS	2018	OpT		129 967	585		4,5
SSA	Tanzania	Dar es Salaam	DAWASCO	2019	Esawas	261 294	19 806	1 113	4,3	4,0
SSA	Uganda	National	NWSC	2019	Esawas	659 157	22 606	3 778	5,7	5,5
SSA	Zambia	Lusaka	LWSC	2019	Esawas	109 454	36 117	888	8,1	6,1

Source: ASPA Benchmarking Database

5 GAP ANALYSIS AND IDENTIFICATION OF MAIN ISSUES

5.1 SUMMARY OF THE 360º DIAGNOSIS

Summarizing the overall review of NLWE performances, the establishment appears in Table 22 360º summary of the existing situation

as a rather weak utility.

NLWE shows deficiencies in many items, but the most negative points are the consequence of the inappropriate (or incomplete) institutional framework, worsened by the impact of the national crisis on the sector. It would be very surprising for a water utility to obtain good performance and to demonstrate efficiency in such a difficult environment.

Table 22
360º summary of the existing situation

Area	Topic	Note	Comment
Billing / collection / customer attention	Consistency and reliability of the customer database		Consistent and reliable at 75%
	Appropriateness of IT tools - CIS & billing		Under implementation
	Management of new connections / new customers		Unclear procedures. Tripoli ≠ other areas
	Commercial relationship with customers		Limited
	Existence and quality of contracts with customers		Not effective
	Communication policies (including internet)		Only by local medias
	Customer debt management & disconnection policies		Disconnections not applied.
	Collection management		Weak
Metering and Non-Revenue Water	Overall policy related to metering		No policy
	Meter management		Weak
	Meter reading management		Weak
	Control of frauds and illegal connections		Not under application
	Leakage management (physical losses)		No historical data
	Procedures of interventions on leakages and bursts		Basic organization
	Existence of DMA type approach		No for the time being
Ability in engineering and investment planning	Internal engineering capacity. Tools and models		Not assessed
	Existence and quality of updated masterplans		No
	Knowledge and mapping of networks		Very limited
	Network maintenance, upgrading and extensions		Under average
	Competence for project management (PMU)		No, Projects not managed by the operator
Capacity in current operation & maintenance	O&M of water treatment facilities		Not assessed
	O&M of wastewater treatment facilities		WWTPs not managed by NLWE
	O&M of pumping facilities & electromechanical devices		Under average
	Operation of water distribution		Regular
	Operation and cleaning of sewerage networks		Sewerage not managed by NLWE
	SCADA and other technological means		Insufficient IT tools
	Pressure management and energy efficiency		No plans for this type of actions
	Preventive and corrective maintenance		Only limited corrective maintenance
Water quality and environmental control	Water resource management		Unclear responsibility and strategy
	Water quality control		Regular
	Sewage effluent control		Not applicable
	Sludge management		Not applicable
Administration, finance and accountancy	Consistency of financial statements		No audited statements
	ERP type tools		Available and in use
	Analytical accountancy		Not in application
	Procurement management		Confusing public procedures
	Experience with international / national donors		No direct experience
Human resources	Overall HR management and organizational charts		Limited by law
	Policy for salaries and wages		Follows public service rules
	Training and career management		No organized training policy
	Outsourcing capabilities		Very limited as not allowed by law
Management – Information & reporting	Existence and quality of annual reports		Annual reports to the ministry not disclosed
	Information flows within the company		Very limited
	Policy of external communication		Weak
	GIS management		GIS available for part of the area
	Asset management		Inexistent
	Crisis management		No anticipated crisis procedures
	Demand forecasting and tariff policy		No demand forecasting
	Relationship with regulator and/or tutela		Mutual obligations are not well defined
Governance	Legal framework and regulation scheme		Unadapted, the key issue
	Clarity of the utility's mission and objectives		Lack of clear objectives
	External auditing and tutela		

5.2 REVIEW OF KEY ISSUES

5.2.1 Defining better the role and status of an WE

First, it is necessary to better define what is the exact status and role of an WE.

- Is an WE a "company" (although owned by the State) or an "authority"?
  - The original spirit of Law 221/2000 gave a status of independent organization, self-sufficient in terms of finance, and autonomous in terms of internal administration. This spirit has been jeopardized by subsequent legal decisions. It needs to clearly decide which is the model to be followed by the WEs.
  - In our opinion, the application of the rules defined by the Public Service Council is incompatible with the activity of an operating company. By definition, the day-to-day operation of a public service means flexibility and capacity to adapt the organization according to the needs. Neither the organizational chart nor the number of employees can be restricted by law. In an operating company, the organization of the entity and the way to allocate employees are typically the job, the skill, and the responsibility of the general management. The management is controlled by the tutela or the shareholders based on results it can achieve, financially as well as technically.
- Who owns and takes care of the facilities? Using the French nomenclature, is the WE a "fermier" or a full "concessionaire"?
  - What is the relationship between the CDR and an WE? The CDR manages the financing and the construction of new installations. Is he supposed to transfer the facility as soon as it is commissioned?
  - Who pays for the heavy maintenance and the replacement of obsolete equipment?
  - What is supposed to be covered by the tariff: only the O&M costs or also the amortization of the assets?
- How the relationship between the WEs and the tutela (the MoEW) is organized and how are the tasks shared between them?
  - The WEs are under the supervision of the MEW through the General Directorate of Operation. But such a relation is not clarified by any procedure specifying the rights and obligations of each party.
  - Who has the overall responsibility for master planning, investment, and long-term strategy? Is the WE supposed to have a strong planning unit or just the mini unit to manage the current O&M?
  - Which documents (standardized annual reports, audited financial statements, etc.) are required by the Ministry to perform its own tasks as a tutela?
  - Which KPIs (Key Performance Indicators) must be followed? What are the quantitative objectives to be reached by the WE? How to revise periodically these objectives?
- What is the exact role of an WE regarding water resource management? Control of underground water tables? The existence of undeclared wells or boreholes?
- What is the commitment of the WE about sewerage collection, sewage treatment and irrigation?
- How is an WE allowed to outsource or sub-delegate certain activities?

In short, is it possible to properly determine the organizational framework and the RH issues of an WE before having a clearer "delegation contract" which defines the role of the entity?

5.2.2 Improving the quality of available information

For the time being, information does not appropriately flow within the establishment as well as outwards. Lack of reliable data significantly affects the capacity to address the big issues as listed above.

During the site visits, NLWE was requested to supply data regarding HR issues. The collected data is summarized in the Annex 6.1.

Table 23
Comments on the collected data (Nov. 2022)

Strength • the number of personnel is decreasing, because of the retirement process and because some "on demand" are not required anymore. It is important to note that according to the discussion with the managers, it is estimated that almost 20% of the "on demand" personnel is not at the required professional level. • the number of customers is increasing, bringing larger income to the NLWE • • an update of the customers data base has been started • the implementation of the global management ERP software • tariff increase plan is defined for the coming years • investigation is ongoing for the identification of the meters still operative	***Opportunities*** • the new water law decrees under preparation • the LTTA support • large number of potential future customers • the new public procurement law giving more flexibility for the procurement • the water metering for large customers • five years strategy • outsourcing
Weaknesses • no action plan has been developed for the NRW • power supply defect is a major issue for the production • the number of skilled employees is very limited • public sector salary scale is a real limitation for the recruitment of experts • the strategy for the takeover of the wastewater system is not defined yet • the amount of the debt is high • the board must be reinforced • the rate of the water bills recovery is still very limited • many activities are still ignored: communication, NRW, HR management process, water resources management, • there is no initiative for decentralizing the activities • complexity of administrative procedures • the undefined rights and obligations of the supervisory authority namely MEW • the global management software ERP requires, for specific actions, the support of external expertise. This is not sustainable in the long run	***Threats*** • the new public procurement law, the complexity of the application process • the limited availability of the number of employees • the confidence of the population in the public sector • the finance capacity • centralization • water resources quality and availability

5.2.3 Addressing legal and institutional issues at national level

As reported earlier, the NLWE was created by Law 221 – 2000 and the decrees were issued to specify the organization, the rules, and the procedures to be used.

Law 221-2000 has stated that the WEs are public and independent organizations. It was clearly mentioned that the WEs should be self-sufficient in terms of finance and that they are able to recruit their employees according to their needs. The law has specified the activities under the responsibility of the WEs. Few months later, the decrees have defined the organization chart for each WE, as well as positions and number of employees.

At this level, the WEs have faced the first issues. The new organization chart did not include any position related to wastewater, irrigation, IT, and customer services, although these activities were declared under the responsibility of the WEs.

In 2004 law nº 583-2004 article 54 made mandatory for the WEs to abide by the Public Service Council rules and procedures.

In 2005, the employees' union issued some comments on the decree, including the missed activities and the large number of employees (1257) that was considered as not justified.

It is surprising to fix by decree the number of employees at each position, making any modification very complex as any modification shall require a new decree. The issue faced today is that the NLWE does not have the number of employees required to achieve the tasks defined by the law.

In 2017 the law ref 46 - 2017 article 21 has prohibited any recruitment for all public organizations. Since this time the WEs are using private contracts with service providers to have "on demand" staff.

The WEs have lost their independence for recruitment, and for any amendment of the existing organization chart to add the missing activities such as water resources management, wastewater O&M, communication, NRW etc.)

The new public procurement law ref 244-2021, that went into application in August 2022, imposes many restrictions on the terms of reference for any tendering process, it should impact from 2023 the "on demand" contracts as the law shall not allow to recruit permanent "on demand" position, and it should limit the "on demand" to the categories 5 and 4 (site workers and low-level technician). If this is confirmed, it shall have a large impact on the organization of the WEs.

5.2.4 Addressing financial issues

As reported earlier, the WEs are supposed to be independent. They have their own board in charge of preparing the annual budget. However, two ministries are also involved in the process: the MoEW and the Ministry of Finance for the approval of the budget and the tariffs. Once again, it is important to define the rights and obligations of each party, knowing that the role of the MEW and the Ministry of Finance should be limited to checking the compliance with the procedures and not interfering with the decisions of the board.

The income of the WEs is the water bills, the tariff is proposed by the board, and must be approved by the MWE. This is a normal procedure because the tariff has a social impact, so the government must be involved in the final decision in compliance with the official global strategy.

It has been noted during the site visit that NLWE is not paying the power bills. It confirms the information shown in Table 12. This situation has generated a debt that will have to be settled in the coming years. According to the data collected the debt was 92 924 MLBP in November 2022.

For the time being there is no global strategy for outsourcing. Some of the managers are hesitating as they have the feeling that by outsourcing some activities, they shall lose some of their power, on the other side some managers are considering that outsourcing shall limit their responsibility. The strategy for outsourcing should be clarified and implemented as much as possible for any activity that is not the core business of the WE.

5.2.5 Addressing technical issues

All the assessment reports prepared on the WEs show that there is a large potential of improvement on the technical side. As an illustration, it can be reminded that the WEs are not equipped with a strong centralized SCADA, that the CMMS is not available, that the GIS tools are to be reinforced, that the CIS is not as performant as expected, that the ERP is running in parallel with old handwritten books, that water metering is not covering all customers, there is no district metering or even production bulk metering, that the WEs do not have adequate expertise for the wastewater O&M, that archiving process is still based on old paper support, that communication strategy is not clearly defined, etc.

There is a lot to do to reach the standard level of service expected from the WEs. But despite all the points reported, it is also obvious that the existing capacities are not used at the optimum. For instance, some examples can be mentioned: there is no CMMS, but the preventive maintenance can be done based on excel sheets; one other example: all customers are not equipped with water meters but the few ones that have meters (and there are thousands) can be used as a pilot sample to know the profile of the customers' water consumption, as well as the customers' data base can be reviewed and updated according to the present situation with no need to wait for an external assistance, etc. It is the responsibility of the chairman to initiate such actions and improve the quality of service, even with limited human and financial capacities.

5.2.6 Addressing management issues

Each WE has its own specific management style, it is not the purpose of the present report to assess the personal management style. It was noted that all managers have in mind to get more “autonomy” but on the other hand, in terms of responsibility, they consider that it must be shared with the MWE.

The existing rules and laws under application, even if they need to be reviewed, are not used at the optimum. One example can clarify this statement: the existing rules allow the managers to develop an annual performance assessment of each employee, such assessment can be referred to for the promotion of the employees. NLWE has used the procedure in the last few years but since 2020 it is not applied anymore.

The managers of the WEs are used to working under “emergency procedure”; any document to be signed must be done immediately. The decision process is centralized, and no delegation is under application. Hierarchical relationships must be reviewed to allow a smooth, responsible, and motivating management.

5.2.7 Addressing HR issues

As mentioned in point "a", law 221-2000 has considered the WEs as independent in recruiting their employees. But this has been limited by law 583-2004, imposing to refer to the procedure of recruitment under the control of the Public Service Council. Since that time, the WEs are not able to recruit the profiles according to their needs and are not allowed to propose salaries that are out of the official scale of the public service. This situation has negatively impacted the efficiency of the WEs actions.

The question is why the legislator has imposed such a constraint? It is assumed that the legislator had in mind the local pressure that can be applied on the management of the WEs by local leaders for the recruitment and even for the salaries; by imposing the rules defined by the Public Service Council, the management is protected from such pressure. But on the other hand, it becomes very hard to recruit as the process is a long process.

One important issue that has been noted is related to the existing organization chart. As discussed earlier, the organization chart for each WE was defined by decree, stating the positions and the number of people. It is known worldwide that an organization chart is a "living organization", positions are moving according to the new development of technologies, as well as the number of people per position is defined by the degree of investment in new technologies. To clarify the concept, by using specific software, the number of employees in some activities can be reduced, but this necessitates to have an IT activity to handle the hardware and the software. Surprisingly the existing organization chart prepared in 2005 did not forecast for any IT position.

On top of the previous comment, the existing organization chart has not referred to any position for the following: wastewater and irrigation as recommended by the law 221-2000, but also the customer service and the communication activities were ignored.

It is now urgent to revise the existing organization chart to have all the required activities included as it is now mandatory for any modern water organization.

The number of employees by position should be presented as indicative because the situation for each WE is moving from year to year and it is not very efficient to define a hard frame for the number of employees that may vary according to the specific needs and the use of new technologies. The same thinking should be applied to the salaries. For instance, and as we know, some positions are facing high demand on the market, it is the case for the IT expert, if the salaries proposed by the WE are not competitive with the industrial private sector, it will be almost impossible to recruit such a profile by the WEs. The board of each WE should be able to decide the most adequate salary scale to be used for each position. Such a flexibility must be compensated by the responsibility of the board and mainly the chairman, who must be sure that the WE has the capacity to pay the agreed salaries in the long term and that these salaries are fair and consistent with market conditions.

It has been noted that the WEs did not develop an annual training plan for the personnel, to be initiated to new technologies, new management style etc.

Due to the recruitment freeze and the increase in workload, particularly on wastewater, the hiring of private operators to carry out O&M tasks appears to be a relevant approach, as soon as the utility undertakes an appropriate reorganization and acquires the financial capacities to pay the service providers:

- Increasing the size of the Procurement Unit, which has only two category 4 staff members to enable NLWE to develop and monitor contracts with the private sector

- Developing performance-based contracts and providing specific training and support to the legal and procurement teams and to the technical staff in charge of overseeing and monitoring these contracts
- Progressively reorganizing the Technical and Distribution Departments by creating a unit in charge of supervising the private operators and, if necessary, reassigning O&M activities currently undertaken by WE staff to newly contracted private operators.

6 ANNEXES

6.1 METHODOLOGY APPLIED

The methodology developed for this phase of the project can be summarized as follow:

Based on the large volume of reliable data collected by the LTTA, the Consultant has updated the HR information during the sites visits, mainly focusing on:

- Number of employees
- Number of “on demand”
- Monthly wages and increase strategies
- Types and Profiles of the personnel (categories, status etc.)
  - Managers
  - Supervisors
  - Workers
- Age repartition
- Mobility
- RH department organization and IT tools
- Working hours and management of overtime
- Trade-Union
- Annual training plans
- Incentives and benefits strategy
- Availability of job description
- Annual performance assessment
- Promotion strategy
- Health and safety rules
- Internal rules
- Sanctions strategy
- Gender strategy

As well, the Consultant has gathered some complementary data such as:

- Labor law (French version updated 1996)
- HR management rules for the public employees
- Most recent decrees regarding salaries and benefits in the public sector
- Internal rules of each WE when available.

The Consultant has identified the gaps between the objectives defined by the law for each WE and the existing situation as described by the managers who have been interviewed:

- institutional
  - Internal: the laws and national rules exist but are not under application in the WE
  - External: the laws and national rules are not available or are available but require some modifications to be adapted to the actual and future needs
  - Improvements required in the procedures of the WEs
- Operational
  - Review the needs for each of the main activities of the WEs (in terms of number of employees, skills, procedures, etc.) to be compared to the existing figures:
    - Water resources management
    - Water production
    - Water distribution
    - Wastewater collection
    - Wastewater treatment
    - Environment management at discharge points
    - Customer service
    - NRW
    - IT
    - Design and investment
    - Administrative
    - Finance and Accounting
    - Communication
    - Procurement
    - Quality control
    - Health and Safety
    - HR management
    - Internal audit and control

6.2 COLLECTED DATA RELATED TO RH ISSUES

Table 24
Questionnaire submitted to NLWE on November 10th and rediscussed on November 30th

Name of the organization		North Lebanon Water Establishment
date of visits		10/11 and 30/11
Names of hosts		Khaled Obeid, Aziz Bassil, Maher Tahsildar, Gaby Nasr, Sahar Dabliz
Institutional situation	Boards members	5 active including the government representative
	Organizational chart	As in LTTA Data collection and diagnosis report NLWE revised, (July 2022)
Indicators	Annual volume production	94 Mm^3/y
	Water distribution network length	6 000 km
	N° of breaks/year	NA
	Sewage collection network length	NA
	N° of breaks/year	NA
Reporting		Annual from NLWE to MoEW
Customer service	Number of customers	130 668
	type of customers	On going
	Accounts metered	66 000
	with gauges	63 600
	CIS	ERP- operational
Annual invoicing	N° bills	130 688 (2022)
	Total amount of bills	109 747 019 471 LBP
Tariffs		New proposals for 2023
Collection	Annual coverage rate	44,38%
	Pending amounts	162 004 339 250
	Nº of collectors	60
Call center	Number of calls received in November 2022	14
HR	Total staff	582
	total employees	229
	total « on demand »	353
	monthly wages	5 000 MLBP/m
	Future retirees	50 employees in the coming 5 years
	RH department	Split between admin and finance
	HR Information System	ERP in use
	Working hours	8:00am to 2:00pm 4 d/w

	Overtime	2,425 hours for the month
	Existence of union	yes
	Annual training plans	no
	Incentives	no
	Benefits	Social security, bonus (birth, marriage, school etc)
	available job descriptions	Limited to the previous Ondeo Liban job description
	Annual performance assessment	In use until 2020
	Health and safety rules	Limited to chemicals
	Sanctions and penalties	As per official rules
	Internal rules	As per decree
	Gender policy	No
	Recruitment processes	Following the rules of Public Service Council
Financial 2021	Annual income	16 250 MLBP
	Annual expenses	28 860 MLBP
	Debt	92 924 MLBP
	Management information system	ERP in use
Information available	Archives	
	Storage	In the main office
	Technical documentation	Available on some production sites
	Master plan/strategy	5 years strategy
	Crisis management manual	NA
	Health and safety manual	NA
	Quality insurance manual	NA
	Annual preventive maintenance plan	NA
	KPIs	NA
IT issues	number of computers	220
	number of servers	11
	CMMS	no
	SCADA	no
	Communication telephone	250
	security	No
Power generation	On-going projects	Solar under study for the production
	number of generators	Pending information
	fuel	
	gas	
	solar	
	total capacity	

6.3 QUESTIONNAIRE AS RECEIVED FROM THE NLWE

Data collection form

Human Resources Assessment

1- Name of the organization: North Lebanon Water Establishment

2- Date of the visit : 10/11/2022

3- Names and functions of the hosts: Khaled Obeid CEO

4- Institutional situation of the organization details:
   a. Board members:
   b. CEO: Khaled Obeid
   c. CFO:
   d. COO:

5- Organization chart: attachment: ref Data collection and diagnosis report BWE revised, July 2022, by Hydroconseil, BTD, Hydrophil, VA

6- Administrative organization:
   a. Local branches:
      i. Number:
      ii. Names:
      iii. Activities: Production, distribution, wastewater collection, wastewater treatment, irrigation, customer service

   b. Inter branches coordination:
      i. regular meetings ,
      ii. field coordination etc

   c. Common services:
      i. lab,
      ii. procurement,
      iii. HR
      iv. Communication
      v. Central store
      vi. legal

7- Geographical description:

   a. Area covered: 1 950 km²

   b. Number of communities (municipalities): 457

   c. Population: 1 279 800
      i. Residents
      ii. Refugees

   d. Number of resources and capacities:
      i. Dams: 0

ii. Springs: 153
iii. Wells: 69
iv. Surface water :

e. Number of water plants and capacities:
   i. Number: 3
   ii. Capacities m3/day

f. Number of reservoirs and capacities
   i. Number:
   ii. Volumes m3
   iii. Type: elevated or ground

g. Number of pumping stations and capacities
   i. Number: 79
   ii. Capacities m3/hour
   iii. Power self sufficient: generators
   iv. Number of pumps (total)

h. Total volume of water (Production)/year: 94 Mm3/year

i. Number of wastewater plants and capacities
   i. Number 9
   ii. Capacities m3/day
   iii. Percentage of nominal capacities %

j. Length of distribution network
   i. Length: 6 000 km
   ii. Type of material: ductile iron, galvanized steel, HDPE
   iii. Range of diameters: from mm to mm
   iv. Number of breakdowns / year:

k. Length of collection network
   i. Length: unknown
   ii. Type of material: unknown
   iii. Range of diameters: unknown
   iv. Number of breakdowns / year: not available

8- Operation
   a. Organization of the O&M
      i. Number of operators
      ii. Profiles of personnel

   b. Reporting
      i. Who reports
      ii. To whom

   c. Equipment available
      i. Workshops: electrical; mechanical
      ii. Vehicles
      iii. Stores

9- Customer service

a. Number of customers: 128 783
b. Type of customers
    i. Domestic
    ii. Commercial
    iii. Industrial
    iv. Institutional
    v. Metered 58 000
    vi. Gauge 329 163

c. Yearly invoicing
    i. Number of bills
    ii. Amounts LBP
    iii. Volumes m3

d. Yearly recovering
    i. Number of bills
    ii. Amounts LBP
    iii. Volumes m3

e. Tariffs
    i. Water LBP/year/m3
    ii. Waste water LBP/year

f. CIS (Customer Information System)
    i. Available
    ii. Operational

g. Pending amounts (unrecovered bills) LBP
h. Number of collectors
i. Call center : yes or no
j. Number of calls received/year :

10- HR

a. Total Number of employees: 604
b. Number of civil servants 241
c. Number of "on demand" 363
d. Monthly wages LBP
e. Salaries increase strategy please detail
f. Profiles of the personnel
    i. Managers categories
    ii. Supervisors categories
    iii. Workers category 4 category 5
g. Age repartition (please attach a graph if available)
h. Mobility if any
i. R H department
    i. Yes or no
    ii. activity
j. HRIS (Human Resources Information System)
    i. Available
    ii. operational
k. Working hours:
l. Overtime

i. Number/year

m. Union: yes or no
n. Annual training plans
    i. Number of sessions
    ii. Number of hours / employee/year
    iii. Budget LBP/year
o. Incentives and benefits strategy
    i. Incentives
    ii. Benefits: retirement, health insurance
p. Availability of job description: yes or no
q. Annual performance assessment: yes or no
r. Promotion strategy: please detail
s. Health and safety rules: yes or no
t. Penalties procedures: please detail
u. Promotion strategy: please detail
v. Internal rules: please supply a copy of the rules
w. Gender policy: any specific document or instruction ?
x. Recruitment process
    i. Civil servants: Council of the Civil Service process
    ii. Contractuals: please detail
    iii. On demand: please detail

11- Financial (last year data)
a. Annual income: 16,25 MLBP
b. Annual expenses: 28,86 MLBP
c. Debt: MLBP
d. Investment MLBP
e. Subsidies (estimate) MLBP
f. MIS (Management Information System)
    i. Available
    ii. operational

12- Future projects
a. Water:
    i. Production
    ii. distribution
b. Wase water
    i. Collection
    ii. treatment
c. Customer service
d. IT
e. Power generation

13- Information available:
a. Archives
    i. Storage facility
    ii. Electronic storage
    iii. Technical documentation:
b. Master plan:
c. Crisis management manual: yes or no
d. Health and Safety manual: yes or no
e. Quality insurance manual: yes or no

f. Annual preventive maintenance plan: yes or no
g. KPI: please supply a copy of existing KPIs
h. Reporting
    i. Weekly: from to
    ii. Monthly: from to
    iii. Yearly: from to

14- IT
a. Computers available and operational: number
b. Servers: number
c. Softwares: list
d. CMMS: no
e. SCADA: No
f. Communication:
    i. radio
    ii. telephone
g. Security:
    i. private security company,
    ii. inhouse security,
    iii. number of guards:

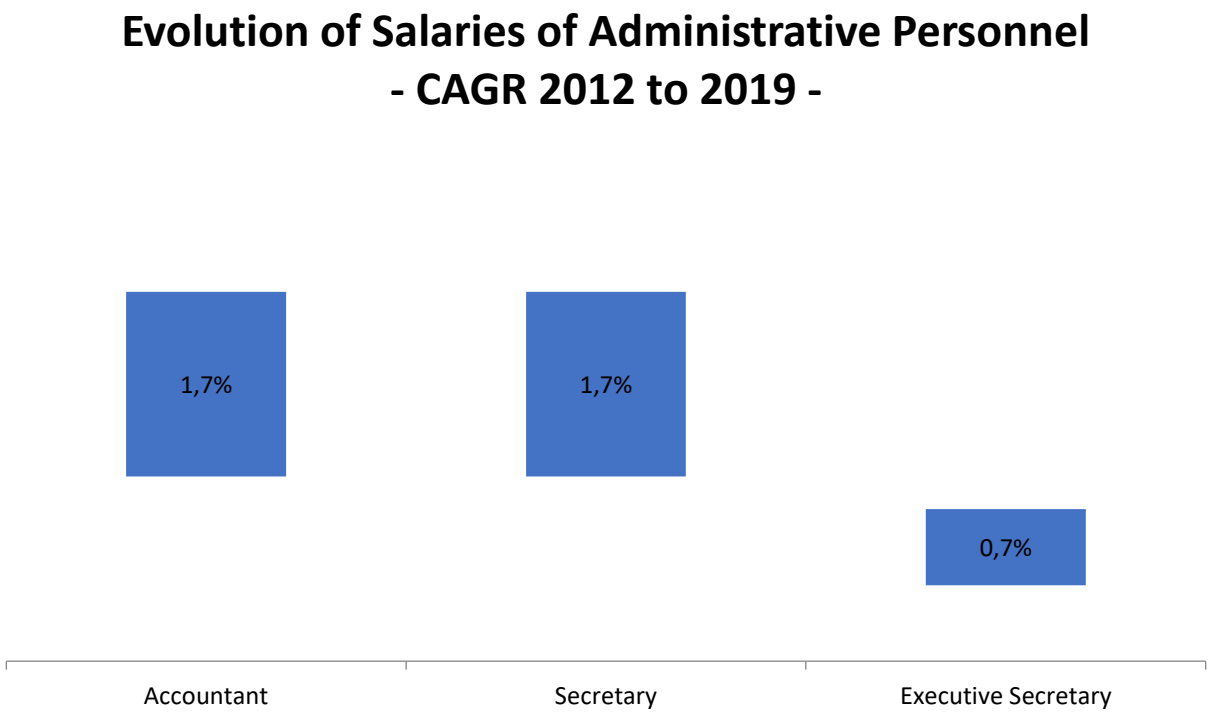
15- Power generation
a. Number of generators
b. Type: fuel, gasoil, solar
c. Total capacity

16- Irrigation
a. Surface areas covered
b. Network length
c. Number of customers
d. Tariff
e. Global income /year
f. Organization

6.4 LEADERS CLUB : SALARY TRENDS & SALARY BRACKETS

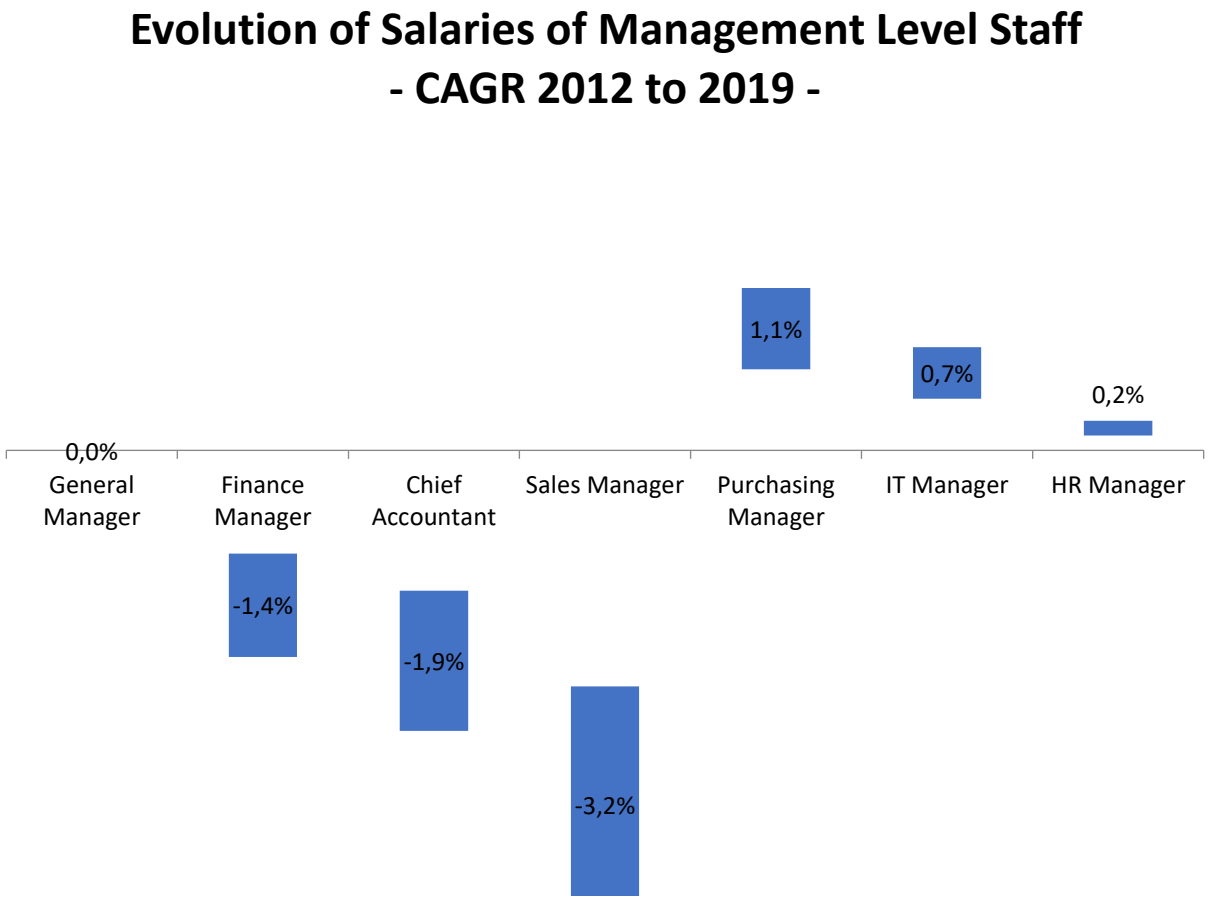
6.4.1 Salaries General position

General positions which are common among all business sectors have witnessed different growth trends in salaries between 2012 and 2019. For instance, junior positions such as accountants and secretaries have seen an increase in salaries with a Compounded Annual Growth Rate (CAGR) of 1.7 percent between 2012 and 2019 which implies a yearly increase of 1.7 percent. However, for the last two years, the salaries of both positions have remained stable. While the salaries of executive secretaries did not experience any significant growth during the period between 2012 and 2019.



On the contrary, management level positions were split with some experiencing a decrease in salaries, others remaining stable, and others experiencing an increase in salaries between 2012 and 2019. Of those who witnessed a decrease in salaries, sales managers have seen the highest decrease reaching a CAGR of -3.2 percent during the period between 2012 and 2019. Similarly, chief accountants and finance managers experienced a decline in their salaries during the same period with a CAGR of -1.9 percent and -1.4 percent respectively. For chief accountants, salaries have remained fairly stable during the last two years. However, finance managers have had some fluctuations in their salaries starting with a decline during the period of 2012 and 2016 followed by an increase during the last two years. Among the managerial positions, purchasing managers were the only ones to witness an increase in their salaries with a CAGR of 1.1 percent between 2012 and 2019. Specifically, during the last two years, there has been a change in trend with salaries increasing to a CAGR of 1.8 percent for purchasing managers.

Salaries of general managers, HR managers and IT managers remained fairly stable during the period of 2012 and 2019 with a CAGR of not more than 0.7 percent. However, for the last two years, the salaries of IT managers and HR managers have witnessed a moderate increase with a CAGR ranging between 1.1 percent and 2.9 percent.



Both marketing managers and senior accountants were only covered in the salary scale surveys of 2016 and 2019. Salaries of marketing managers showed a small decrease between the two periods with a CAGR of -1.6 percent. On the other hand, senior accountants witnessed a moderate increase in their salaries with a CAGR of 2.5 percent between 2016 and 2019.

6.5 SALARY BRACKETS

	Salaries vs. Years of Experience								
	Fresh Graduate	**1year**	**2 years**	**3 years**	**5 years**	**7 years**	**10 years**	**15 years**	**20 years**
General Manager	Prior Managerial Experience Required						$6,700-$7,700	$7,700-$8,300	$8,300-$10,000
Finance Manager	Prior Financial Experience Required					$2,500-$3,500	$3,500-$5,200	$5,200-$6,000	$6,000-$7,800
IT Manager	Prior IT Experience Required				$2,200-$2,500	$2,500-$2,800	$2,800-$3,300	$3,300-$3,800	$3,800-$5,000
HR Manager	Prior HR Experience Required				$2,000-$2,500	$2,500-$3,000	$3,000-$3,500	$3,500-$4,200	$4,200-$5,000
Chief Accountant	Prior Accounting Experience Required					$2,000-$2,300	$2,300-$2,800	$2,800-$3,500	$3,500-$4,500
Sales Manager	Prior Sales Experience Required				$2,000-$2,300	$2,300-$2,500	$2,500-$2,800	$2,800-$3,300	$3,300-$4,200

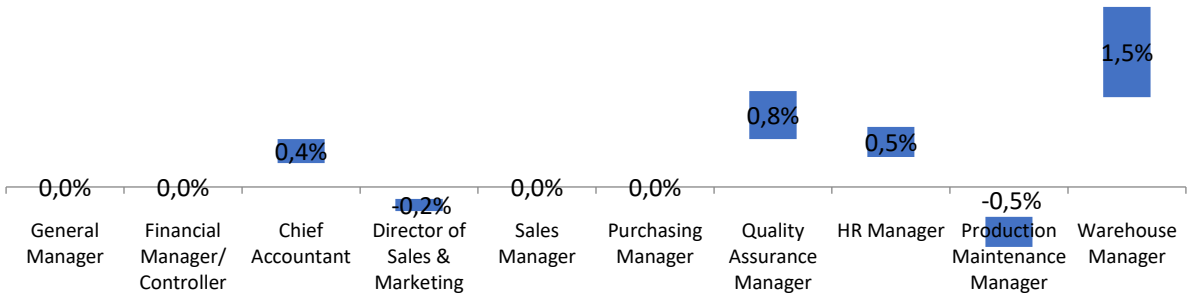
	Salaries vs. Years of Experience								
	Fresh Graduate	**1year**	**2 years**	**3 years**	**5 years**	**7 years**	**10 years**	**15 years**	**20 years**
Marketing Manager	Prior Marketing Experience Required				$1,700-$1,900	$1,900-$2,100	$2,100-$2,400	$2,400-$2,900	$2,900-$4,000

Purchasing Manager	Prior Experience Required				$1,200-$1,500	$1,500-$2,000	$2,000-$2,300	$2,300-$3,000	$3,000-$3,700
Senior Accountant	Prior Accounting Experience Required				$1,500-$1,700	$1,700-$1,900	$1,900-$2,200	$2,200-$2,500	$2,500-$3,000
Executive Secretary	Prior Secretarial Experience Required				$1,200-$1,300	$1,300-$1,500	$1,500-$1,800	$1,800-$2,100	$2,100-$2,600
Accountant	$700-$800	$800-$900	$900-$1,000	$1,000-$1,200	$1,200-$1,500	Promoted to Senior Accountant			
Secretary	$650-$750	$750-$800	$800-$900	$900-$1,000	$1,000-$1,200	Promoted to Executive Secretary			

6.5.1 Salaries Manufacturing

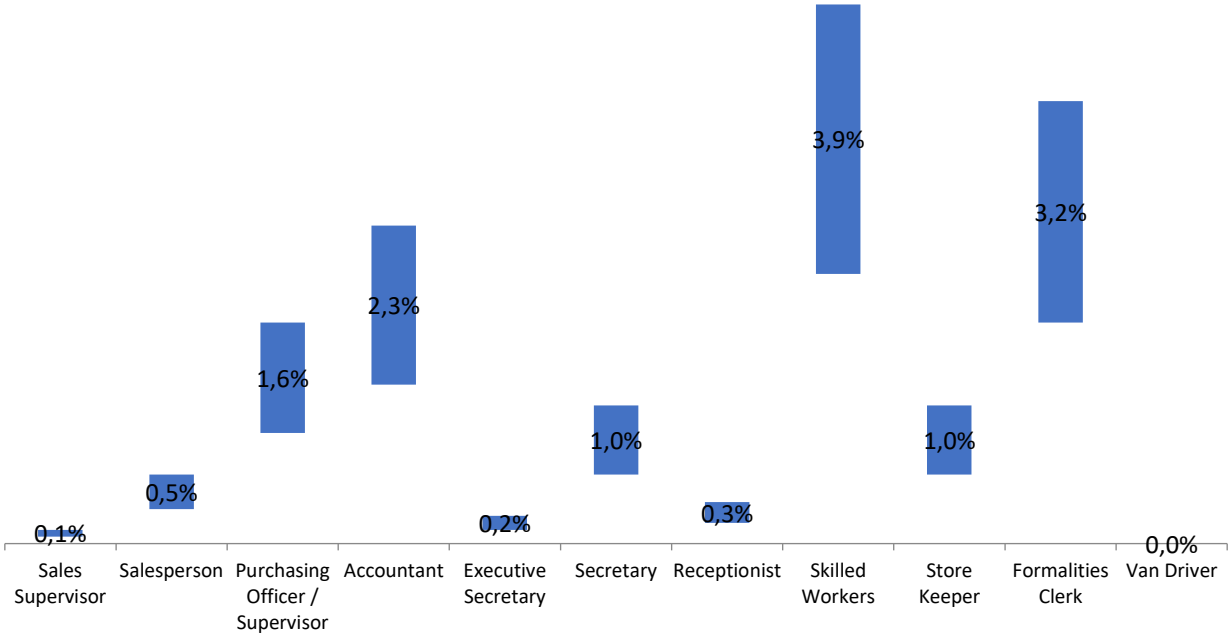
The manufacturing sector has remained fairly stable in its salaries between 2012 and 2019. Starting with managerial positions, warehouse managers were the only ones to witness a slight growth in their salaries with a Compounded Annual Growth Rate (CAGR) of 1.5 percent between 2012 and 2019 which implies a yearly increase of 1.5 percent. Specifically, during the last two years, there has been a change in trend with salaries increasing to a CAGR of 4.6 percent for warehouse managers. In contrast, the salaries of general managers, financial managers/controllers, sales managers and purchasing managers remained the same between 2012 and 2019. Similarly, the salaries of production maintenance managers, HR managers, quality assurance managers, chief accountants and directors of sales & marketing have not experienced any significant change during the same period. Assistant purchasing managers, whose salaries were only covered in the salary scale surveys of 2016 and 2019, also followed the same trend with no growth in salaries recorded between the two years.

Evolution of Salaries of Management Level Staff
- CAGR 2012 to 2019 -



A similar trend in salaries has been seen with several administrative and junior positions in the manufacturing sector. For instance, the salaries of sales supervisors and executive secretaries have remained fairly stable during the period between 2012 and 2019. Similarly, salespeople, receptionists, and van drivers did not experience any significant change in their salaries during the same period. However, a moderate increase in salaries has been seen between 2012 and 2019 with other administrative and junior positions in this sector. Skilled workers have seen the most increase in their salaries with a CAGR of 3.9 percent between 2012 and 2019. Similarly, formalities clerks and accountants have seen a moderate increase in their salaries during the same period with a CAGR of 3.2 percent and 2.3 percent respectively. Secretaries, whose salaries have remained stable for the last two years, have also experienced a slight growth in their salaries between 2012 and 2019 with a CAGR of 1.0 percent. Other positions in the manufacturing sector that have followed a similar salary trend are purchasing officers/supervisors and store keepers.

Evolution of Salaries of Other Personnel
- CAGR 2012 to 2019 -



	Salaries vs. Years of Experience								
	Fresh Graduate	**1year**	**2 years**	**3 years**	**5 years**	**7 years**	**10 years**	**15 years**	**20 years**
General Manager	Prior Managerial Experience Required						$7,000-$7,500	$7,500-$9,000	$9,000-$10,500
Financial Manager / Controller	Prior Experience as Chief Accountant Required					$2,500-$3,500	$3,500-$5,500	Promoted to Chief Financial Officer (if position available)	
Chief Accountant	Prior Experience in Accounting Required				$1,650-$1,850	$1,850-$2,100	$2,100-$2,300	$2,300-$3,000	Promoted to Financial Manager or reaches a maximum of $3,500
Accountant	$700-$800	$800-$900	$900-$950	$950-$1,000	$1,000-$1,300	Promoted to Senior Accountant/ Chief Accountant			
Director of Sales & Marketing	Prior Experience as Commercial Sales Director Required						$4,200-$5,500	$5,500-$6,500	$6,500-$7,500
Sales Manager	Prior Sales Experience Required				$2,000-$2,300	$2,300-$2,800	$2,800-$2,900	Promoted to Director of Sales & Marketing	

	Salaries vs. Years of Experience								
	Fresh Graduate	**1year**	**2 years**	**3 years**	**5 years**	**7 years**	**10 years**	**15 years**	**20 years**
Sales Supervisor	Prior Sales Related Experience Required				$850-$1,300	$1,300-$1,600	$1,600-$1,700	Can Be Promoted to Sales Manager	
Salesperson	$700-$800	$800-$900	$900-$1,000	$1,000-$1,100	$1,100-$1,200	$1,200-$1,300		$1,300-$1,500	
Purchasing Manager	Prior Experience as Assistant Purchasing Manager/Purchasing Officer Required					$4,000-$4,500	$4,500-$5,000	$5,000-$6,000	$6,000-$7,000

Assistant Purchasing Manager	Prior Experience as Purchasing Officer Required				$1,700-$2,000	$2,000-$2,500	$2,500-$3,000	Promoted to Purchasing Manager (if position is available) or reaches a maximum of $3,500
Purchasing Officer / Supervisor	Prior Purchasing Experience Required	$800-$850	$850-$1,050	$1,050-$1,300	$1,300-$1,450	$1,450-$1,800	Promoted to Assistant Purchasing Manager	
Quality Assurance Manager	Prior Experience in Quality Control Required			$1,500-$1,600	$1,600-$1,800	$1,800-$2,100	$2,100-$2,600	$2,600-$3,500
Executive Secretary	Prior Secretarial Experience Required			$1,150-$1,250	$1,250-$1,400	$1,400-$1,600	$1,600-$1,800	$1,800-$2,500
	Salaries vs. Years of Experience							
	Fresh Graduate	**1year**	**2 years**	**3 years**	**5 years**	**7 years**	**10 years**	**15 years**	**20 years**
Secretary	Prior Experience as Receptionist Required		$700-$800	$800-$1,000	Promoted to Executive Secretary				
Receptionist	$550-$600	$600-$700	$700-$800	Promoted to Secretary or reaches a maximum of $900				
Skilled Workers	$450-$500	$500-$550	$550-$600	$600-$650	$650-$750	$750-$850	$850-$1,000	$1,000-$1,200	
Human Resources Manager	Prior Experience as Assistant HR Manager Required				$2,200-$2,500	$2,500-$3,100	$3,100-$3,600	$3,600-$4,200
Production Maintenance Manager	Prior Experience in Mechanical and Electrical Engineering Required			$3,000-$3,400	$3,400-$3,750	$3,750-$4,200	$4,200-$5,000	$5,000-$6,000
Warehouse Manager	Prior Experience Required			$1,200-$1,400	$1,400-$1,600	$1,600-$2,100	$2,100-$2,500	$2,500-$3,200

	Salaries vs. Years of Experience								
	Fresh Graduate	**1year**	**2 years**	**3 years**	**5 years**	**7 years**	**10 years**	**15 years**	**20 years**
Formalities Clerk	$550-$600	$600-$700	$700-$750	$700-$750	$750-$800	$800-$900	$900-$950	$950-$1,000	$950-$1,000
Van Driver	$550-$600		$600-$750		$750-$850	$850-$900	$900-$950	$950-$1,100	
Store Keeper	$550-$650	$650-$700	$700-$750	$750-$800	$800-$900	$900-$950	$950-$1,100	Promoted to Warehouse Manager or reaches a maximum of $1,300	

6.6 NLWE SALARIES SCALE

مؤسسة مياه لبنان الشمالي

رقم

تاريخ

مديرية عامة	استثمار	
ش ادارية	رقابة	
ش مالية	امانة سر	
فنية		

مرسوم رقم ٣٣٧١

رفع الحد الادنى للرواتب والاجور

وتحويل سلاسل رواتب المستخدمين في مؤسسة مياه لبنان الشمالي

إن رئيس الجمهورية

بناء على الدستور

بناءً على القانون رقم ٢٢١ تاريخ ٢٠٠٠/٥/٢٩ وتعديلاته (تنظيم قطاع المياه)،

بناءً على المرسوم رقم ١٤٩١٣ تاريخ ٢٠٠٥/٧/٥ وتعديلاته (تنظيم مؤسسة مياه لبنان الشمالي وتحديد ملاكها وسلسلة الرتب والرواتب وشروط الاستخدام فيها)،

بناءً على المرسوم رقم ١٤٨٧٤ تاريخ ٢٠٠٥/٧/١ (نظام المستخدمين في مؤسسة مياه لبنان الشمالي)،

بناءً على القانون رقم ٤٦ تاريخ ٢٠١٧/٨/٢١ (رفع الحد الادنى للرواتب والاجور... وتحويل رواتب الملاك الإداري العام...)، لاسيما المادة ١٧ منه،

بناءً على قرار مجلس ادارة مؤسسة مياه لبنان الشمالي رقم ٣٥/١ تاريخ ٢٠١٧/٩/٢٠،

بناءً على اقتراح رئيس مجلس الوزراء ووزيري الطاقة والمياه والمالية،

بناءً على رأي مجلس شورى الدولة : رقم ٧٤٦ تاريخ ٢٠١٨/٤/٣٠،

وبعد موافقة مجلس الوزراء في جلسته المنعقدة بتاريخ ٢٠١٨/٥/١٦

يرسم ما يأتي :

المادة الأولى :

يُرفع الحد الأدنى للرواتب والأجور في مؤسسة مياه لبنان الشمالي الى /٦٧٥,٠٠٠/ ل.ل.(ستماية وخمسة وسبعون ألف ليرة لبنانية).

المادة الثانية :

يُعطى المستخدمون في مؤسسة مياه لبنان الشمالي زيادة غلاء معيشة تضاف إلى أساس الراتب الشهري الذي يتقاضاه كل منهم وتحتسب وفق الآلية الآتية :

١ – تنزل من الراتب الشهري قيمة الزيادة التي اضيفت سنداً لأحكام القانون رقم ٦٣ تاريخ ٢٠٠٨/١٢/٣١.

٢ – تضاف إلى الرصيد زيادة غلاء معيشة بنسبة :

- ١٠٠% على الشطر الأول منه حتى ٤٠٠ ألف ليرة لبنانية، على ألا تقل الزيادة عن ٣٧٥ الف ليرة لبنانية.

17/1

- 9% على الشطر الثاني منه الذي يزيد عن 400 ألف ليرة لبنانية ولا يتجاوز المليون وخمسمائة ألف ليرة لبنانية.
- لا شيء على الشطر الذي يتجاوز المليون وخمسمائة ألف ليرة لبنانية.

3 – يحتسب الفرق بين المبلغ الإجمالي الناتج عن الفقرة السابقة وأساس الراتب الشهري الذي كان يتقاضاه المستفيد بتاريخ 2012/1/31 ويكون هذا الفرق هو الزيادة التي تضاف إلى أساس الراتب الشهري الذي كان يتقاضاه بتاريخ 2012./1/31

4 –لا يجوز أن يتدنى أساس الراتب الشهري للمستخدمين والتعويض الشهري للمتعاقدين، بنتيجة زيادته على النحو المبين أعلاه، عن راتب الدرجة الموازية أو الأقرب في سلسلة رواتب الوظيفة المماثلة أو المشابهة لمهامهم في الملاك الإداري العام بعد تحويلها وفقا للجداول الملحقة بهذا المرسوم ، ووفقا لما يلي:

تحوّل سلاسل رواتب مستخدمي مؤسسة مياه لبنان الشمالي من راتب كل مستخدم الى الراتب الاقرب في الخانة المدرجة تحت عنوان «اساس الراتب النافذ بتاريخ 2008/5/1» في الجدول العائد لوظيفته والملحق بهذا المرسوم، على ان يؤخر او يقدم تدرجه بنسبة ما لحق راتبه من زيادة او نقصان، وفقاً لمـــا هـــو مبين في الجداول رقـــم 1 و2 و3 و4 و5 و6 و7 و8 و9 و10 و11 و12 و13 الملحقة بهذا المرسوم، ويخصص لكل من المستخدمين المعنيين الراتب الجديد المقابل لراتبه القديم، والدرجة الجديدة المقابلة لدرجته القديمة مع إحتفاظه بحقه في القدم المؤهل للتدرج.

تُفتح القمة في جميع الجداول، ويستمر المستخدم الذي بلغ الدرجة الأعلى في الجدول العائد لسلسلة رواتب وظيفته في الإستفادة كل سنتين من درجة تدرج تعادل قيمتها قيمة هذه الدرجة الأعلى.

تعتبر الجداول المنوه عنها اعلاه جزءاً لا يتجزأ من هذا المرسوم.

المادة الثالثة :

اعتباراً من تاريخ نفاذ القانون رقم 46 تاريخ 2017/8/21 يوقف صرف غلاء المعيشة وتعتبر المبالغ المقبوضة كسلفة عن بدل غلاء معيشة للمستفيدين من هذه السلسلة من تاريخ 2012/2/1 ولغاية نفاذ هذا القانون غير خاضعة لموجب الاسترداد.

كما لا يستحق بأي حال من الأحوال أي فروقات على تعويضات أو أجور مهما كان نوعها على مبالغ السلفة المقبوضة اعتباراً من 2012/2/1 ولغاية تاريخ نفاذ هذا المرسوم.

المادة الرابعة:

أ- يُعطى المتعاقدون (الذين يتقاضون تعويضات شهرية تعتبر بمثابة راتب او اجر) زيادة غلاء معيشة تحتسب وفق الآلية الآتية :

1 – تنزل من الراتب الشهري قيمة الزيادة التي أضيفت سنداً لأحكام القانون رقم 63 تاريخ 2008/12/31.

2 – تضاف إلى الرصيد زيادة غلاء معيشة بنسبة :

- 100% على الشطر الأول منه حتى 400 ألف ليرة لبنانية، على ألا تقل الزيادة عن 375 ألف ليرة لبنانية.
- 9% على الشطر الثاني منه الذي يزيد عن 400 ألف ليرة لبنانية ولا يتجاوز المليون وخمسمائة ألف ليرة لبنانية.
- لا شيء على الشطر الذي يتجاوز المليون وخمسمائة ألف ليرة لبنانية.

3 – يحتسب الفرق بين المبلغ الإجمالي الناتج عن الفقرة السابقة وأساس الراتب الشهري الذي كان يتقاضاه المستفيد بتاريخ 2012/1/31 ويكون هذا الفرق هو الزيادة التي تضاف إلى أساس الراتب الشهري الذي كان يتقاضاه بتاريخ 2012/1/31.

4 – لا يجوز أن تتدنى تعويضات المتعاقدين الشهرية بنتيجة زيادتها على النحو المبين أعلاه عن راتب الدرجة الموازية أو الأقرب في سلسلة رواتب الوظيفة المماثلة أو المشابهة لمهامهم بعد تحويلها وفقاً للجداول الملحقة بهذا المرسوم اعتباراً من تاريخ نفاذه.

ب ـ تطبق على الأجراء الخاضعين لنظام الأجراء الاحكام المنصوص عنها في المادتين الحادية عشر والسادسة عشر من القانون رقم 46 تاريخ 2017/8/21.

المادة الخامسة : تحديد دوام العمل :

يُعدّل دوام العمل الرسمي في مؤسسة مياه لبنان الشمالي ليصبح 35 ساعة اسبوعياً.

المادة السادسة : الدوام النصفي للمستخدمة المتزوجة

يمكن للمستخدمة المتزوجة الإستفادة من دوام نصفي وذلك لدواع خاصة لمدة أقصاها ثلاث سنوات خلال فترة خدمتها، ويقصد بالدوام النصفي أن تعمل المستفيدة من هذا الدوام نصف عدد الساعات المحددة قانوناً، على أن يكون تدوير الساعة لصالح الإدارة .

- يعطى الدوام النصفي بقرار من الرئيس/المدير العام بعد موافقة مجلس الإدارة ، وذلك بناءً على طلب معلل من صاحبة العلاقة .
- تحدد مدة الدوام النصفي بإثني عشر شهراً متتالية يمكن تجديدها للمدة ذاتها، ولا يجوز تكليف المستخدمة بالعمل الإضافي طيلة مدة إفادتها من الدوام النصفي .
- يقدم طلب الإستفادة من الدوام النصفي خطياً قبل شهر من تاريخ بدء الإفادة منه ويقدم طلب تجديده خطياً عند الإقتضاء قبل شهر من تاريخ إنتهائه.
- يستحق للمستفيدة من الدوام النصفي نصف راتب ونصف تعويض طبيعة العمل الميداني في حال كانت من المستفيدين من هذا التعويض، أما التعويضات العائلية وغيرها من التعويضات والتقديمات المالية فتثابر على الإفادة منها كاملة، على أن تقتطع من أنصاف الرواتب المصروفة لها كامل المساهمة الشهرية الإلزامية المترتبة قانونا لصالح صندوق الوطني للضمان الاجتماعي ولصالح صندوق المصلحة.
- يحظر على المستفيدة من هذا الدوام أن تتعاطى أي عمل مأجور أو اية مهنة من أي نوع كانت ، وذلك تحت طائلة العودة عن هذا التدبير في أي وقت تثبت فيه مخالفتها هذا الحظر ، فضلاً عن ترتب المسؤولية المسلكية وفقاً للأنظمة النافذة.
- خلافاً لأي نص آخر، تحتسب سنة الدوام النصفي نصف سنة خدمة فعلية بالنسبة الى التدرج وتعويض الصرف او محسومات الصرف من الخدمة.

المادة السابعة : العمل الإضافي

- يعين الحد الأقصى لعدد ساعات التكليف بالعمل الإضافي بخمس وثلاثين ساعة شهرياً كحد أقصى .
- يتحمل الرؤساء المباشرون والتسلسليون والتفتيش المركزي مسؤولية مراقبة الأعمال الإضافية والتحقق من أدائها وفقاً للأصول ، ويتوجب على كافة الدوائر المعنية والعاملين فيها تسهيل عمل المفتشين وتمكينهم من القيام بمهامهم.

المادة الثامنة :

تصحح عند الإقتضاء، بقرار صادر عن مجلس الإدارة الأخطاء المادية الواردة في الجداول الملحقة بهذا المرسوم، على أن يصدق القرار وفقا للأصول .

المادة التاسعة :

تلغى جميع النصوص المخالفة لأحكام هذا المرسوم او غير المتفقة مع مضمونه.

المادة العاشرة:

ينشر هذا المرسوم ويعمل به اعتباراً من ٢٠١٧/٨/٢١.

بعبدا في ٢٠ تموز ٢٠١٨
الامضاء : ميشال عون

صدر عن رئيس الجمهورية
رئيس مجلس الوزراء
الامضاء : سعد الدين الحريري

وزير المالية
الامضاء : علي حسن خليل

وزير الطاقة والمياه
الامضاء : سيزار أبي خليل

رئيس مجلس الوزراء
الامضاء : سعد الدين الحريري

وزارة الطاقة والمياه
المديرية العامة للاستثمار
الديوان
الرقم : ١٧٣٥
التاريخ : ٢٠١٨/٧/٢٤
يحال إلى : مصلحة الديوان

صورة طبق الأصل
رئيس مصلحة الديوان بالحلول
محمد أمين

- مديرية الشؤون المالية } لاجراء المقتضى
- مديرية الشؤون الادارية } بالتنسيق المتبادل
- المحفوظات

٢٠١٨/٧/٢٤

جدول رقم – ١ –
الفئة الأولى
تحويل سلسلة رواتب مستخدمي مؤسسة مياه لبنان الشمالي

رئيس مجلس إدارة متفرغ / مدير عام

الدرجة	اساس الراتب النافذ بتاريخ 2008/S/1 ل.ل.	غلاء معيشة 2012/2/1 ل.ل	قيمة الدرجة القديمة ل.ل.	الراتب الجديد ل.ل.	قيمةالدرجة الجديدة ل.ل.
1	2,700,000	300,000	105,000	4,500,000	180,000
2	2,805,000	300,000	105,000	4,680,000	180,000
3	2,910,000	300,000	105,000	4,860,000	180,000
4	3,015,000	300,000	105,000	5,040,000	180,000
5	3,120,000	300,000	105,000	5,220,000	180,000
6	3,225,000	300,000	105,000	5,400,000	200,000
7	3,330,000	300,000	105,000	5,600,000	200,000
8	3,435,000	300,000	105,000	5,800,000	200,000
9	3,540,000	300,000	105,000	6,000,000	200,000
10	3,645,000	300,000	105,000	6,200,000	200,000
11	3,750,000	300,000	105,000	6,400,000	225,000
12	3,855,000	300,000	105,000	6,625,000	225,000
13	3,960,000	300,000	105,000	6,850,000	225,000
14	4,065,000	300,000	105,000	7,075,000	225,000
15	4,170,000	300,000	105,000	7,300,000	225,000
16	4,275,000	300,000	105,000	7,525,000	260,000
17	4,380,000	300,000	105,000	7,785,000	260,000
18	4,485,000	300,000	105,000	8,045,000	260,000
19	4,590,000	300,000	105,000	8,305,000	260,000
20	4,695,000	300,000	105,000	8,565,000	260,000
21	4,800,000	300,000	105,000	8,825,000	260,000
22	4,905,000	300,000	105,000	9,085,000	260,000

17/ 5

الجدول رقم - ٢ -
تحويل سلسلة رواتب مستخدمي مؤسسة مياه لبنان الشمالي
الفئة الثانية
السلك الإداري

مدير – رئيس مصلحة (إداري او مالي).

الدرجة	اساس الراتب النافذ بتاريخ 2008/5/1 ل.ل.	غلاء معيشة 2012/2/1 ل.ل	قيمة الدرجة القديمة ل.ل.	الراتب الجديد ل.ل.	قيمةالدرجة الجديدة ل.ل.
1	1,230,000	255,000	63,000	3,000,000	120,000
2	1,293,000	259,000	63,000	3,120,000	120,000
3	1,356,000	263,000	63,000	3,240,000	120,000
4	1,419,000	267,000	63,000	3,360,000	120,000
5	1,482,000	271,000	63,000	3,480,000	120,000
6	1,545,000	275,000	63,000	3,600,000	150,000
7	1,608,000	279,000	63,000	3,750,000	150,000
8	1,671,000	283,000	63,000	3,900,000	150,000
9	1,734,000	287,000	69,000	4,050,000	150,000
10	1,803,000	289,000	69,000	4,200,000	150,000
11	1,872,000	291,000	69,000	4,350,000	180,000
12	1,941,000	293,000	69,000	4,530,000	180,000
13	2,010,000	295,000	69,000	4,710,000	180,000
14	2,079,000	297,000	69,000	4,890,000	180,000
15	2,148,000	299,000	69,000	5,070,000	180,000
16	2,217,000	301,000	69,000	5,250,000	200,000
17	2,286,000	303,000	79,000	5,450,000	200,000
18	2,365,000	303,000	79,000	5,650,000	200,000
19	2,444,000	303,000	79,000	5,850,000	200,000
20	2,523,000	303,000	79,000	6,050,000	200,000
21	2,602,000	303,000	79,000	6,250,000	200,000
22	2,681,000	303,000	79,000	6,450,000	200,000

الجدول رقم - ٣ -
تحويل سلسلة رواتب مستخدمي مؤسسة مياه لبنان الشمالي
الفئة الثالثة - الرتبة الاولى
السلك الإداري

رئيس دائرة (إداري او مالي).

الدرجة	اساس الراتب الناقد بتاريخ 2008/5/1 ل.ل.	غلاء معيشة 2012/2/1 ل.ل	قيمة الدرجة القديمة ل.ل.	الراتب الجديد ل.ل.	قيمةالدرجة الجديدة ل.ل.
1	1,060,000	240,000	36,000	2,200,000	80,000
2	1,096,000	244,000	36,000	2,280,000	80,000
3	1,132,000	248,000	36,000	2,360,000	80,000
4	1,168,000	252,000	36,000	2,440,000	80,000
5	1,204,000	256,000	36,000	2,520,000	80,000
6	1,240,000	260,000	42,000	2,600,000	90,000
7	1,282,000	263,000	42,000	2,690,000	90,000
8	1,324,000	266,000	42,000	2,780,000	90,000
9	1,366,000	269,000	42,000	2,870,000	90,000
10	1,408,000	272,000	42,000	2,960,000	90,000
11	1,450,000	275,000	51,000	3,050,000	110,000
12	1,501,000	279,000	51,000	3,160,000	110,000
13	1,552,000	283,000	51,000	3,270,000	110,000
14	1,603,000	287,000	51,000	3,380,000	110,000
15	1,654,000	291,000	51,000	3,490,000	110,000
16	1,705,000	295,000	63,000	3,600,000	125,000
17	1,768,000	296,000	63,000	3,725,000	125,000
18	1,831,000	297,000	63,000	3,850,000	125,000
19	1,894,000	298,000	63,000	3,975,000	125,000
20	1,957,000	299,000	63,000	4,100,000	125,000
21	2,020,000	300,000	63,000	4,225,000	140,000
22	2,083,000	301,000	63,000	4,365,000	140,000

الجدول رقم - ٤ -
تحويل سلسلة رواتب مستخدمي مؤسسة مياه لبنان الشمالي
الفئة الثالثة - الرتبة الثانية
السلك الإداري

رئيس قسم امين سر - رئيس قسم إداري او مالي - حقوقي – اخصائي اجتماعي – مجاز علاقات عامة – مراقب إداري –مراقب مالي – مراقب عقد النفقات.

الدرجة	اساس الراتب النافذ بتاريخ 2008/5/1 ل.ل.	غلاء معيشة 2012/2/1 ل.ل	قيمة الدرجة القديمة ل.ل.	الراتب الجديد ل.ل.	قيمةالدرجة الجديدة ل.ل.
1	1,024,000	236,000	36,000	2,120,000	80,000
2	1,060,000	240,000	36,000	2,200,000	80,000
3	1,096,000	244,000	36,000	2,280,000	80,000
4	1,132,000	248,000	36,000	2,360,000	80,000
5	1,168,000	252,000	36,000	2,440,000	80,000
6	1,204,000	256,000	36,000	2,520,000	80,000
7	1,240,000	260,000	42,000	2,600,000	90,000
8	1,282,000	263,000	42,000	2,690,000	90,000
9	1,324,000	266,000	42,000	2,780,000	90,000
10	1,366,000	269,000	42,000	2,870,000	90,000
11	1,408,000	272,000	42,000	2,960,000	90,000
12	1,450,000	275,000	51,000	3,050,000	110,000
13	1,501,000	279,000	51,000	3,160,000	110,000
14	1,552,000	283,000	51,000	3,270,000	110,000
15	1,603,000	287,000	51,000	3,380,000	110,000
16	1,654,000	291,000	51,000	3,490,000	110,000
17	1,705,000	295,000	63,000	3,600,000	125,000
18	1,768,000	296,000	63,000	3,725,000	125,000
19	1,831,000	297,000	63,000	3,850,000	125,000
20	1,894,000	298,000	63,000	3,975,000	125,000
21	1,957,000	299,000	63,000	4,100,000	125,000
22	2,020,000	300,000	63,000	4,225,000	140,000

الجدول رقم - ٥ -
تحويل سلسلة رواتب مستخدمي مؤسسة مياه لبنان الشمالي
الفئة الرابعة - الرتبة الاولى
السلك الإداري

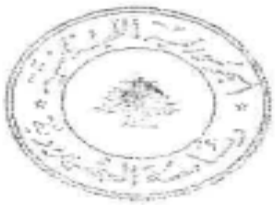
امين سر - محرر- حافظ معاون – محاسب - امين صندوق – امين مستودع.

الدرجة	اساس الراتب النافذ بتاريخ 2008/5/1 ل.ل.	غلاء معيشة 2012/2/1 ل.ل	قيمة الدرجة القديمة ل.ل.	الراتب الجديد ل.ل.	قيمةالدرجة الجديدة ل.ل.
1	750,000	240,000	28,000	1,600,000	60,000
2	778,000	244,000	28,000	1,660,000	60,000
3	806,000	248,000	28,000	1,720,000	60,000
4	834,000	216,000	28,000	1,780,000	60,000
5	862,000	218,000	28,000	1,840,000	60,000
6	890,000	220,000	32,000	1,900,000	70,000
7	922,000	223,000	32,000	1,970,000	70,000
8	954,000	226,000	32,000	2,040,000	70,000
9	986,000	229,000	32,000	2,110,000	70,000
10	1,018,000	232,000	32,000	2,180,000	70,000
11	1,050,000	235,000	36,000	2,250,000	80,000
12	1,086,000	238,000	36,000	2,330,000	80,000
13	1,122,000	241,000	36,000	2,410,000	80,000
14	1,158,000	244,000	36,000	2,490,000	80,000
15	1,194,000	247,000	36,000	2,570,000	80,000
16	1,230,000	250,000	40,000	2,650,000	90,000
17	1,270,000	254,000	40,000	2,740,000	90,000
18	1,310,000	258,000	40,000	2,830,000	90,000
19	1,350,000	262,000	40,000	2,920,000	90,000
20	1,390,000	266,000	40,000	3,010,000	90,000
21	1,430,000	270,000	40,000	3,100,000	100,000
22	1,470,000	274,000	40,000	3,200,000	100,000

جدول رقم - ٦ -
تحويل سلسلة رواتب مستخدمي مؤسسة مياه لبنان الشمالي
الفئة الرابعة - الرتبة الثانية
السلك الإداري

كاتب – مستكتب - مدخل معلومات– مندوب ضمان– معاون امين صندوق– جابـ– معاون امين مستودع– مأمور هاتف – قارىء تأشيرات .

الدرجة	اساس الراتب النافذ بتاريخ 2008/5/1 ل.ل.	غلاء معيشة 2012/2/1 ل.ل	قيمة الدرجة القديمة ل.ل.	الراتب الجديد ل.ل.	قيمةالدرجة الجديدة ل.ل.
1	640,000	240,000	24,000	1,250,000	45,000
2	664,000	244,000	24,000	1,295,000	45,000
3	688,000	248,000	24,000	1,340,000	45,000
4	712,000	216,000	24,000	1,385,000	45,000
5	736,000	218,000	24,000	1,430,000	45,000
6	760,000	210,000	27,000	1,475,000	50,000
7	787,000	213,000	27,000	1,525,000	50,000
8	814,000	216,000	27,000	1,575,000	50,000
9	841,000	219,000	27,000	1,625,000	50,000
10	868,000	222,000	27,000	1,675,000	50,000
11	895,000	225,000	31,000	1,725,000	55,000
12	926,000	229,000	31,000	1,780,000	55,000
13	957,000	233,000	31,000	1,835,000	55,000
14	988,000	237,000	31,000	1,890,000	55,000
15	1,019,000	241,000	31,000	1,945,000	55,000
16	1,050,000	245,000	35,000	2,000,000	65,000
17	1,085,000	249,000	35,000	2,065,000	65,000
18	1,120,000	253,000	35,000	2,130,000	65,000
19	1,155,000	257,000	35,000	2,195,000	65,000
20	1,190,000	261,000	35,000	2,260,000	65,000
21	1,225,000	265,000	35,000	2,325,000	75,000
22	1,260,000	269,000	35,000	2,400,000	75,000



17/ 10

جدول رقم – ٧ -
تحويل سلسلة رواتب مستخدمي مؤسسة مياه لبنان الشمالي
الفئة الخامسة
السلك الإداري

سائق – حارس – حاجب – موزع بريد.

الدرجة	اساس الراتب النافذ بتاريخ 2008/5/1 ل.ل.	غلاء معيشة 2012/2/1 ل.ل	قيمة الدرجة القديمة ل.ل.	الراتب الجديد ل.ل.	قيمةالدرجة الجديدة ل.ل.
1	575,000	175,000	21,000	950,000	35,000
2	596,000	180,000	21,000	985,000	35,000
3	617,000	185,000	21,000	1,020,000	35,000
4	638,000	190,000	21,000	1,055,000	35,000
5	659,000	195,000	21,000	1,090,000	40,000
6	680,000	200,000	21,000	1,130,000	40,000
7	701,000	205,000	21,000	1,170,000	40,000
8	722,000	210,000	27,000	1,210,000	40,000
9	749,000	212,000	27,000	1,250,000	45,000
10	776,000	214,000	27,000	1,295,000	45,000
11	803,000	216,000	27,000	1,340,000	45,000
12	830,000	218,000	27,000	1,385,000	45,000
13	857,000	220,000	27,000	1,430,000	50,000
14	884,000	222,000	27,000	1,480,000	50,000
15	911,000	224,000	32,000	1,530,000	50,000
16	943,000	227,000	32,000	1,580,000	50,000
17	975,000	230,000	32,000	1,630,000	55,000
18	1,007,000	233,000	32,000	1,685,000	55,000
19	1,039,000	236,000	32,000	1,740,000	55,000
20	1,071,000	239,000	32,000	1,795,000	55,000
21	1,103,000	242,000	32,000	1,850,000	55,000
22	1,135,000	245,000	32,000	1,905,000	55,000

الجدول رقم – ٨ -
تحويل سلسلة رواتب مستخدمي مؤسسة مياه لبنان الشمالي
الفئة الثانية
السلك الفني

مهندس مدير – مهندس رئيس مصلحة – مهندس رئيس مصلحة الإحصاء والمعلوماتية.

الدرجة	اساس الراتب النافذ بتاريخ 2008/5/1 ل.ل.	غلاء معيشة 2012/2/1 ل.ل	قيمة الدرجة القديمة ل.ل.	الراتب الجديد ل.ل.	قيمةالدرجة الجديدة ل.ل.
1	1,470,000	270,000	63,000	3,480,000	120,000
2	1,533,000	274,000	63,000	3,600,000	120,000
3	1,596,000	278,000	63,000	3,720,000	120,000
4	1,659,000	282,000	63,000	3,840,000	120,000
5	1,722,000	286,000	69,000	3,960,000	120,000
6	1,791,000	288,000	69,000	4,080,000	150,000
7	1,860,000	290,000	69,000	4,230,000	150,000
8	1,929,000	292,000	69,000	4,380,000	150,000
9	1,998,000	294,000	69,000	4,530,000	150,000
10	2,067,000	296,000	69,000	4,680,000	150,000
11	2,136,000	298,000	69,000	4,830,000	180,000
12	2,205,000	300,000	69,000	5,010,000	180,000
13	2,274,000	302,000	79,000	5,190,000	180,000
14	2,353,000	302,000	79,000	5,370,000	180,000
15	2,432,000	302,000	79,000	5,550,000	180,000
16	2,511,000	302,000	79,000	5,730,000	200,000
17	2,590,000	302,000	79,000	5,930,000	200,000
18	2,669,000	302,000	79,000	6,130,000	200,000
19	2,748,000	302,000	79,000	6,330,000	200,000
20	2,827,000	302,000	79,000	6,530,000	200,000
21	2,906,000	302,000	79,000	6,730,000	200,000
22	2,985,000	302,000	79,000	6,930,000	200,000

الجدول رقم - ٩-
تحويل سلسلة رواتب مستخدمي مؤسسة مياه لبنان الشمالي
الفئة الثالثة - الرتبة الاولى
السلك الفني

مهندس رئيس دائرة - رئيس دائرة المعلوماتية - رئيس دائرة الإحصاء – رئيس دائرة المختبر – رئيس دائرة مراقبة التنفيذ - مهندس رئيس قسم – مهندس نظم معلوماتية.

الدرجة	اساس الراتب النافذ بتاريخ 2008/5/1 ل.ل.	غلاء معيشة 2012/2/1 ل.ل	قيمة الدرجة القديمة ل.ل.	الراتب الجديد ل.ل.	قيمةالدرجة الجديدة ل.ل.
1	1,196,000	244,000	36,000	2,520,000	80,000
2	1,232,000	253,000	42,000	2,600,000	80,000
3	1,274,000	256,000	42,000	2,680,000	80,000
4	1,316,000	259,000	42,000	2,760,000	80,000
5	1,358,000	262,000	42,000	2,840,000	80,000
6	1,400,000	265,000	42,000	2,920,000	90,000
7	1,442,000	268,000	51,000	3,010,000	90,000
8	1,493,000	272,000	51,000	3,100,000	90,000
9	1,544,000	276,000	51,000	3,190,000	90,000
10	1,595,000	280,000	51,000	3,280,000	90,000
11	1,646,000	284,000	51,000	3,370,000	110,000
12	1,697,000	288,000	63,000	3,480,000	110,000
13	1,760,000	289,000	63,000	3,590,000	110,000
14	1,823,000	290,000	63,000	3,700,000	110,000
15	1,886,000	291,000	63,000	3,810,000	110,000
16	1,949,000	292,000	63,000	3,920,000	125,000
17	2,012,000	293,000	63,000	4,045,000	125,000
18	2,075,000	294,000	63,000	4,170,000	125,000
19	2,138,000	295,000	63,000	4,295,000	125,000
20	2,201,000	296,000	63,000	4,420,000	125,000
21	2,264,000	297,000	63,000	4,545,000	140,000
22	2,327,000	298,000	63,000	4,685,000	140,000

الجدول رقم - ١٠ -
تحويل سلسلة رواتب مستخدمي مؤسسة مياه لبنان الشمالي
الفئة الثالثة - الرتبة الثانية
السلك الفني

إختصاصي صيانة شبكات – مبرمج – إحصائي – مساح مجاز – مخبري مجاز.

الدرجة	اساس الراتب النافذ بتاريخ 2008/5/1 ل.ل.	غلاء معيشة 2012/2/1 ل.ل	قيمة الدرجة القديمة ل.ل.	الراتب الجديد ل.ل.	قيمةالدرجة الجديدة ل.ل.
1	1,160,000	240,000	36,000	2,440,000	80,000
2	1,196,000	244,000	36,000	2,520,000	80,000
3	1,232,000	253,000	42,000	2,600,000	80,000
4	1,274,000	256,000	42,000	2,680,000	80,000
5	1,316,000	259,000	42,000	2,760,000	80,000
6	1,358,000	262,000	42,000	2,840,000	80,000
7	1,400,000	265,000	42,000	2,920,000	90,000
8	1,442,000	268,000	51,000	3,010,000	90,000
9	1,493,000	272,000	51,000	3,100,000	90,000
10	1,544,000	276,000	51,000	3,190,000	90,000
11	1,595,000	280,000	51,000	3,280,000	90,000
12	1,646,000	284,000	51,000	3,370,000	110,000
13	1,697,000	288,000	63,000	3,480,000	110,000
14	1,760,000	289,000	63,000	3,590,000	110,000
15	1,823,000	290,000	63,000	3,700,000	110,000
16	1,886,000	291,000	63,000	3,810,000	110,000
17	1,949,000	292,000	63,000	3,920,000	125,000
18	2,012,000	293,000	63,000	4,045,000	125,000
19	2,075,000	294,000	63,000	4,170,000	125,000
20	2,138,000	295,000	63,000	4,295,000	125,000
21	2,201,000	296,000	63,000	4,420,000	125,000
22	2,264,000	297,000	63,000	4,545,000	140,000

جدول رقم - ١١ -
تحويل سلسلة رواتب مستخدمي مؤسسة مياه لبنان الشمالي
الفئة الرابعة - الرتبة الاولى
السلك الفني

أخصائي برمجة معلوماتية – أخصائي نظم معلوماتي – رسام – ناظر مراقبي توزيع – مدرب - أخصائي اول – مخبري – مساح .

الدرجة	اساس الراتب النافذ بتاريخ 2008/5/1 ل.ل.	غلاء معيشة 2012/2/1 ل.ل	قيمة الدرجة القديمة ل.ل.	الراتب الجديد ل.ل.	قيمةالدرجة الجديدة ل.ل.
1	854,000	221,000	28,000	1,840,000	60,000
2	882,000	223,000	32,000	1,900,000	60,000
3	914,000	226,000	32,000	1,960,000	60,000
4	946,000	229,000	32,000	2,020,000	60,000
5	978,000	232,000	32,000	2,080,000	60,000
6	1,010,000	235,000	32,000	2,140,000	70,000
7	1,042,000	238,000	36,000	2,210,000	70,000
8	1,078,000	241,000	36,000	2,280,000	70,000
9	1,114,000	244,000	36,000	2,350,000	70,000
10	1,150,000	247,000	36,000	2,420,000	70,000
11	1,186,000	250,000	36,000	2,490,000	80,000
12	1,222,000	353,000	40,000	2,570,000	80,000
13	1,262,000	257,000	40,000	2,650,000	80,000
14	1,302,000	261,000	40,000	2,730,000	80,000
15	1,342,000	265,000	40,000	2,810,000	80,000
16	1,382,000	269,000	40,000	2,890,000	90,000
17	1,422,000	273,000	40,000	2,980,000	90,000
18	1,462,000	277,000	40,000	3,070,000	90,000
19	1,502,000	281,000	40,000	3,160,000	90,000
20	1,542,000	285,000	40,000	3,250,000	90,000
21	1,582,000	289,000	40,000	3,340,000	100,000
22	1,622,000	293,000	40,000	3,440,000	100,000

جدول رقم - ١٢ -
تحويل سلسلة رواتب مستخدمي مؤسسة مياه لبنان الشمالي
الفئة الرابعة - الرتبة الثانية
السلك الفني

أخصائي معلوماتية – أخصائي – مراقب توزيع – سائق آليات – مساعد مخبري .

الدرجة	اساس الراتب النافذ بتاريخ 2008/5/1 ل.ل.	غلاء معيشة 2012/2/1 ل.ل	قيمة الدرجة القديمة ل.ل.	الراتب الجديد ل.ل.	قيمةالدرجة الجديدة ل.ل.
1	728,000	212,000	24,000	1,430,000	45,000
2	752,000	213,000	27,000	1,475,000	45,000
3	779,000	216,000	27,000	1,520,000	45,000
4	806,000	219,000	27,000	1,565,000	45,000
5	833,000	222,000	27,000	1,610,000	45,000
6	860,000	225,000	27,000	1,655,000	50,000
7	887,000	228,000	31,000	1,705,000	50,000
8	918,000	232,000	31,000	1,755,000	50,000
9	949,000	236,000	31,000	1,805,000	50,000
10	980,000	240,000	31,000	1,855,000	50,000
11	1,011,000	244,000	27,000	1,905,000	55,000
12	1,042,000	248,000	35,000	1,960,000	55,000
13	1,077,000	252,000	35,000	2,015,000	55,000
14	1,112,000	256,000	35,000	2,070,000	55,000
15	1,147,000	260,000	35,000	2,125,000	55,000
16	1,182,000	264,000	35,000	2,180,000	65,000
17	1,217,000	268,000	35,000	2,245,000	65,000
18	1,252,000	272,000	35,000	2,310,000	65,000
19	1,287,000	276,000	35,000	2,375,000	65,000
20	1,322,000	280,000	35,000	2,440,000	65,000
21	1,357,000	284,000	35,000	2,505,000	75,000
22	1,392,000	288,000	35,000	2,580,000	75,000

جدول رقم – ١٣ -
تحويل سلسلة رواتب مستخدمي مؤسسة مياه لبنان الشمالي
الفئة الخامسة
السلك الفني

عامل مهني – إعتيان .

الدرجة	اساس الراتب النافذ بتاريخ 2008/5/1 ل.ل.	غلاء معيشة 2012/2/1 ل.ل	قيمة الدرجة القديمة ل.ل.	الراتب الجديد ل.ل.	قيمةالدرجة الجديدة ل.ل.
1	617,000	185,000	21,000	1,020,000	35000
2	638,000	190,000	21,000	1,055,000	35,000
3	659,000	195,000	21,000	1,090,000	40,000
4	680,000	200,000	21,000	1,130,000	40,000
5	701,000	205,000	21,000	1,170,000	40,000
6	722,000	210,000	27,000	1,210,000	40,000
7	749,000	212,000	27,000	1,250,000	45,000
8	776,000	214,000	27,000	1,295,000	45,000
9	803,000	216,000	27,000	1,340,000	45,000
10	830,000	218,000	27,000	1,385,000	45,000
11	857,000	220,000	27,000	1,430,000	50,000
12	884,000	222,000	27,000	1,480,000	50,000
13	911,000	224,000	32,000	1,530,000	50,000
14	943,000	227,000	32,000	1,580,000	50,000
15	975,000	230,000	32,000	1,630,000	55,000
16	1,007,000	233,000	32,000	1,685,000	55,000
17	1,039,000	236,000	32,000	1,740,000	55,000
18	1,071,000	239,000	32,000	1,795,000	55,000
19	1,103,000	242,000	32,000	1,850,000	55,000
20	1,135,000	245,000	32,000	1,905,000	55,000
21	1,167,000	249,000	32,000	1,960,000	55,000
22	1,199,000	255,000	32,000	2,015,000	55,000

17/ 17

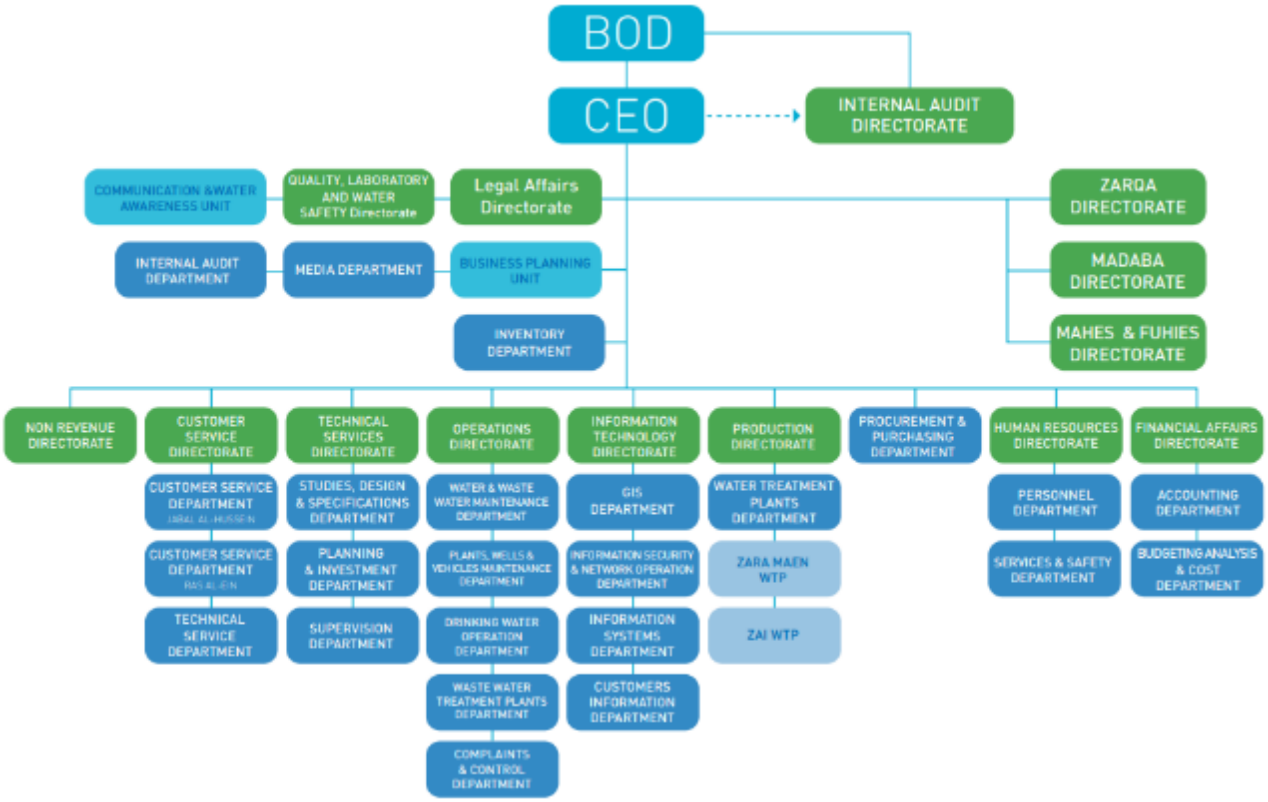
6.7 ELEMENTS OF BENCHMARKING

6.7.1 Miyahuna – Jordan

Jordan Water Company – Miyahuna was established as a limited liability company in 2006. The company is wholly owned by WAJ (Water Authority of Jordan).

Miyahuna is responsible for the water & sanitation services of the Capital Governorate of Jordan, according to a management contract signed with the national water authority. Miyahuna extended its area to Madaba Governorate, since 2019, Zarqa Governorate since 2020 and Mahes & Fuheis Directorate since 2020.

Figure 13
Miyahuna Organizational Chart



Source: Miyahuna Annual Report 2020

Total number of employees was 1,774 at the end of 2020.

Table 25
Miyahuna – Current tariff in Amman

JD/m3		up to 18 m3 Fixed fee	19-36 m3	37-54 m3	55-72 m3	73-90 m3	91-126 m3	> 127 m3
Residential	Water	6,50	0,45	0,55	1,00	1,20	1,62	1,92
	Water + Sewerage	7,22	0,51	0,84	1,57	2,00	2,55	3,02

JD/m3		up to 6 m3 Fixed fee	> 7 m3
Non-residential	Water	13,80	1,43
	Water + Sewerage	18,63	2,38

Source: Miyahuna website

a) Water production and distribution

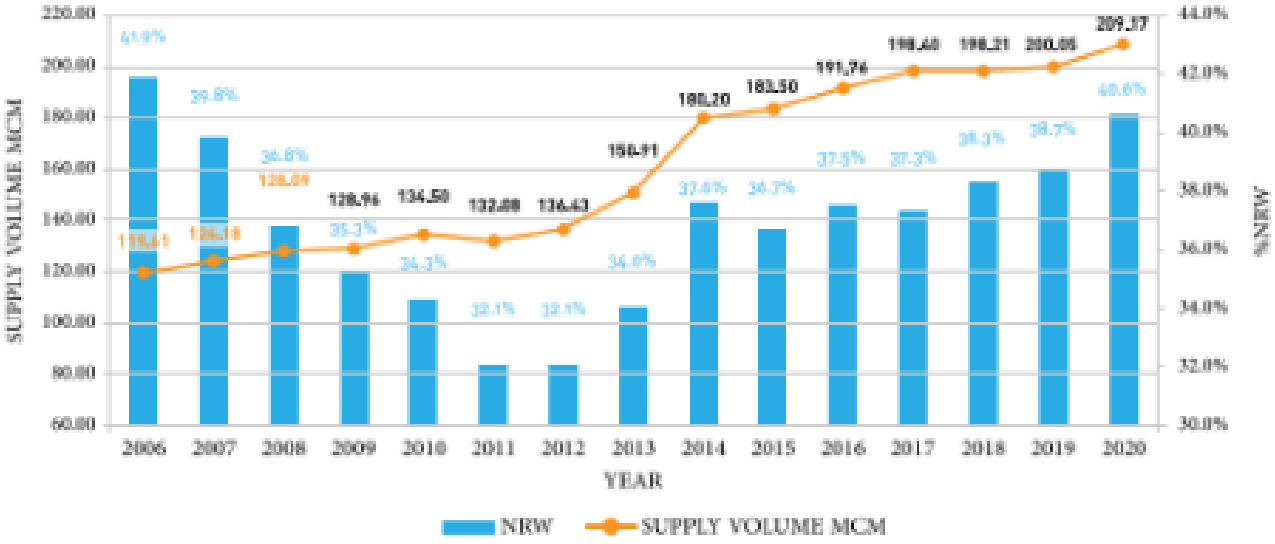
Amman governorate is fed mainly from:

- a number of local well fields and springs, which totaled 31.6 Mm^3/year in 2020
- the Zara Maeen WTP (34.1 Mm^3/year)
- the Zai WTP (85.6 Mm^3/year)
- the Disi system (100 Mm^3/year). In 2020, the Zara Maeen WTP fed Amman with 34.11 MCM, the Zai WTP fed Amman with 85.5 MCM, and the Disi system[11] fed Amman with 100 MCM.

In counterpart, about 43.7 Mm^3/year are exported to neighboring governorates.

In 2020, Miyahuna distributed 209.2 Mm^3 in Amman to 730,740 water subscribers along 851.85 km of water network. The NRW rate was 40.6%.

Figure 14
Miyahuna – Supply volume and NRW – Capital Governorate



Source: Miyahuna Annual Report 2020

Table 26
Miyahuna – Occurrence of fractures and repairs in Amman water distribution

Year	Water network length (km)	N° of fractures on main lines	N° of fractures on connections	Total n° of repairs	% of fractures per km
2017	9 805	6 816	26 722	33 538	3.42
2018	9 950	5 690	25 427	31 117	3.12
2019	10 172	6 140	27 792	33 932	3.34
2020	10 180	6 118	25 093	31 211	3.06

Source: Miyahuna Annual Report 2020

In 2020, 3,574 invisible leaks have been identified through leakage detection campaigns. During the same year, the Illegal Uses Detection Division discovered and solved 2,418 illegal cases.

[11] The Disi Water Conveyance Project transports water to Amman and other Jordanian cities in the north, including Zarqa, Ajloun, Irbid, Mafraq and Jerash, from Disi, a fossil aquifer located on the border with Saudi Arabia in the south-east. The project began in 2009 and became operational in 2013, at a cost of about $1.1 billion.

b) Water sales

Total water sales in 2020 amounted to JD 93.9 million (€ 81.8 million), out of it JD 73.5 million was achieved in Amman Directorate. The apparent unit price for water in Amman was 0.59 JD/m^3 (0.52 €/m^3).

The collection rate reached 90.3% at the end of 2020, despite a decrease of the % due to the Corona pandemic.

Electronic payments amounted to 32.7% of the total collections.

Table 27
Miyahuna – Financial statements

		JD 2020	2019	€ 2020	2019
Assets	Non-current assets	148 334 616	136 252 905	129 211 338	108 223 118
	Accounts receivable	43 499 514	30 966 311	37 891 563	24 595 958
	Cash & equivalents	41 624 999	9 471 729	36 258 710	7 523 216
	Other current assets	97 506 601	61 700 962	84 936 064	49 007 913
	Total	330 965 730	238 391 907	288 297 674	189 350 204
Equity & Liabilities	Net Equity	141 756 601	98 723 597	123 481 360	78 414 295
	Non-current loans	51 744 835	47 790 428	45 073 898	37 959 037
	Other non-current	56 852 584	40 654 015	49 523 157	32 290 719
	Current loans	622 125	61 972	541 921	49 223
	Other current	79 989 585	51 161 895	69 677 339	40 636 930
	Total	330 965 730	238 391 907	288 297 674	189 350 204
Revenues	Water sales	93 868 983	73 207 856	81 767 407	58 147 622
	Water connection fees	56 972 095	46 495 683	49 627 260	36 930 646
	Sewerage revenues	4 572 315	6 424 976	3 982 853	5 103 237
	Sew. Connection fees	5 397 046	7 698 917	4 701 260	6 115 105
	Other	6 538 441	29 945 737	5 695 506	23 785 335
	Total	167 348 880	163 773 169	145 774 286	130 081 945
Operating expenses	Water purchases	4 751 703		4 139 114	0
	Electricity	93 552 897	90 717 584	81 492 071	72 055 269
	Salaries	29 739 721	23 117 308	25 905 680	18 361 643
	Outsourced treatment	23 833 985	27 548 250	20 761 311	21 881 056
	O&M expenses	20 862 753	17 948 688	18 173 130	14 256 305
	Admin. Expesnes	7 459 261	32 352 117	6 497 614	25 696 678
	Total	180 200 320	191 683 947	156 968 920	152 250 951
Other expenses	Depreciations	8 031 336	8 197 830	6 995 937	6 511 382
	Loan service	3 706 950	1 838 609	3 229 051	1 460 373
	Other	5 224 647	-748 594	4 551 086	-594 594
	Total	16 962 933	9 287 845	14 776 074	7 377 160
Profit & Loss Result	Operation	-29 814 373	-37 198 623	-25 970 708	-29 546 166
	Water Authority Subsidy	170 461 675		148 485 780	0
	Total	140 647 302	-37 198 623	122 515 071	-29 546 166
Cahs Flow	Beginning of year	9 641 729	4 924 486	8 398 719	3 911 427
	Operating activities	40 971 710	23 788 065	35 689 643	18 894 412
	Investing activities	-8 768 102	-18 928 326	-7 637 720	-15 034 413
	Financing activities	-218 338	-142 496	-190 190	-113 182
	End of year	41 626 999	9 641 729	36 260 452	7 658 244
Exchange rates			31/12/2019	JD 1,00 = € 1,259	
			31/12/2020	JD 1,00 = € 1,148	

6.7.2 SONEDE – Tunisia

SONEDE is a national autonomous public utility, created in 1968, with the responsibly of the water supply services in all urban centers of the country (8.044 million inhabitants in 2020) as well as part of the rural areas (3.741 million inhabitants. SONEDE has financial autonomy and is placed under the tutela of the Ministry of Agriculture.

SONEDE's mission embraces the entire value chain of water supply (production, treatment and transport, distribution, commercial management of subscribers, development of new infrastructure). However, SONEDE is not in charge of sewerage services, which are provided by another public company, ONAS.

Table 28
SONEDE – Main indicators (2020)

Coverage rate	Total	%	98.3
	Urban	%	100.0
	Rural	%	94.7
Water production	Total	Mm^3/yr	759.1
	Surface water	Mm^3/yr	431.2
	Underground water	Mm^3/yr	285.2
	Desalination	Mm^3/yr	42.7
Water distribution	Distributed volume	Mm^3/yr	664.5
	Billed volume	Mm^3/yr	465.5
Network length	Total	km	56 651
	Transportation	Km	9 968
	Distribution	km	46 593
N° of customers	Total	N°	3 038 656
	Domestic customers	N°	2 900 738
	Non-domestic customers	N°	137 918
Average consumption	Per customer	m3/month	12.8
	Domestic customers		10.8
	Non-domestic customers		55.1
Efficiency	Overall	%	71.9%
	Transportation		88.5%
	Distribution		76.3%
Personnel	N° of employees	N°	6 239
	Employees / 1000 customers		2.05
Average price		DN/m^3	0.765
		$€/m^3$	0.23

Source: SONEDE - Rapport Statistique 2020

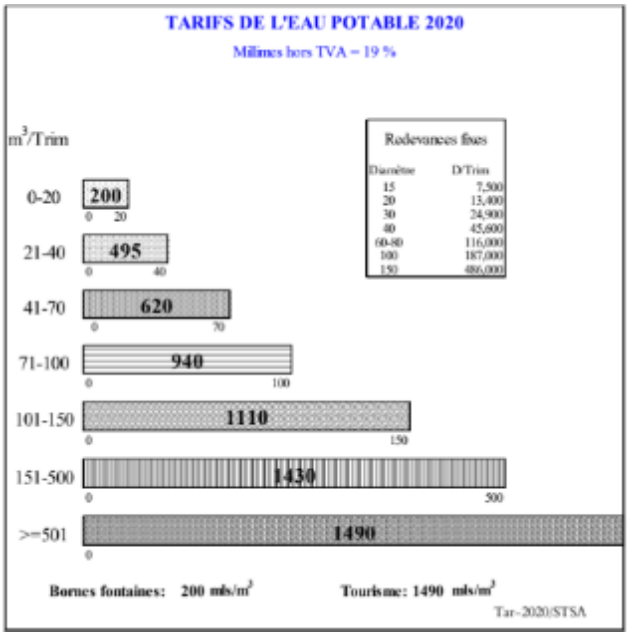
Table 29
SONEDE – Human resources

N° of employees	Technical		Administrative		Total	
High level	417		230		647	10.4%
Medium level	703		588		1 291	20.9%
Execution	3 112		1 189		4 301	68.9%
Total	4 232	67.8%	2 007	32.2%	6 239	100%

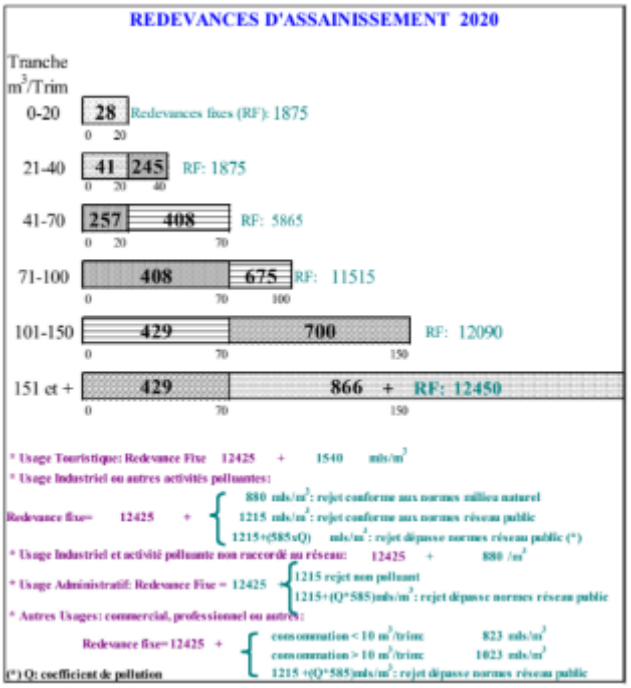
Source: SONEDE - Rapport Statistique 2020

Figure 15
Tunisia – Water and sewerage tariffs (2020)

Water (SONEDE)



SEWERAGE (ONAS)



6.7.3 NWSC - Uganda

The National Water and Sewerage Corporation (NWSC) was created as a government-owned organization in 1972, at that time serving only the capital Kampala as well as Entebbe and Jinja.

NWSC is fully owned by the government of Uganda. It operates as an autonomous water board with a separate legal status, under the jurisdiction of the MWE (Ministry of Water and Environment), which appoints its Board of Directors to formulate the policies by which the corporation is run.

Table 30
NWSC main indicators

		FY June 2014
Operating revenue	M USh	184 349
Operating costs	M USh	152 378
EBIT	M USh	31 971
Depreciation	M USh	21 852
EBITDA	M USh	10 119
N° of subscribers water		366 330
N° of subscribers sewerage		18 810
Water service coverage (%)		81,0%
Public standposts		9 638
N° of employees		2 263
/ 1000 connections		6,2
Water main total network	km	7 113
Sewer main total network	km	483
Water production	Mm^3/year	93,8
Water supplied	Mm^3/year	92,0
Water sold	Mm^3/year	61,1
Metered accounts		364 637
Non revenue water	%	33,7%
Collection efficiency	%	96,0%

During the 1970s and early 1980s, Uganda was subject to public turmoil, and the performance of NWSC, like many other institutions, declined considerably. Between 1986 and 1997, the NWSC embarked on major rehabilitation and expansion of its water supply and sewage systems with the help of international donor support.

In 1995 (NWSC Statute) and 2000 (NWSC Act), NWSC was reorganized, giving it more operational autonomy and the mandate to operate and provide water and sewerage in areas entrusted to it, on a sound, commercial, and viable basis.

Among other problems, NWSC had, in 1998:

- An astonishing volume of labor force (1,800 employees => 36 employees/1,000 connections). Staff costs accounted for 64% of the total operating costs
- High NRW: 50-60 % and low collection rate: 60 %
- Poor service, poor vision from the customers: delays, corruption, etc.
- Lack of performance incentives
- Recurrent deficit around US$ 300,000 per month, despite a rather high average tariff (close to 1.00 US$/$m^3$). At least 3 unviable towns among the 12 cities operated by NWSC

In late 1998, more emphasis was placed on commercial viability. At the same time, political interference within the utility was reduced. The reform strategy was then built on a number of short-term performance enhancement programs.

- A first step was a "100 days programme" bound to a change of management, aiming at reversing operational & financial inefficiencies (Feb-May 1999).
- Then, a Service and Revenue Enhancement Programme (SEREP) was launched to restore customer confidence and thus service enhancement (August 1999 – August 2000).
- Area & Service Performance contracts were established aiming at financial break-even of each area (branch-town) by empowering managers and giving them autonomy of decisions. The performance contract with the government increased the NWSC's accountability for results and provided incentives for good performance. Area performance contracts in turn transferred more autonomy to the town level (Kampala) and the branch level, defined the targets more specifically, and introduced accountability for results (2000 – 2003).
- The Stretch Programme focused on improving operating margins by reducing bureaucracy, simplifying processes and instilling self-confidence. This program resulted in a higher level of commitment from the employees due to internal communication improvement and higher performance targets (with correspondingly better incentives for achievement) were set (2002 – 2003).
- The One-Minute Management Programme determined individual performance accountability. Therefore, not just business units but also individuals can accurately be held accountable for their outputs (2003).
- Furthermore, the Internal Delegated Area Management Contracts (IDAMCs) consolidated the decentralization process through the establishment of a contractual (internal) framework summarizing the relationship between NWSC, Kampala Water and the branches as business units, giving more autonomy and better incentive plans to operating teams (since 2003).
- Outsourcing of non-core activities (guard services, motor vehicle maintenance, etc.) was also an issue to reduce the costs.

To improve the situation, the Government of Uganda (GoU) embarked on a comprehensive program of investments in services in the urban sub-sector with the launch of the reform of the Urban Water Sector Programme in 2002. The program was later extended to include sanitation and renamed Reform of the Urban Water & Sanitation Sector Programme (RUWASS) with the aim of supporting GoU initiatives to develop the sub-sector into an efficient, sustainable, and affordable service to the population, underscored by sound governance, efficient investment management and a cost-efficient delivery system.

Since 2000, NWSC has worked under performance contracts with the national government, each covering three years. The contracts contain precise performance indicators, which the NWSC is expected to achieve. For example, the 2003-2006 contract required NWSC to reduce NRW from 39% in 2003 to 36% in 2006. Simultaneously, inactive connections should be reduced from 21% to 13%. To encourage management to achieve the targets, an incentive element of 25% of the annual basic salary depended on the fulfillment of the contract. Each year the NWSC board decides the appropriate bonus rate that the NWSC management receives.

Every employee has an individual "pseudo contract" outlining specific, key, verifiable tasks and deliverables. Achievement of performance targets is accompanied by incentive payments that can be as high as 50 percent of the basic salary. However, underachievement of the performance standards below a certain level may lead to members of the area management team forfeiting 25% of their basic pay.

The reform was also supported by two contracts of technical assistance with foreign companies, focusing on Kampala area:

- Kampala Revenue Improvement Project (KRIP) with Gauff (Germany) in 1998-2000:
- Kampala WSS Area Management Contract with Ondeo (Suez – France) in 2002-2004.

Since then, it has been decided to suspend international technical assistance.

Subsequently NWSC service area gradually grew to incorporate large and mid-sized towns all over Uganda, reaching a total of 23 towns in 2008, and 74 in January 2021.

At the end of FY 2013-14, total company staff was 2,263, of which:

- 350 allocated at head office
- 816 allocated at Kampala Water
- 1,832 allocated in the other areas.

51 members have the statute of managers (31 at HQ and 20 on sites)

By the year end, staff productivity was 6 employees per 1,000 connections, against a target of 5. The performance during the year was below the target, partly due to the take-over of new towns where the productivity ratios were less effective.

Since 2000, all NWSC staff are employed on contract basis of 2 years. The contract period was increased to 3 years since July 2012.

The appraisal process is an essential tool for staff evaluation, motivation, and retention. The 5% turnover rate at NWSC is quite reasonable and reflects the company's attractive character.

The training expenses represented in 2015-16 a proportion of 1,17% of the USh 61.2 billion staff costs, which is close to European averages.

Table 31
Training programs Budget - FY2015-2016

DIRECTORATE	AMOUNT USh	% of Total	Nb of trainees*	Average training cost/trainee USh	Nb days of Trainings
ENGINEERING	191 878 600	18,6%	720	266 498	3 550
COMMERCIAL	64 836 000	6,3%	530	122 332	2 100
MANAGEMENT	54 612 000	5,3%	190	287 432	425
FIN & ACCOUNTS	67 154 000	6,5%	531	126 467	1 162
P&CD	75 240 000	7,3%	103	730 485	190
BSS	18 600 000	1,8%	90	206 667	234
AUDIT	23 315 000	2,3%	66	353 258	132
CROSS CUTTING	403 399 500	39,0%	1 080	373 518	10 185
REGIONAL	134 078 500	13,0%	650	206 275	4 200
TOTAL	1 033 113 600	100,00%	3 960	260 887	22 178

Source: ASPA (2016). Kampala Water Lake Victoria WATSAN Project. NWSC Capacity Assessment and Development of a Long-Term Assistance Programme. Final Report
Exchange rate: € 1.00 = Ush 3,448

6.7.4 Sofiyska Voda – Sofia - Bulgaria

Sofiyska Voda JSC is a joint stock company in charge of water supply and sewage services for the municipality of Sofia. The total population of the territory was estimated to be 1,319,804 in 2015 and 1,366,936 in 2021.

The company provides 100% coverage of water services on the territory of the municipality (1,348.9 km²°. Furthermore, Sofiyska Voda JSC supplies raw water for VIK EOOD Sofia District, treated water for the needs of the neighboring town of Bozhurishte and non-potable water for the needs of the industrial enterprises.

As of 2015, the customer data base of the company included 617,245 customer numbers using the water supply service, which covers the four water supply systems

Total number of water customers (2021): 655,970

Total number of sewerage customers (2015): 553,598

The company measures and bills consumption of about 105,000 water meters (2021).

a) Water production and distribution

Water for the Municipality of Sofia mainly comes from the Iskar Dam, a multiannual compensating reservoir with a total volume of 655 Mm^3, able to supply from 570 to 630 Mm^3/year. It ensures about 80% of Sofia's water supply, through the WTPs of Bistritsa, Pancharevo and Passarel. Beli Iskar dam (15.3 Mm^3 reservoir), Vitosha catchments and some other alternative sources complete the sources of raw water for Greater Sofia.

The WTP Bistritsa was constructed at the first stage with a capacity of 6.75 m^3/s. The final planned capacity is 13.5 m^3/s.

The WTP Pancharevo was commissioned in 1968, with a 4.5 m^3/s capacity.

Other WTPs with minor installed capacity were commissioned in 2011, in Dolni Passarel and Tala Tsarkva (2 m^3/s).

The territory of the Municipality of Sofia is water supplied by means of 4 water main rings.

The total length of the water main network is 3,814 km (2015). 15 strategic distribution reservoirs sum up a total volume of 336,560 m^3.

According to the Business Plan 2017-2020, the water main network is in unsatisfactory operational condition. In the oldest parts of the city a large part of the network was commissioned at the start of the 20th century. Suburban zones are also problematic areas, with parts of the network constructed at the expense of the customers and sometimes passing through private properties, do not meet technical requirements. Their replacement is impeded by regulation issues.

The general water scheme is designed as a gravity one. However, the company manages 13 pumping stations which are necessary for supplying some specific zones.

Billed consumption in 2015:

- Domestic customers 61.086 Mm3/year daily average consumption 127 lcd
- Budget customers 4.512 Mm3/year
- Commercial customers 13.836 Mm3/year
- Industrial customers 4.449 Mm3/year

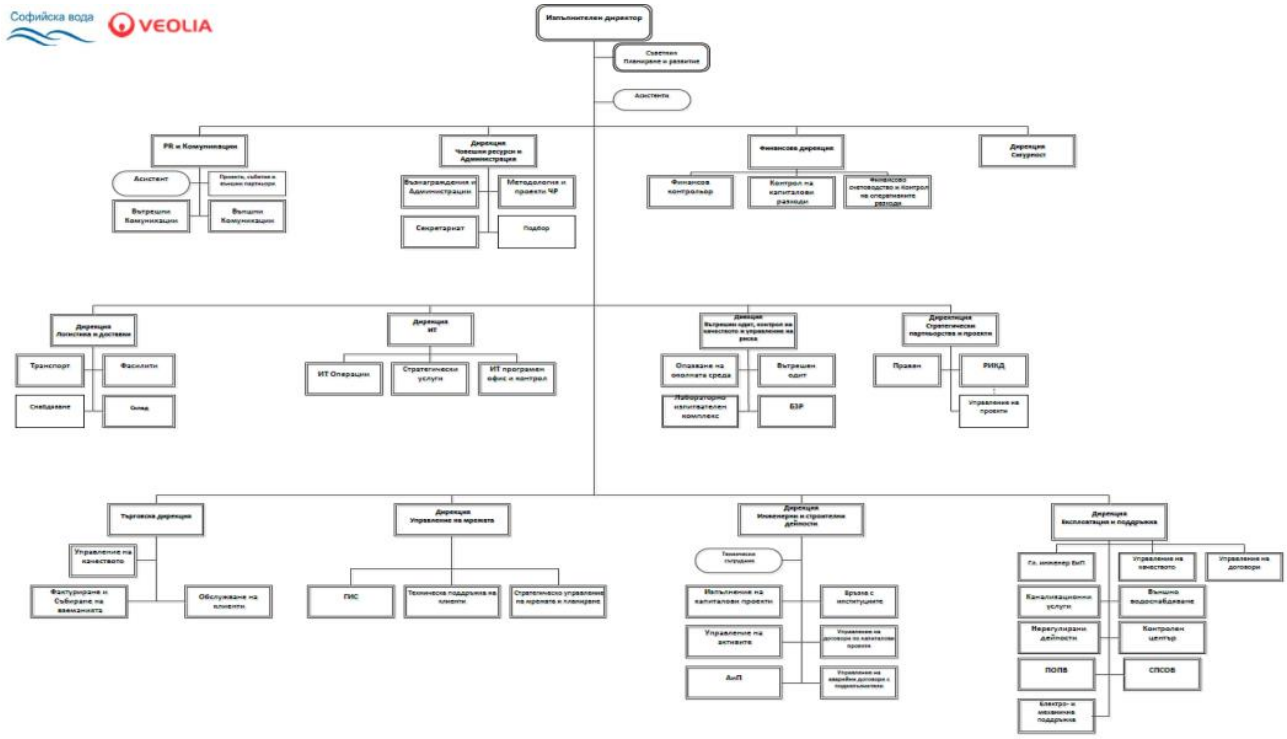
b) Sewerage

The sewer network was initiated by 1897. To date (2015), the length of the 11 main sewer collectors is more than 430 km. while the length of the serviced sewer network is 16,77 km.

Kubratovo WWTP only receives a part of the collected effluent.

c) Organization

Figure 16
Sofiyska Voda – Organization chart



The company is organized with 4 hierarchical levels:

- A Directorate is managed by a Director and consists of one or several interrelated Departments
- A Department is which is managed by a Senior Manager and consists of one or several interrelated Sectors
- A Sector is managed by a Manager and consists of one or several interrelated teams
- A Team is managed by a Supervisor or an equivalent position.

The main functional areas are divided into 11 Directorates and one Department that reports directly to the Executive Director. The "Operation and maintenance", "Engineering and construction activities" and "Network Management" Directorates cover the processes related to the management, operation and maintenance of water supply and sewerage network within the concession area as well as the realization of the investment program of the company.

Activities related to customer service are united within the Commercial Directorate.

Other directorates presented on the chart are administrative in nature and aim to ensure all processes in support of the core business of the company.

For operational purposes, the territory has been divided into 6 zones, each one with 4 separate regions and a total of 28 operational regions.

In 2015, a new ERP form SAP was implemented. It allowed a reduction of staffing due to the higher level of automation of different tasks.

d) Staffing

Table 32
Sofiyska Voda – Existing and planned staff (2015)

N° of employees	Water supply	Sewerage	Treatment	Unregulated	Total
Existing	690	99	187	88	1 064
Planned	725	111	211	97	1 144

Source: Sofiyska Voda Business Plan 2017-2022
Unregulated business includes raw water supply to other operators and non-potable water supply

At the end of 2014, the Billing and Corrections teams counted 59 employees, of which: 44 in Billing, 13 in Corrections and 2 in Payment Maintenance. At the end of July 2016, the department counted only 48 employees, (32 in billing, 13 in corrections and 3 in payments maintenance). In total, 11 employees were not necessary anymore, due to the implementation of highly automatized billing processes. These employees were internally transferred to other departments, where additional workforce was needed.

e) NRW

Figure 17
Sofiyska Voda – Water balance (2015) (in m^3/year)

<table>
<tr><td rowspan="8">Total water volume at the system inlet
158 249 702</td><td rowspan="3">total authorized consumption
85 752 164</td><td rowspan="2">Sold billed water
79 434 122</td><td>Billed metered
78 624 151</td><td rowspan="2">Total billed water
79 434 122</td></tr>
<tr><td>Billed unmetered
809 971</td></tr>
<tr><td rowspan="2">Supplied unbilled water
6 318 042</td><td>Unbilled metered
2 848 348</td><td rowspan="6">Non-revenue water
78 815 580</td></tr>
<tr><td>Unbilled unmetered
3 469 694</td></tr>
<tr><td rowspan="5">Total water losses
72 497 538</td><td rowspan="2">Commercial water losses
21 749 261</td><td>Unauthorized cons.
17 696 558</td></tr>
<tr><td>Metering inaccuracy
4 052 703</td></tr>
<tr><td rowspan="4">Actual water losses
50 748 277</td><td>Raw water & treatment
761 224</td></tr>
<tr><td>Distribution system
32 161 720</td></tr>
<tr><td>Reservoirs
507 483</td></tr>
<tr><td>Service connections
17 317 849</td></tr>
</table>

6.8 GENERIC ORGANIZATIONAL CHARTS FOR A W&S UTILITY

Water & Sewerage utilities are usually organized according to an overarching structure rather similar everywhere.

The following figures synthetize a generic organizational chart proposed as a starting point for further participative interaction with the respective WEs, to fine-tune the most appropriate chart for each specific case.

Figure 18
Starting figure for the review of the organizational chart

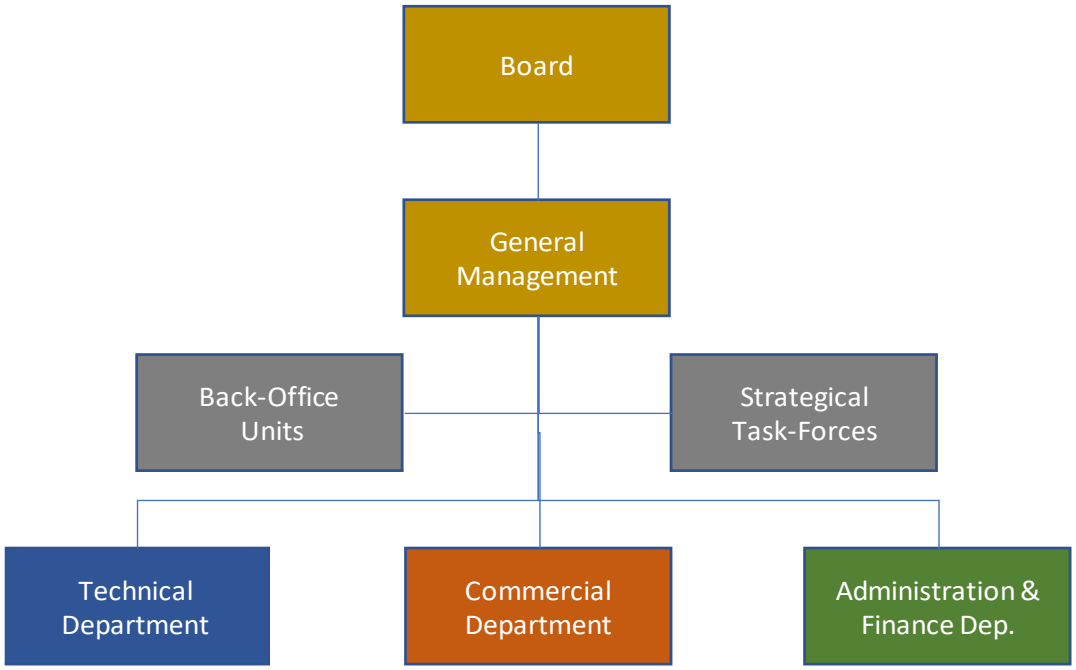


Figure 19
Starting figure for the review of the organizational chart – Technical Department

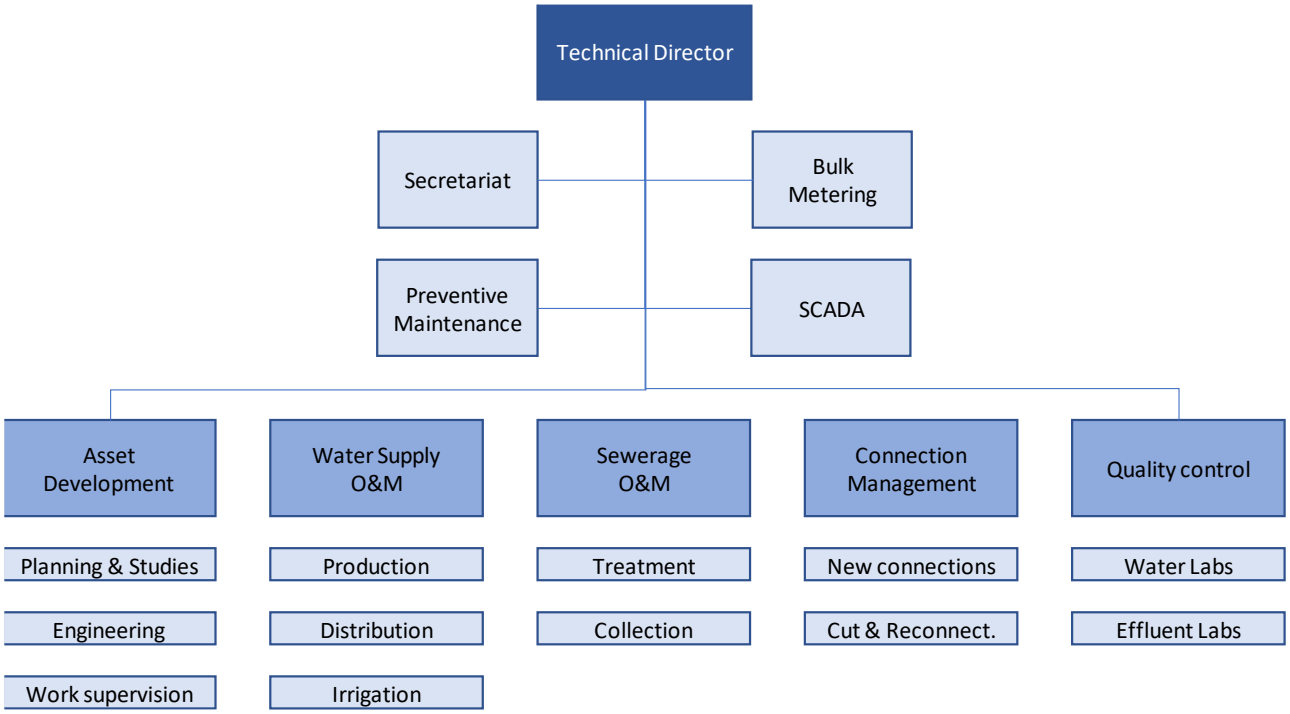


Figure 20
Starting figure for the review of the organizational chart – Commercial Department

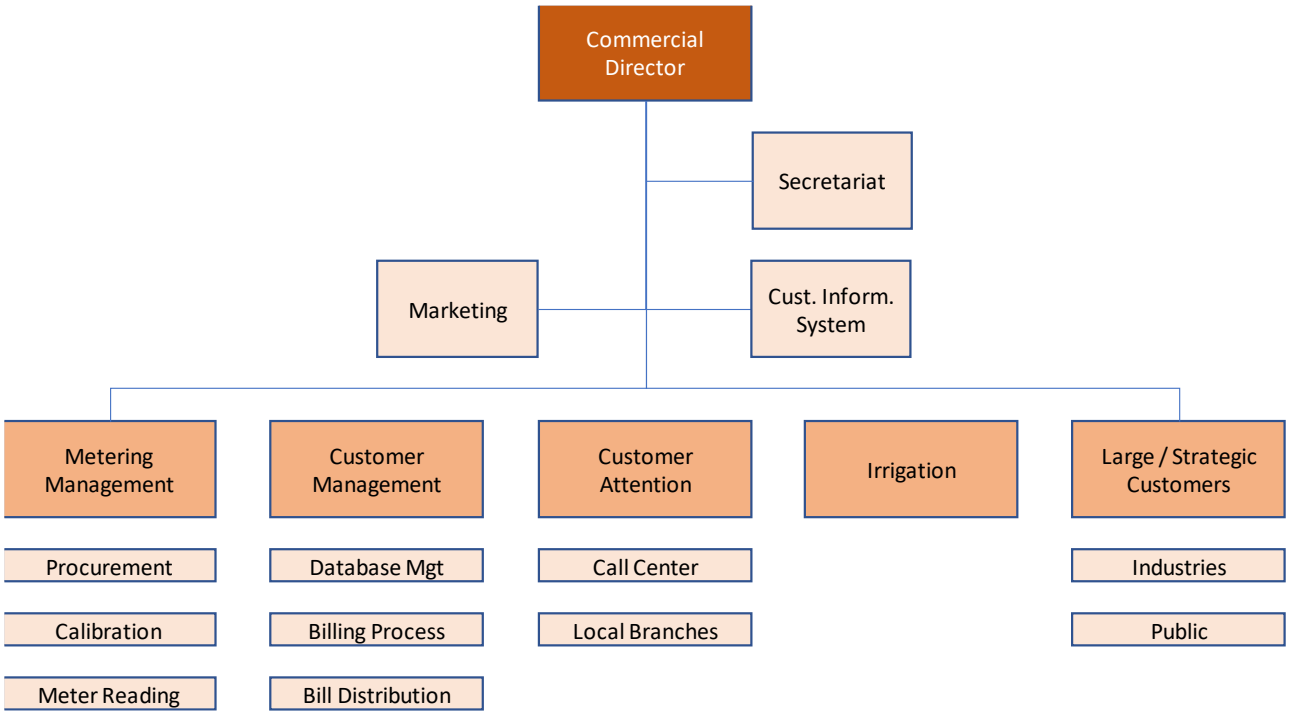


Figure 21
Starting figure for the review of the organizational chart – Adm & Fin Department

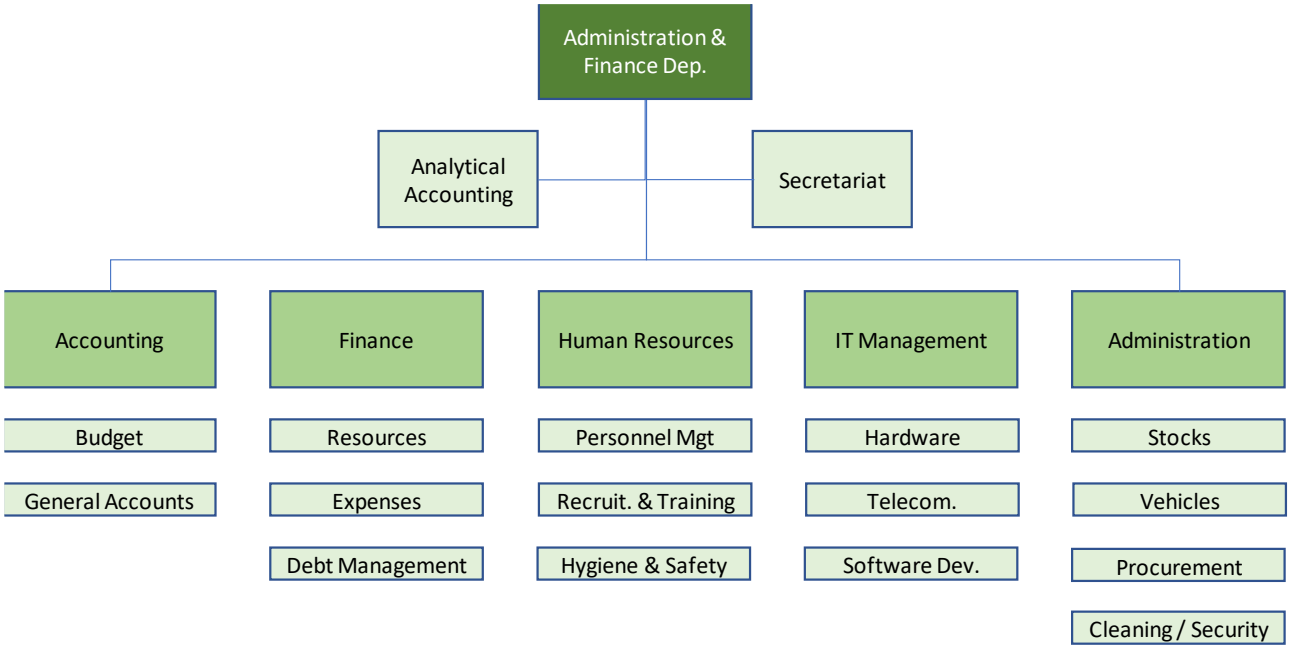
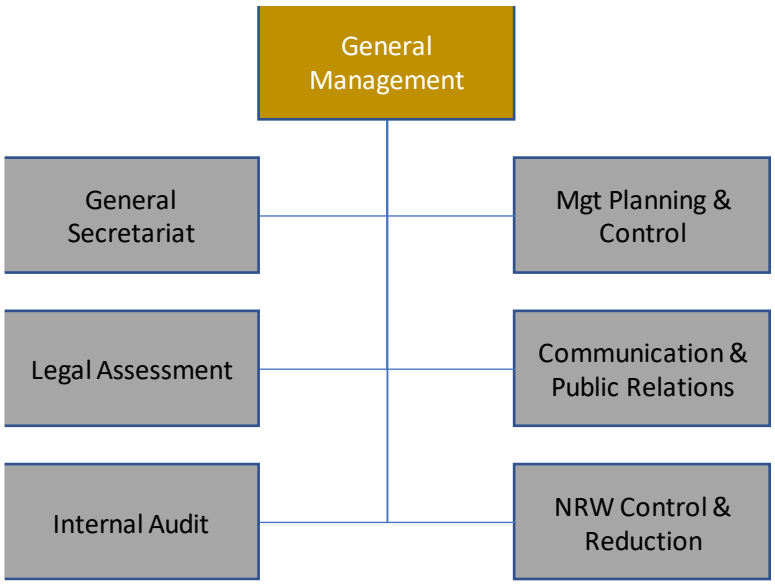


Figure 22
Starting figure for the review of the organizational chart – Cross-cutting Units



6.9 BIBLIOGRAPHY

AFD (2022). Initial Diagnostic of the Water Establishments – Data collection and diagnosis report – NLWE, Consultants Hydroconseil-Hydrophil-VA, July 2022. 178 p.

DAI / Águas de Portugal (2022). *Water Sanitation and Conservation Project – Lebanon. Rapid Assessment Report – North Lebanon WE.* Final report August 2022. 74 p.

Gharios G. & Farajalla N. (2019). *Investment Plans in the Water Management Structure of a Post-War Country: The Case of Lebanon Challenges.* Policy brief commissioned by the IFI (Issam Fares Institute for Public Policy and International Affairs) and Oxfam for the 2nd Lebanon Water Forum (2019). 8 p.

Gharios G., Farajalla N. & el Hadj R. (2022). *Challenges of post-war policy reforms in Lebanon's water sector – Lessons learned*. 14 p.

GIZ (2011). *Towards a new water and wastewater tariff strategy in Lebanon – Key components and options for new tariffs.* May 2011. 59 p.

MoEW (2020). *National Water Sector Update – 2020. Volume I – Executive Summary*. 12 p.

MoEW (2020). *National Water Sector Update – 2020. Volume II – Water Sector Governance*. 190 p.

NLWE (2021). Needs and Forecasts 2021-2024. Presentation at the seminar "Water Sector 2021… Sustain and grow! Ensure water services sustainability & continuity", Beirut, 02/06/2021.

USAid (2021). *Lebanon Water Project Final Report*. October 2021. 105 p.