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United Nations Development Programme

PROJECT DOCUMENT

Lebanon

Project Title: Demonstrating digital monitoring and management tools to enhance energy efficiency and reduce emission of green-house gases in the space cooling and cold chain sector

Project Number: 01002405

Implementing Partner: UNDP

Start Date: 01 May 2024 **End Date:** 09 April 2026 **PAC Meeting date:** N/A

Brief Description

Outputs 1 and 2: Cooling provided by air conditioning and refrigeration systems is essential for sustainable development. However, cooling also generates a serious carbon footprint, directly through the emissions of greenhouse gas refrigerants and indirectly due to the consumption of electricity generated using fossil fuels. Cooling is currently estimated to consume almost 20 percent of the world's electricity consumption in buildings. Energy demand for space cooling is expected to triple by 2050 fueled by rising temperatures and economic prosperity. If cooling efficiency is not improved significantly, an increase in greenhouse gas emissions from energy consumption and refrigerants will occur and warm the planet.

Digital tools and Internet of Things (IoT) provide valuable insights, automation, and control capabilities that can significantly enhance the energy efficiency of cooling systems, reducing emission of green-house gases, and identifying energy saving opportunities. By implementing smart cooling strategies and smart cold chain infrastructure, a city can reduce the urban heat island effect, minimize the amount of electricity consumed, which in turn reduces the use of fossil fuels and pressure on the power grid in the peak time.

Despite refrigeration and air conditioning accounting for a significant share of global energy consumption, the application of digitalization to these areas has so far received less attention than for other household appliances and mobility devices. Therefore, it is important to conduct demonstration projects to accumulate experiences for replication in more countries.

This project will research and identify digital tools which can be used to monitor the use of energy. Based on this information, it will pilot the use of such digital tools for the monitoring and development of strategies to minimize energy use.

Contributing Outcome (UNSDCF,CPD):

UNSDCF outcome Strengthened stabilization and green recovery to reduce vulnerabilities and environmental risks (SDG indicator: 12.1.1. Number of countries developing, adopting or implementing policy instruments aimed at supporting the shift to sustainable consumption and production)

Strategic plan output: E.1 People and institutions equipped with strengthened digital capabilities and opportunities to contribute to and benefit from inclusive digital societies.

CPD Outcome 3: Strengthened stabilization and green recovery to reduce vulnerabilities and environmental risks, including through enhanced competitiveness and business environment of sustainability-oriented MSMEs and high potential green productive sector values chains. CPD 3.1 (IRRF output 4.1) Natural resources protected and managed to enhance sustainable productivity and livelihoods.

CPD output indicator: Indicator 3.1.4. Yearly consumption of ozone depleting substances.

Indicative Output(s) with gender marker:

Output 1: GEN2; Output 2: GEN3

Total resources required:	USD 414,000.00	
Total resources allocated:		
	Funding Windows	USD 198,000.00
	Government:	-
	In-Kind:	-
Unfunded:	USD 216,000	

Agreed by (signatures):

UNDP

Mr. Mohammed Salih
Resident Representative a.i.

20-May-2024

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Date:

I. DEVELOPMENT CHALLENGE

Cooling is currently estimated to consume almost 20 percent of the world's electricity consumption in buildings. Energy demand for space cooling is expected to triple by 2050 fueled by rising temperatures and economic prosperity. If cooling efficiency is not improved significantly, an increase in greenhouse gas emissions from energy consumption and refrigerants will occur and warm the planet. Also, there is a gender gap in the energy sector. Despite making up 39% of the global labor force, women only account for 16% of the traditional energy sector.

Due to climate change, Lebanon is facing more frequent extreme weather events, causing an increase in cooling demand. An estimate from the Climate Impact Lab (2019) indicates that in Lebanon, the number of days with over 35 °C will increase dramatically from 6 days in 2020 to 36 in 2050[1]. The refrigeration and air conditioning (RAC) sector consumes 6,000 GWh (2018) of electricity yearly in Lebanon, accounting for 26% of Lebanon's total electricity demand. This will increase to 8,000 GWh by 2030, if no energy saving measures are taken[2].

Lebanon is also grappling with an acute energy crisis that has profoundly impacted its population across various segments. This dire situation disproportionately affects different segments of society, particularly vulnerable groups such as women, who face increased challenges in maintaining households, ensuring family well-being, and accessing essential services like healthcare and education. Moreover, inadequate infrastructure compounds these challenges, further straining the country's ability to meet the energy needs of its people.[3]

In response to this crisis, Lebanon has shown commitment to reduce its power-demand through energy-efficiency measures by 10%, conditional to the provision of international support[4]. The government also announced a renewable target of 30% of electricity consumed by 2030[5]. However, substantial investments, regulatory reforms, and capacity building are crucial to realizing these ambitious energy efficiency and renewable energy goals and alleviating the multifaceted challenges posed by the ongoing energy crisis.

Lebanon does not have a Minimum Energy Performance System (MEPS) and labelling system in place. Appliances in use have a low energy performance in comparison with other countries. End-users do not receive clear guidance on energy-efficient appliances. Importers, sellers and manufacturers have

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[1] United Nations Development Programme (2021). Guidance for Integrating Efficient Cooling in National Policies in Lebanon (2021). p27. Retrieved from https://www.undp.org/sites/g/files/zskgke326/files/migration/lb/NCPL.pdf

2 ibid. p34

3 https://reliefweb.int/report/lebanon/lack-bread-power-and-fuel-lebanon-under-crisis-they-need-organizations-pcpm

[4] Lebanon's Nationally Determined Contribution, Updated 2020 Version. Retrieved from https://unfccc.int/sites/default/files/NDC/2022-06/Lebanon%27s%202020%20Nationally%20Determined%20Contribution%20Update.pdf

[5] IRENA (2020), Renewable Energy Outlook: Lebanon International Renewable Energy Agency, Abu Dhabi. Retrieved from: https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Jun/IRENA_Outlook_Lebanon_2020.pdf

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little incentive to place more energy-efficient appliances on the market, as uninformed end-users tend to purchase the appliances with the lowest up-front costs.[6]

Digital technologies can play a significant role in closing the gap. Lebanon is making strides in digital transformation through initiatives like the Beirut Digital District and government-led projects. However, the recent economic crisis, coupled with infrastructural woes such as inconsistent electricity and internet services, has hindered widespread technological adoption in Lebanon. There is also a digital divide between women and men in Lebanon. According to a report by the Lebanese Ministry of Telecommunications, only 28% of women in Lebanon have access to the internet, compared to 42% of men.[7] Tested digital solutions are also lacking in the cooling sector in Lebanon. End users do not often understand what and how digital technologies can be used to enhance energy efficiency.

II. STRATEGY

As described in the previous section, Lebanon faces severe energy challenges characterized by inefficient energy consumption and substantial electricity costs. The cooling systems, particularly air conditioning and cold chain infrastructure, contribute significantly to these issues. The country's geographical location and climate necessitate extensive use of cooling technologies, making it an ideal testbed for piloting innovative digital tools and IoT solutions aimed at reducing emissions and energy consumption in this sector. Additionally, the country struggles with gender disparities in technical fields, with limited female representation in Refrigeration, Air Conditioning, and Cooling (RAC) sectors.

Digital technology is demonstrating its potential in transforming the energy systems. As reported by IEA, smart energy management using digital technologies can 1) help ensure that energy is consumed when and where it is needed; 2)enable demand response to reduce peak loads; 3)predict, measure and monitor in real time the energy performance of appliances. Digital technologies and Internet of Things (IoT) allow consumers and technicians to identify where and when maintenance is needed, when investments are not performing as expected or where energy savings can be achieved.

Before adopting a digital technology, it's important to have evidence showing its performance and cost effectiveness in a particular setting. Testing the technology in a new service (local piloting) will be able to generate the necessary data and information to inform decision making:

- potential risks or technical and implementation issues associated with the technology can be identified and analysed;
- technology users will be able to better understand how the technology affects current operational workflows, and whether this creates risks or issues that need to be managed;
- knowledge will be gained on how the technology can be used most effectively and how processes can be adjusted to get the best value from it.

The Project aims to reduce emission of the green-house gases, reduce energy consumption and associated electricity costs, and improve overall maintenance of the cooling system proactively through developing and piloting digital tools and IoT for monitoring and managing air conditioning and cold chain system. The project will also empower female RAC technicians by providing training on the piloted digital solutions.

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6 United Nations Development Programme (2021). Guidance for Integrating Efficient Cooling in National Policies in Lebanon (2021). p24. Retrieved from https://www.undp.org/sites/g/files/zskgke326/files/migration/lb/NCPL.pdf.

7 https://isp.page/news/internet-access-and-gender-equality-in-lebanon-closing-the-digital-gap/#gsc.tab=0

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This project is in line with UNDP Digital Strategy 2022-2025, which puts forth a vision whereby digital is an **empowering force for people and planet**. By experimenting with new approaches and tools in the cooling sector, this project will help to support Lebanon in its digital transformation journey and ensure an equal, diversive, gender inclusive participation of all in this digital environment.

Theory of Change

If RAC digital tools and IoT are piloted in the country, **then** it will enable the businesses to learn from the tested technologies and deploy cost-effective, secure, accurate and efficient digital solutions and encouraging experience sharing with others.

If digital technology and IoT are employed in energy-intensive building air conditioning systems, and there is an integration with Building Management System (BMS), **then** this action will serve as a catalyst for efficient energy management and the provision of enhanced comfort solutions.

If digital technology and IoT is employed in commercial refrigeration retail installation (supermarket, etc.), **and** operates at both the product and equipment levels, **then** it facilitates crucial functions, such as ensuring safety compliance through temperature monitoring, maintaining equipment reliability to prevent food waste, and enabling traceability for insurance purposes.

If the application of digitalization to some RAC applications has received less attention, **and** it is essential to accumulate valuable experiences that can be replicated, fostering advancements in energy-efficient practices, **then** it becomes beneficial to initiate demonstration projects.

The pilot (demonstration) installation will show that **if** digital sensors and monitoring systems are employed, **and** real-time data on energy consumption, pressures, temperatures, cooling system performance data are collected, **then** it facilitates the identification of refrigerant leakages, detection of inefficiencies, optimization of system settings, and early recognition of potential issues for proactive scheduling of maintenance, and increase of energy efficiency.

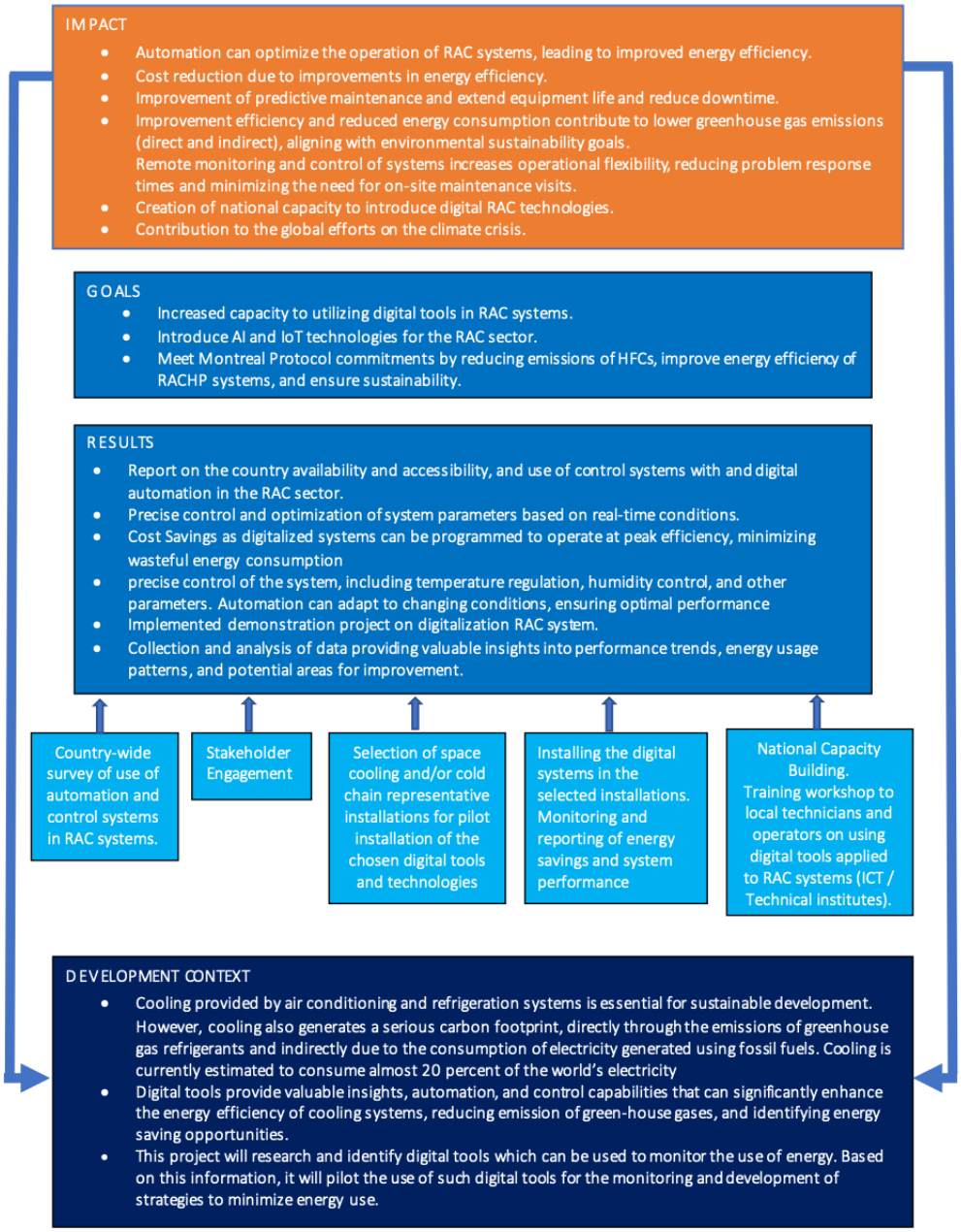
If capacity building initiatives are implemented in a gender responsive manner **and** both female and male professionals in the RAC sector gain a comprehensive understanding of the potential benefits and applications of AI and IoT in RAC, and the necessary skills and knowledge in AI and IoT technologies, **then** gender mainstreaming will be enhanced in the cooling sector **and** both female and male professionals can actively contribute to the successful integration and implementation of these advanced technologies, contributing to efficiency improvements, energy savings, and enhanced system performance.

The intervention aims to create a cascading effect: by empowering female technicians and implementing digital solutions in the RAC sector, the project triggers a transformative change in behavior, practices, and policies. Ultimately, this results in reduced emissions, energy efficiency, economic empowerment, and improved quality of life for people in Lebanon.

Given that Lebanon already phases considerable challenges in the energy sector with national supply unable to meet the overall demand and national energy cuts impede the proper operation of private and public facilities, **if** energy efficiency measures, using digital tools, can be introduced to reduce energy demand, **then** the operation of such facilities will improve.

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THEORY OF CHANGE



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III. RESULTS AND PARTNERSHIPS

Expected Results

The overall objective of the Project is to reduce emission of the green-house gases, reduce energy consumption and associated electricity costs, and improve overall maintenance of the cooling system proactively through developing and piloting digital tools and IoT for monitoring and managing air conditioning and cold chain system.

Outcome: Innovation capabilities built, and approaches adopted to expand policy options through the uptake of cost-effective digital solutions and IoT for monitoring efficiency and performance to improve energy performance of the air conditioning and cold chain systems and enhance national capacity on digital technology.

Output 1. Increased benefits for people and institutions through the strengthening of digital capabilities and opportunities from increased use of digital tools and IoT in cooling systems

Activities:

- In close collaboration with the national government and private stakeholders, the project will carry out a country-wide survey of automation and control systems of retail cold-chain equipment to understand how and on what level digital solutions are adopted to manage energy performance and support maintenance. The beneficiary of the project will be selected based on criteria established by the Ministry of Environment.
- The digital solutions (including both hardware and software) will be developed, installed and tested. Assessment of the pilot site or sites, including the energy use, efficiency performance and GHG emission of the cooling system will be conducted to support the development and test.
- Evaluation of the piloted digital solution will be carried out to understand its stability, performance, cost effectiveness, efficiency etc. A report will be developed to analyse the benefits and issues and provide suggestions on how to optimize the digital system to make it more suitable for upscaling in a cost-effective manner.
- Government agencies and businesses will be engaged, so that their understanding of the benefit of RAC digitalization is enhanced.
- Communication material will be developed to enhance end-users' awareness on the benefits of digital systems in reducing energy consumption, thus creating a favorable condition to enhance market penetration of digital technologies in the cooling sector.

Output 2. Training on digital technologies and tools provided to RAC professionals, especially women.

Activities:

- The project will conduct hands-on workshops and training sessions for both women and men, focusing on practical application of the digital tools and IoT technologies piloted. The training will particularly help to boost confidence and competence among female technicians or female management staff.
- Technical assistance and training for female technicians/students/manufacturing industries management staff will be offered to those who demonstrate a strong interest in advancing their skills in digital technologies. These training will include certification programs or courses on digital technologies and energy efficiency.

Resources Required to Achieve the Expected Results

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The project requires various resources including funding, expertise and partnerships. These mainly include:

- Technical expertise: internal and external expertise will be solicited to develop and test digital solutions for better energy efficiency of a cooling system.
- ICT equipment: digital and IoT equipment and smart applications will be purchased for piloting the developed solutions.
- Capacity building: trainings and knowledge sharing activities will be organized to capacitate both female and male technicians on applying digital technologies for maintenance and energy efficiency purposes.
- Consultation and collaboration: stakeholders will be consulted in developing and testing the technology; collaboration between government and businesses and among businesses themselves will be strengthened to optimize and upscale the piloted digital technologies.

The FW investment will primarily be used on contractual services, purchase of ICT equipment, training of technicians, staffing and personnel costs.

Please also list any additional co-funding sources – existing or expected – in the table below that will complement this FWs allocation.

Co-Funding source(s)	Amount	Existing or expected?	Additional information (duration of co-funding, specific thematic area, etc.)
Multilateral Fund for the Implementation of the Montreal Protocol (MLF)	USD 216,000	Expected	24 months, using MLF energy efficiency window with the focus on the servicing sector

Partnerships

The project will seek partnership with other UN entities through the Resident Coordinator system and leveraging the policy, practices and diverse expertise of UN development agencies towards a fair and inclusive digital transformation. The project with share information and knowledge gained with other UN agencies to ensure effective coordination on supporting national efforts in enhancing energy efficiency and reducing GHGs emission. The project will also coordinate with UNEP through its Regional Office in West Asai (ROWA) is in Lebanon, particularly through the Compliance Assistance Programme team (CAP).

The project will leverage the close partnership between UNDP and the Ministry of Environment of Lebanon in planning and implementing the activities. The project will also consult both public and private stakeholders to design and select the technologies and encourage cooperation between government and enterprises in meeting the country's energy and emission targets. NGOs and women organizations that work on environment and/or energy will be engaged/consulted.

Communications and Advocacy

Key outcomes of the project will be communicated through news and articles posted on UNDP's website and social media account to advocate for the contribution made by Funding Windows partners (donors). A final report of the project will be developed to document and share knowledge, in order to facilitate technology adoption after project completion and acknowledge the contribution and support from Funding Windows partners. Communication material on the benefits of digital

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systems will be developed to enhance awareness of end-users and success stories on women participation in this project will be featured.

Risks and Assumptions

The risks that might threaten the achievement of project results have been identified and relevant measures to mitigate the risks are envisioned as follows:

Risk Factor	**Risk Level (H=High, M=Medium, L=Low)**	**Mitigating Measures**
Changes in government policies or instability in the political landscape could impact project support, or regulations affecting technology adoption.	L	The relationship between the UNDP and the government stakeholders is strategically oriented on institutional level and is not affected by political ramifications. The project will also engage with multiple stakeholders to ensure project support remains resilient to political changes. Project team will stay adaptable to evolving policies and regulations.
Incompatibility between existing infrastructure and new digital technologies could hinder seamless integration and functionality	L	The project will prioritize thorough compatibility testing before implementation. Vendors will be engaged to conduct pilot tests to ensure seamless integration with existing infrastructure.
Delays or shortages in obtaining necessary equipment, components, or software could impede project timelines and deliverables	M	Diversify suppliers where possible and maintain open communication channels to anticipate and address potential disruptions.
The local businesses lack interest or commitment in piloting digital solutions	M	The pilot site will be selected in close consultation with the government and stakeholders. The digital technologies developed will be cost-effective and make sure the intended benefits can be achieved. Capacity-building activities will be done to ensure the piloted technology can be effectively adopted.
Poor electricity and telecom service sector in the country could jeopardize the operation of digital tools and data collection	H	The pilot project will prioritize energy-efficient tools and IoT devices that require minimal power to function effectively. Local technicians will be trained in the maintenance and repair of digital tools to promptly address technical issues that may arise due to inconsistent electricity or telecom services. The project will also track the performance of digital tools, including their reliability during electricity and telecom service disruptions and adapt strategies, refine tools, or adjust project activities in response to identified challenges.
Political, economic and security situation in Lebanon is very unstable., This may hinder the implementation of some project activities such as procurement of	H	UNDP will coordinate closely with the UN Department of Safety and Security (UNDSS) on all security issues and will liaise with government to overcome, to the extent possible, any instability.

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services and equipment, carrying our training sessions etc.		
Low participation of women due to limited engagement in the sector and socio-cultural norms	H	UNDP will engage from the initiation stage of the project with all women technicians and engineers working in the sector to get them on board.

Stakeholder and Beneficiary Engagement

Users of cooling systems in Lebanon (such as supermarkets, shopping malls, cold-chain logistics companies etc.) will be the key beneficiaries of this project. The government of Lebanon is a key stakeholder and beneficiary of the project too, as the project will contribute to Lebanon's climate and energy targets through enhancing energy efficiency in the RAC sector.

The project will coordinate closely between government and non-state actors. Stakeholders will be consulted on what roles and responsibilities they will play in the project and how they would like to support the deployment of digital solutions in the cooling sector. The project is expected to be implemented with minimum disruption to business continuity and livelihood of different industry stakeholders.

South-South and Triangular Cooperation (SSC/TrC)

South-South cooperation and knowledge sharing will be promoted among Lebanon, Sri Lanka and Trinidad and Tobago, where similarly digital solutions will be piloted and tested for the cooling sector. The three projects will share experience gained and lessons learnt among each other through learning sessions and webinars, which will enhance the project's effectiveness and sustainability. This project will also share the key results achieved with other developing countries through website, workshops and social media to facilitate mutual learning in the Global South.

Sustainability and Scaling Up

Digital solutions developed and tested by the project will be open-source technologies that can be used free of charge by cooling system users in Lebanon. Capacities of RAC technicians will be enhanced to support the wide adoption of digital technologies and ensure sustainability of the project. The result of this project will provide solid evidence for potential projects and help UNDP to mobilise additional resources from MLF and other funding mechanisms and donors in promoting digital solutions on energy efficiency.

IV. PROJECT MANAGEMENT

The project will be operationalized in Beirut located at the Ministry of Environment strategically chosen for to ensure effective on-the-ground coordination and support. The operations support will be organized through a combination of dedicated and shared resources, such as dedicated staff roles, shared services, etc. i.e. the implementation will be carried out by the existing team of the ozone-related projects who will be responsible for the day-to-day management of the project activities.

The project is committed to fostering collaboration with related projects to maximize impact and avoid duplication of efforts. Regular coordination meetings with UNDP and GID projects and joint initiatives will be organized to ensure synergy. Audit arrangements will be established in accordance with measures or protocols with UNDP and Country Office Support Services. The project will actively engage with UNDP Country Office Support Services to leverage our expertise and support provided. Regular updates and collaboration will be maintained to align with broader development goal

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V. MANAGEMENT AND GOVERNANCE ARRANGEMENTS, AND ACCOUNTABILITY

The project will be managed in accordance with standard UNDP procedures as Direct Implementation (DIM) modality~~,~~ in close collaboration with the Government of Lebanon through its UNDP managed Ozone Project team established at the Ministry of Environment. The UNDP Ozone Project team is partially supported through the Institutional Strengthening Project with financial assistance from the Multilateral Fund and implemented by UNDP.

UNDP will be working closely with the MoE; the UNDP Country Office will be responsible for overseeing project budgets and expenditures, recruiting and contracting consultant services, procuring equipment, and project evaluation and reporting, result-based project monitoring, and organizing independent audits to ensure the proper use of FW funds. Financial transactions, auditing and reporting will be carried out in compliance with UNDP procedures for national execution.

The project management team will be comprised of existing project staff. The UNDP Ozone Project team will manage the technical implementation of the Project, under the overall supervision and direction of Green and Inclusive Development Programme. The Project Associate will provide programme operation and administrative support to the Project. UNDP staff who will be engaged in providing support services to the project, including in the areas of gender equality, finance, procurement, travel and logistics, advocacy and other related support, will be charged for their time directly attributable to the implementation of the Project.

The UNDP country office will provide the following support services, covered by Direct Project Cost (DPC), for the activities of the programme/project:

i. Payments, disbursements and other financial transactions
ii. Recruitment of staff, project personnel, and consultants
iii. Procurement of services and equipment, including disposal
iv. Organization of training activities, conferences, and workshops, including fellowships
v. Travel including visa requests, ticketing, and travel arrangements
vi. Shipment, customs clearance, vehicle registration, and accreditation
vii. Security management service and Malicious Acts Insurance Policy
viii. Access to Quantum for project managers and other staff, Payroll management services and Medical Clearance Services for all staff

The UNDP country office will also provide the following general oversight and management services (GMS) at the rate of 7%, for the activities of the project which include the following:

i. Corporate executive management and resource mobilisation
ii. Corporate accounting, financial management, internal audit, legal support and human resources management
iii. Policy guidance and Bureau/Country Office management

The GMS fees are applied to the vertical funding windows as stated in the Authorisation Letter from BPPS.

The audit of DIM projects is made through the regular external (UN Board of Auditors) or internal audits (audits managed by UNDP's Office of Audit and Investigations).

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VI. MONITORING AND LEARNING

Monitoring

Activities funded by the Funding Windows resources will be subject to the same UNDP corporate reporting requirements in the relevant priority areas of the UNDP Annual Business Plan and UNDP's results oriented annual reporting (ROAR) targets.

The project will be monitored through the following monitoring plan:

Monitoring Activity	Purpose	Frequency	Expected Action
Track results progress	Progress data against the results indicators in the Log Frame will be collected and analyzed to access the progress of the project in achieving the agreed outputs, outcomes and overall goal.	Outputs monitored and recorded quarterly or in the frequency required for each indicator; outcomes and overall objective are monitored annually	Slower than expected progress will be addressed by project management.
Monitor and manage risk	Identify specific risks that may threaten achievement of intended results. Identify and monitor risk management actions using a risk log. This includes monitoring measures and plans that may have been required as per UNDP's Social and Environmental Standards. Audits will be conducted in accordance with UNDP's audit policy to manage financial risk.	Quarterly	Risks are identified by project management and actions are taken to manage risk. The risk log is actively maintained to keep track of identified risks and actions taken.
Learn	Knowledge, good practices and lessons will be captured regularly, as well as actively sourced from other projects and partners and integrated back into the project	At the end of the project	Relevant lessons are captured by the project team and used to inform management decisions.
Project Quality Assurance	The quality of the project will be assessed against UNDP's quality standards to identify project strengths and weaknesses and to inform management decision making to improve the project	Once per project lifetime	Areas of strength and weakness will be reviewed by project management and used to inform decisions to improve project performance.
Review and Make Course Corrections	Internal review of data and evidence from all monitoring actions to inform decision making.	Annually	Performance data, risks, lessons and quality will be discussed and used to make course corrections.

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Project Report	A progress report will be presented to the donor and key stakeholders, consisting of progress data showing the results achieved against pre-defined annual targets at the output level, the project quality rating summary, an updated risk log with mitigation measures, and any evaluation or review reports prepared over the period.	Once a year, and at the end of the project (end-of-phase report)	

Learning

***Annual reports for the FWs are collected from country offices in January for the previous calendar year. All country offices will need to respond to a set of questions (see Annex 1) to help the FWs aggregate results across all allocations and create narrative around the impact of our investments for our partners. Continuous monitoring throughout the year – including following up on completed activities to gather evidence and assess their lasting impact – will make the process of annual reporting smoother and more efficient. ***

To support learning and adaptation during the implementation period, the project will utilize several methodologies, resources, and tools. These include:

- Monitoring and Evaluation Framework: a robust M&E framework will be developed to track progress towards achieving the project objectives. The framework will include clear indicators, targets, data sources, and data collection methods, and will be regularly reviewed and updated to ensure relevance and effectiveness.
- Data Collection and Analysis Tools: various data collection tools will be utilized to collect both qualitative and quantitative data from project activities, including surveys, focus group discussions, interviews and case studies.
- Regular Project Review Meetings: regular project review meetings will be conducted with key stakeholders, including government partners, private sectors, industrial associations and other implementing partners. These meetings will provide a platform for stakeholders to provide feedback, share lessons learned, and discuss challenges faced during project implementation.
- Knowledge Management System: a knowledge management system will be established to ensure effective sharing and dissemination of project findings, lessons learned, and best practices. The system will include website, social media platforms, and other communication tools to ensure that project information is accessible to a wide range of stakeholders.

Overall, the above methodologies, resources, and tools will be utilized to support systematic monitoring and ensure that the project is responsive to emerging challenges and obstacles. Regular reviews, learning and adaptation workshops, and a knowledge management system will ensure that stakeholders are informed of the progress of the project and can contribute to its success.

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VII. RESULTS FRAMEWORK

Intended Outcome as stated in the UNSDCF/Country Programme Results and Resource Framework: Strengthened stabilization and green recovery to reduce vulnerabilities and environmental risks
Outcome indicators as stated in the Country Programme [or Regional] Results and Resources Framework, including baseline and targets: CPD Outcome 3: Strengthened stabilization and green recovery to reduce vulnerabilities and environmental risks, including through enhanced competitiveness and business environment of sustainability-oriented MSMEs and high potential green productive sector values chains. CPD output indicator: Indicator 3.1.4. Yearly consumption of ozone depleting substances.
Applicable Output(s) from the UNDP Strategic Plan: E.1 People and institutions equipped with strengthened digital capabilities and opportunities to contribute to and benefit from inclusive digital societies.
Project title and Quantum Project Number: Demonstrating digital monitoring and management tools to enhance energy efficiency and reduce emission of green-house gases in the space cooling and cold chain sector. Project Number: 01002405

EXPECTED OUTPUTS (Quantum structure)	OUTPUT INDICATORS	DATA SOURCE	BASELINE		TARGETS (by frequency of data collection)				DATA COLLECTION METHODS & RISKS
			Value	Year	Year 1 (June 2024)	Year 2 (2025)	Year 3 (09 April 2026)	FINAL	
Output 1: Increased benefits for people and institutions through the strengthening of digital capabilities and opportunities from increased use of digital tools and IoT in cooling systems	***Indicator 1**: Number of installations using digital tools* *Baseline: 0* *Target: 1*	UNDP/ MoE	0	2023	0	0	1	1	*Various data collection tools will be utilized to collect both qualitative and quantitative data from project activities, including surveys, focus group discussions, interviews and case studies.
	***Indicator 2:** Number of people who access the communication materials developed on the benefits of digital systems* *Baseline: 0* *Target: 100*	UNDP/ MoE	0	2023	0	50	50	100	
Output 2:	***Indicator 1:** Number of female and male*	UNDP/ MoE	0	2023	0	10	10	20	*Various data collection tools will be utilized to collect both qualitative and quantitative data from

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EXPECTED OUTPUTS (Quantum structure)	OUTPUT INDICATORS	DATA SOURCE	BASELINE		TARGETS (by frequency of data collection)				DATA COLLECTION METHODS & RISKS
			Value	Year	Year 1 (June 2024)	Year 2 (2025)	Year 3 (09 April 2026)	FINAL	
RAC professionals, especially women have improved skills and knowledge on digital technologies.	*professionals whose skill on digital technologies have increased through training.* *Baseline: 0* *Target: 20*								project activities, including surveys, focus group discussions, interviews and case studies.
	Indicator 2: *Number of female students who received certification on digital technologies or energy efficiency* *Baseline: 0* *Target: 6*	UNDP/ MoE	0	2023	0	0	6	6	

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VIII. WORK PLAN

EXPECTED OUTPUTS	PLANNED ACTIVITIES	Planned Budget by Year			RESPONSIBLE PARTY	PLANNED BUDGET		
		Y1 - 2024	Y2 - 2025	Y3- 2026		Funding Source	Budget Description	Amount
Output 1: Increased benefits for people and institutions through the strengthening of digital capabilities and opportunities from increased use of digital tools and IoT in cooling systems for better energy efficiency and decreased GHG emissions. Gender marker: 2	**Activity 1: Digital tools and Internet of Things (IoT) in cooling systems**				UNDP	Funding Window		
		15,000.00	75,000.00	59,300.00			72100-Contractual Services-Companies	149,300.00
	Action 1.1. Conduct Energy Audit and country-wide survey of digital systems and identify project beneficiary.		3,000.00				74200-Audio Visual&Print Prod Costs	3,000.00
	Action 1.2 Develop, install and test the digital solutions (including both hardware and software).		3,000.00				75700-Training, Workshops and Confer	3,000.00
	Action 1.3 Evaluate the piloted digital solution to understand its stability, performance, cost effectiveness, efficiency etc.	1,050.00	5,670.00	4,151.00			75100 - GMS 7%	10,871.00
	Action 1.4. Stakeholder Engagement.							
	Action 1.5. Communications/Advocacy							
SUBTOTAL	**SUBTOTAL ACTIVITY 1**	**16,050.00**	**86,670.00**	**63,451.00**				**166,171.00**
Output 2: RAC professionals, especially women have improved skills and knowledge on digital technologies. Gender marker: 3	**Activity 2: Training on digital technologies and tools**				UNDP	Funding Window		
			5,746.73				71400-Contractual Services - Individ	5,746.73
	Action 2.1 Conduct training on the digital tools , IoT technologies and energy efficiency practices for female and male RAC professionals.		5,000.00				71600-Travel	5,000.00
	Action 2.2 Provide training to female industry management professionals to join certification programmes on digital technologies or energy efficiency.		5,000.00	5,000.00			72100-Contractual Services-Companies	10,000.00
	Action 2.3 Monitoring/Learning		2,500.00	2,500.00			75700-Training, Workshops and Confer	5,000.00
			2,000.00	2,000.00			64300-Staff Mgmt Costs - IP Staff	4,000.00
			1,417.27	665.00			75100 - GMS 7%	2,082.27
SUBTOTAL	**SUBTOTAL ACTIVITY 2**	**-**	**21,664.00**	**10,165.00**				**31,829.00**
TOTAL	**TOTAL**	**16,050.00**	**108,334.00**	**73,616.00**				**198,000.00**

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IX. LEGAL CONTEXT

This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of Lebanon and UNDP, signed in 1986. All references in the SBAA to "Executing Agency" shall be deemed to refer to "Implementing Partner."

This project will be implemented by UNDP in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

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X. RISK MANAGEMENT

1. UNDP as the Implementing Partner will comply with the policies, procedures and practices of the United Nations Security Management System (UNSMS.)

2. UNDP as the Implementing Partner will undertake all reasonable efforts to ensure that none of the [project funds][8] are used to provide support to individuals or entities associated with terrorism , that the recipients of any amounts provided by UNDP hereunder do not appear on the United Nations Security Council Consolidated Sanctions List, and that no UNDP funds received pursuant to the Project Document are used for money laundering activities. The United Nations Security Council Consolidated Sanctions List can be accessed via https://www.un.org/securitycouncil/content/un-sc-consolidated-list. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

3. Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (http://www.undp.org/ses) and related Accountability Mechanism (http://www.undp.org/secu-srm).

4. UNDP as the Implementing Partner will: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.

5. In the implementation of the activities under this Project Document, UNDP as the Implementing Partner will handle any sexual exploitation and abuse ("SEA") and sexual harassment ("SH") allegations in accordance with its regulations, rules, policies and procedures.

6. All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.

7. UNDP as the Implementing Partner will ensure that the following obligations are binding on each responsible party, subcontractor, and sub-recipient:

a. Consistent with the Article III of the SBAA *[or the Supplemental Provisions to the Project Document]*, the responsibility for the safety and security of each responsible party, subcontractor and sub-recipient and its personnel and property, and of UNDP's property in such responsible party's, subcontractor's and sub-recipient's custody, rests with such responsible party, subcontractor and sub-recipient. To this end, each responsible party, subcontractor and sub-recipient shall:
   i. put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
   ii. assume all risks and liabilities related to such responsible party's, subcontractor's and sub-recipient's security, and the full implementation of the security plan.

b. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the responsible party's, subcontractor's and sub-recipient's obligations under this Project Document.

c. Each responsible party, subcontractor and sub-recipient (each a "sub-party" and together "sub-parties") acknowledges and agrees that UNDP will not tolerate sexual harassment and sexual exploitation and abuse of anyone by the sub-parties, and other entities involved in Project implementation, either as contractors or subcontractors and their personnel, and any individuals performing services for them under the Project Document.
   (a) In the implementation of the activities under this Project Document, each sub-party shall comply with the standards of conduct set forth in the Secretary General's Bulletin ST/SGB/2003/13 of 9 October 2003, concerning "Special measures for protection from sexual exploitation and sexual abuse" ("SEA").
   (b) Moreover, and without limitation to the application of other regulations, rules, policies and procedures bearing upon the performance of the activities under this Project Document, in the implementation of activities, each sub-party, shall not engage in any form of sexual harassment ("SH"). SH is defined as any unwelcome conduct of a sexual nature that might reasonably be expected or be perceived to cause offense or humiliation, when such conduct interferes with work, is made a condition of employment or creates an intimidating, hostile or offensive work environment. SH may occur in the workplace or in connection with work. While typically involving a pattern of conduct, SH may take the form of a single incident. In assessing the reasonableness of expectations or perceptions, the perspective of the person who is the target of the conduct shall be considered.

[8] To be used where UNDP is the Implementing Partner

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d. In the performance of the activities under this Project Document, each sub-party shall (with respect to its own activities), and shall require from its sub-parties (with respect to their activities) that they, have minimum standards and procedures in place, or a plan to develop and/or improve such standards and procedures in order to be able to take effective preventive and investigative action. These should include: policies on sexual harassment and sexual exploitation and abuse; policies on whistleblowing/protection against retaliation; and complaints, disciplinary and investigative mechanisms. In line with this, sub-parties will and will require that their respective sub-parties will take all appropriate measures to:
(i) Prevent its employees, agents or any other persons engaged to perform any services under this Project Document, from engaging in SH or SEA;
(ii) Offer employees and associated personnel training on prevention and response to SH and SEA, where sub-parties have not put in place its own training regarding the prevention of SH and SEA, sub-parties may use the training material available at UNDP;
(iii) Report and monitor allegations of SH and SEA of which any of the sub-parties have been informed or have otherwise become aware, and status thereof;
(iv) Refer victims/survivors of SH and SEA to safe and confidential victim assistance; and
(v) Promptly and confidentially record and investigate any allegations credible enough to warrant an investigation of SH or SEA. Each sub-party shall advise UNDP of any such allegations received and investigations being conducted by itself or any of its sub-parties with respect to their activities under the Project Document, and shall keep UNDP informed during the investigation by it or any of such sub-parties, to the extent that such notification (i) does not jeopardize the conduct of the investigation, including but not limited to the safety or security of persons, and/or (ii) is not in contravention of any laws applicable to it. Following the investigation, the relevant sub-party shall advise UNDP of any actions taken by it or any of the other entities further to the investigation.

e. Each sub-party shall establish that it has complied with the foregoing, to the satisfaction of UNDP, when requested by UNDP or any party acting on its behalf to provide such confirmation. Failure of the relevant sub-party to comply of the foregoing, as determined by UNDP, shall be considered grounds for suspension or termination of the Project.

f. Each responsible party, subcontractor and sub-recipient will ensure that any project activities undertaken by them will be implemented in a manner consistent with the UNDP Social and Environmental Standards and shall ensure that any incidents or issues of non-compliance shall be reported to UNDP in accordance with UNDP Social and Environmental Standards.

g. Each responsible party, subcontractor and sub-recipient will take appropriate steps to prevent misuse of funds, fraud, corruption or other financial irregularities, by its officials, consultants, subcontractors and sub-recipients in implementing the project or programme or using the UNDP funds. It will ensure that its financial management, anti-corruption, anti-fraud and anti money laundering and countering the financing of terrorism policies are in place and enforced for all funding received from or through UNDP.

h. The requirements of the following documents, then in force at the time of signature of the Project Document, apply to each responsible party, subcontractor and sub-recipient: (a) UNDP Policy on Fraud and other Corrupt Practices (b) UNDP Anti-Money Laundering and Countering the Financing of Terrorism Policy; and (c) UNDP Office of Audit and Investigations Investigation Guidelines. Each responsible party, subcontractor and sub-recipient agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at www.undp.org.

i. In the event that an investigation is required, UNDP will conduct investigations relating to any aspect of UNDP programmes and projects. Each responsible party, subcontractor and sub-recipient will provide its full cooperation, including making available personnel, relevant documentation, and granting access to its (and its consultants', subcontractors' and sub-recipients') premises, for such purposes at reasonable times and on reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with it to find a solution.

j. Each responsible party, subcontractor and sub-recipient will promptly inform UNDP as the Implementing Partner in case of any incidence of inappropriate use of funds, or credible allegation of fraud, corruption other financial irregularities with due confidentiality.
Where it becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, each responsible party, subcontractor and sub-recipient will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). It will provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.

k. UNDP will be entitled to a refund from the responsible party, subcontractor or sub-recipient of any funds provided that have been used inappropriately, including through fraud corruption or other financial irregularities, or otherwise paid other than in accordance with the terms and conditions of the Project Document. Such amount may be deducted by UNDP from any payment due to the responsible party, subcontractor or sub-recipient under this or any other agreement.

Where such funds have not been refunded to UNDP, the responsible party, subcontractor or sub-recipient agrees that donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities under this Project Document, may seek recourse to such responsible party, subcontractor or sub-recipient for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud, corruption or

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other financial irregularities, or otherwise paid other than in accordance with the terms and conditions of the Project Document.

Note: The term "Project Document" as used in this clause shall be deemed to include any relevant subsidiary agreement further to the Project Document, including those with responsible parties, subcontractors and sub-recipients.

l. Each contract issued by the responsible party, subcontractor or sub-recipient in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with the selection process or in contract execution, and that the recipient of funds from it shall cooperate with any and all investigations and post-payment audits.
m. Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project or programme, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.
n. Each responsible party, subcontractor and sub-recipient shall ensure that all of its obligations set forth under this section entitled "Risk Management" are passed on to its subcontractors and sub-recipients and that all the clauses under this section entitled "Risk Management Standard Clauses" are adequately reflected, *mutatis mutandis*, in all its sub-contracts or sub-agreements entered into further to this Project Document.

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XI. ANNEXES

1. **Project Quality Assurance Report:** Completed in Quantum/Unity+; Ref: ASM-07867
2. **Social and Environmental Screening:** Completed in quantum/Unity+; Ref: ASM-07865
3. **Risk Analysis**
4. **Capacity Assessment:** Not applicable as all activities are directly implemented by UNDP
5. **On-Granting Provisions Applicable to the Implementing Partner.** Not Applicable

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ANNEX 3: Risk Analysis

#	Event	Caused by	Impact(s)	Risk Category and Sub-category *(including Risk Appetite)*	Impact, Likelihood & Risk Level *(see Annex 3 Risk Matrix)*	Risk Valid From/To	Risk Owner *(individual accountable for managing the risk)*	Risk Treatment and Treatment Owner
1	Adverse global environmental concerns through potential exacerbation of climate change	Sectors targeted by the Project may migrate to use of high/GWP cooling technologies as result of Country's Compliance Targets and project interventions.	Country's sector carbon intensity/footprint and negative impacts towards compliance to the Kigali Amendment to the Montreal Protocol	**1. SOCIAL AND ENVIRONMENTAL (1.5. Climate change and disaster risks) - UNDP Risk Appetite: CAUTIOUS**	Likelihood: **3 - Moderately likely** Impact: **4 - Extensive** Risk level: **MODERATE (equates to a risk appetite of EXPLORATORY)**	From: 01-May-24 To: 31-Dec-30	Project Manager	Following the MLF Guidelines, the project will strongly promote the adoption of alternatives that are lower than the baseline HCFCs being replaced. The Risk Management and mitigation actions will include: • Awareness Campaign component to sensitive and support the stakeholders about impacts of technology choices and support them to choose low-GWP alternatives.
2	Reduce discriminations against women	Low participation of women due to limited engagement in the sector caused by socio-cultural norms.	Women may not benefit from capacity building activities due to existing discriminations. MLF and UNDP Gender Policies and Guidelines may not be fulfilled.	**1. SOCIAL AND ENVIRONMENTAL (1.2. Gender equality and women's empowerment) - UNDP Risk Appetite: CAUTIOUS**	Likelihood: **3 - Moderately likely** Impact: **3 - Intermediate** Risk level: **LOW (equates to a risk appetite of CAUTIOUS)**	From: 01-June-24 To: 31-Dec-30	Project Manager	The project has been designed taking into consideration UNDP Gender Policy and MLF's Operational Gender Mainstreaming Guidelines. The project was screened against Gender Checklist provided by the MLF and industry level surveys took into consideration gender aspects in collecting baseline data. The Risk Management includes: • The development of a Gender Action Plan.

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3	Workers at partner facilities exposed to adverse working conditions in contravention with national labour standards or principles and standards of ILO fundamental conventions	Employees at these facilities may be exposed to worker discrimination, be denied freedom of association and collective bargaining and occupational health and safety risks. While less likely, use of child and forced labour may also exist at the facilities.	Employees and communities are avoided to benefit from capacity building activities due to existing discriminations.	**1. SOCIAL AND ENVIRONMENTAL (1.10. Labour and working conditions) - UNDP Risk Appetite: CAUTIOUS** **1. SOCIAL AND ENVIRONMENTAL (1.3. Grievances (Accountability to stakeholders)) - UNDP Risk Appetite: CAUTIOUS**	Likelihood: **2 - Low likelihood** Impact: **4 - Extensive** Risk level: **MODERATE (equates to a risk appetite of EXPLORATORY)**	From: 01-May-24 To: 31-Dec-30	Project Manager	The Risk Management includes: • Continuous monitoring of beneficiary companies in relation to their adherence of Labour Laws throughout project lifecycle. • Application of Best Practices and the development of Occupational Health and Safety Plan, the later, if needed at company level to improve their practices. • For Project suppliers, UNDP will only engage with supplier that are not listed on the Consolidated United Nations Security Council Sanctions List, the UNDP vendor sanctions list or the UN Global Marketplace list.
4	There is a risk of political instability and security situation in the country	Changes in government policies or instability in the political landscape could impact project support, or regulations affecting technology adoption.	The inability of the government to operate affects the implementation of the project activities	**8. SAFETY AND SECURITY (8.2. Political instability) - UNDP Risk Appetite: CAUTIOUS**	Likelihood: **3 - Moderately likely** Impact: **3 - Intermediate** Risk level: **SUBSTANTIAL (equates to a risk appetite of OPEN)**	From: 01-May-24 To: 31-Dec-2025	Project Manager	The relationship between the UNDP and the government stakeholders is strategically oriented on institutional level and is not affected by political ramifications. The project will also engage with multiple stakeholders to ensure project support remains resilient to political changes. Project team will stay adaptable to evolving policies and regulations.

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5	The rapid of technological advancement means that new digital technologies often outpace existing infrastructure	Incompatibility between existing infrastructure and new digital technologies could hinder seamless integration and functionality	lead to disruptions in workflows, increased costs due to customization or upgrades, and reduced system functionality. This impedes seamless integration, hampers productivity, and poses risks to data security and regulatory compliance.	**3. OPERATIONAL (3.8. Capacities of the partners) - UNDP Risk Appetite: EXPLORATORY TO OPEN**	Likelihood: **3 - Moderately likely** Impact: **4 - Extensive** Risk level: **SUBSTANTIAL (equates to a risk appetite of OPEN)**	From: 01-May-24 To: 31-Dec-2025	Project Manager	The project will prioritize thorough compatibility testing before implementation. Vendors will be engaged to conduct pilot tests to ensure seamless integration with existing infrastructure.
6	Global and national economic fluctuations and regional conflicts	Delays or shortages in obtaining necessary equipment, components, or software could impede project timelines and deliverables	Delays or shortages in acquiring essential equipment, components, or software can significantly disrupt project timelines and deliverables. These setbacks can lead to increased costs, reduced productivity, missed opportunities, and potential customer dissatisfaction. Ultimately, such impediments may jeopardize the success of the project and	**8. SAFETY AND SECURITY (8.7. Manmade hazards) - UNDP Risk Appetite: CAUTIOUS**	Likelihood: **3 - Moderately likely** Impact: **4 - Extensive** Risk level: **SUBSTANTIAL (equates to a risk appetite of OPEN)**	From: 01-May-24 To: 31-Dec-2025	Project Manager	Diversify suppliers where possible and maintain open communication channels to anticipate and address potential disruptions.

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			impact the organization's reputation and bottom line.					
7	Limited awareness of potential benefits, concerns about costs or implementation complexity, scepticism about the value of digital technologies, or a preference for traditional methods due to perceived reliability or familiarity.	The local businesses lack interest or commitment in piloting digital solutions	The impact of local businesses lacking interest or commitment in piloting digital solutions includes missed opportunities for efficiency gains, reduced competitiveness in the market, hindered innovation potential, limited access to new markets or customers, and a potential inability to adapt to changing consumer preferences or industry trends	**1. SOCIAL AND ENVIRONMENTAL (1.12. Stakeholder engagement) - UNDP Risk Appetite: CAUTIOUS**	Likelihood: **4 - Highly likely** Impact: **4 - Extensive** Risk level: **SUBSTANTIAL (equates to a risk appetite of OPEN)**	From: 01-May-24 To: 31-Dec-2025	Project Manager	The pilot site will be selected in close consultation with the government and stakeholders. The digital technologies developed will be cost-effective and make sure the intended benefits can be achieved. Capacity-building activities will be done to ensure the piloted technology can be effectively adopted.
8	Political, economic and security situation in Lebanon is very unstable.,	Government is a caretaker and security situation in the country is unstable	This may hinder the implementation of some project activities such as carrying training sessions, access to implementation	**8. SAFETY AND SECURITY (8.5. Civil unrest) - UNDP Risk Appetite: CAUTIOUS**	Likelihood: **3 - Moderately likely** Impact: **3 - Intermediate** Risk level:	From: 01-May-24 To: 31-Dec-2025	Project Manager	UNDP will coordinate closely with the UN Department of Safety and Security (UNDSS) on all security issues and will liaise with government to overcome, to the extent possible, any instability.

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			sites and awareness raising activities etc.		**LOW (equates to a risk appetite of CAUTIOUS)**			