

**PROJECT DOCUMENT**

**Project Title:** Rafah Wastewater Treatment Plant and Reuse Plants - Photo Voltaic Solar System

**Project Number:** Atlas Proposal Number 91323, Output Number 109382

**Implementing Partner:** DEX Modality in coordination with PWA, CMWU, JICA, Rafah Municipality, PECDAR, MOLG, MOA and OXFAM

**Start Date:** March 2018

**End Date:** March 2019

**PAC Meeting date:**

**Brief Description**

In the Gaza Strip, the unsustainable water, sanitation and hygiene (WASH) situation exacerbated by the longstanding blockade has been compounded by the 2014 conflict. Palestinians in Gaza are in dire need of sustainable WASH solutions. Wastewater and sewage treatments lack the appropriate infrastructure to respond to population growth. According to WASH cluster some 90,000 CM of raw or partially treated sewage is discharged daily into the Mediterranean Sea (almost 33 MCM per year), creating pollution, public health hazards and problems for the fishing industry. Today, over 90 per cent of the water is unfit for human use, according to the UN Gaza 2020 report. In this situation, recycled wastewater is a precious resource for Palestinian agriculture. Huge investments are also needed in treatment facilities of waste water and sewage, to be re-infiltrated for use in green areas and some forms of agriculture.

This project aims to protect the public health and improve the wellbeing of the Palestinian population in the Gaza Strip. This project will also contribute to more sustainable and integrated water management in the Gaza Strip through reuse of treated wastewater for irrigation purposes in Rafah Governorate. The quality of treated wastewater for irrigation schemes will be improved through efficient operation of Rafah wastewater treatment plant and Rafah post treatment facilities utilizing solar energy. Community awareness regarding the importance of wastewater reuse will be enhanced.

Contributing Outcome (UNDAF/CPD, RPD or GPD):

**UNDAF Strategic priority 4:** Leaving No One Behind: social development and protection: By 2022, all Palestinians, especially the most vulnerable who are often left behind, have access to quality services, including health and education and social protection systems.

**UNDP/PAPP CP Outcome 2:**

Inclusive, viable and equitable delivery of sustainable basic and social services, community-based infrastructure, contributing to spatial growth and productivity, economic development, people resilience, and anchored in a sustainable management of national resources

**Indicative Output(s):**

**Output 2.4:** Natural resources are sustainably managed, answering both needs for basic services and environment protection

**Output 2.5:** Early recovery and reconstruction efforts in Gaza reinforced and supported

**Gender marker:** GEN2 (Gender equality as a significant objective)

<b>Total resources required:</b>	USD 500,000	
<b>Total resources allocated:</b>	<b>UNDP TRAC:</b>	0
	<b>Donor (GoJ):</b>	USD 500,000
	<b>Donor:</b>	
	<b>In-Kind:</b>	
<b>Unfunded:</b>	0	

Approved by:

UNDP
 
Print Name: Roberto Valent Special Representative of the Administrator
Date: 29.03.2018

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## I. DEVELOPMENT CHALLENGE

Gaza population suffer from sever water problems from both quantitative and qualitative aspects and there are serious difficulties of allocating water among the different competing sectors. According to the World Bank, only 10% of Gaza's population has access to safe drinking water, compared to 90% in the West Bank or about 85% in MENA in general. In the Gaza Strip, the unsustainable water, sanitation and hygiene (WASH) situation exacerbated by the longstanding blockade has been compounded by the 2014 conflict. 96% of Gaza's sole water source, the Coastal Aquifer is unfit for human consumption. Wastewater and sewage treatments lack the appropriate infrastructure to respond to population growth. Some 90,000 CM of raw or partially treated sewage is released daily into the Mediterranean Sea, creating pollution, public health hazards and problems for the fishing industry.

In this situation, recycled wastewater is a precious resource for Palestinian agriculture. According Currently about 106 MCM of wastewater is discharged annually into the environment, while only 50 MCM of water is reclaimed annually (35 MCM in Gaza Strip and 15 MCM in the West Bank)<sup>1</sup>. Increased recycling of wastewater for agriculture would allow a 35% increase in water for agriculture, or enough to irrigate an additional 70,000 dunums adequate to generate additional jobs in the agriculture sector. However, the enormous potential offered by reclaimed water is not being realized due in part to the lack of efficient irrigation schemes, weak regulation, monitoring and management of reclaimed water utilization in agriculture and disincentives to private investment in agriculture. Most fundamentally, developing wastewater treatment plants and other sanitation infrastructure faces a chronic energy crisis, with power outages reaching 12-16 hours a day.

For the past decade, the Gaza Strip has suffered from a chronic electricity deficit that has undermined its already fragile living conditions. The electricity deficit stands at 75% of 400 Megawatt (MW), which is the current demand, due to increased restrictions on the energy supply in 2017. In April 2017, the Gaza Power Plant (GPP) shut down completely due to the lack of fuel. The longer blackouts have a pervasive impact on all aspects of life, undermining basic services and generating serious public health concerns. Despite the longer power shortages, 189 critical facilities providing health, water and sanitation, and solid waste collection services can hardly maintain a minimum level of operation, with emergency fuel provided by humanitarian agencies to run backup generators and vehicles. However, even this current minimal level of service provision is at risk due to the shortage of funds to maintain emergency fuel deliveries beyond August 2017.

The treatment capacity of Rafah Wastewater Treatment Plant (WWTP) which collects and treats the sewage produced by around 70% of 240,000 inhabitants of Rafah Governorate is insufficient and the quality of treated water is bad due to the lack of electricity needed to operate the plant. The frequent interruptions of the Egyptian electricity feeders which provides 27 MW has disrupted the operation of the Rafah WWTP and led to unreliable treatment of the waste water and consequently dumped into the sea without treatment causing environment hazards.

According to the energy sector strategy, by 2020, the Palestinian state must cover at least 50% of power demand with national production. This power capacity growth will be done by diversifying the generation mix, aiming to reach 10% of locally generated energy 2020 to be sources from renewable energy.

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<sup>1</sup> Common Country Analysis 2016, UN Country Team, occupied Palestinian territory

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## II. STRATEGY

Renewable Energy for All aims at addressing the urgent needs of the energy in the WASH sector, particularly fulfilling the electricity gap for the operation of Rafah Wastewater Treatment Plant and Reuse Plants. UNDP initiative will provide renewable energy source as a sustainable solution to the current electricity crisis which would ensure the optimal operation of the Rafah and thus improving the water and agriculture sector as well as economy in the Gaza Strip. Based on its past experiences, mainstreaming renewable energy is the public and social infrastructure proved to be effective and efficient strategy to ensure the delivery and access to quality services. In a context like Gaza that has been suffering a chronic electricity crisis, the solar energy is an effective, efficient and environment friendly solution, that would not only solve the problems at the public health facilities, but also reduce load on the public electricity network.

Different research studies constituted empirical evidence on the prospects of using photovoltaic solar systems as a penitential solution for energy crisis in Palestine. A report about "Renewable Energy in the Middle East"<sup>2</sup> by the NATO Science for Peace and Security Programme, stated that "Palestine has a high solar energy potential. It has about 3,000 sunshine hours per year and high annual average of solar radiation to 5.4 kWh/m<sup>2</sup>/day on horizontal surface. The lowest solar radiation is in December as it amounts to 2.63 kWh/m<sup>2</sup>/day while this reaches 8.4 kWh/m<sup>2</sup>/day in June. These figures are encouraging to exploit the solar energy for different applications such as water heating, water pumping and electrification. Another research study about "The solar energy potential of Gaza Strip"<sup>3</sup> investigated the high resolution, real time solar radiation data over the years (1989-2002) concluded that the average annual global horizontal radiation in Gaza was found to be 2017 kWh/m<sup>2</sup>/year which is feasible to generate solar energy. Also, Palestinian Energy and Environment Research Centre stated that "the utilization of renewable energies is one of the strongest alternatives in Palestine due to absence of fossil fuel resources and several years of occupation."<sup>4</sup>

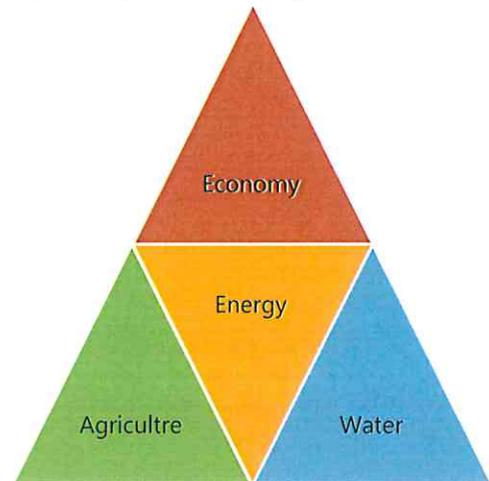
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<sup>2</sup> Mason M. and Mor A., (2009) "Renewable Energy in the Middle East, The NATO Science for Peace and Security Programme.

<sup>3</sup> Al Alaydi J.Y. (2011) "The Solar Energy Potential of Gaza", Volume 11 Issue 7 Version 1.0 Global Journals Inc. (USA) Available at [https://www.researchgate.net/publication/266720830\\_The\\_solar\\_energy\\_potential\\_of\\_Gaza](https://www.researchgate.net/publication/266720830_The_solar_energy_potential_of_Gaza)

<sup>4</sup> Yasin, B. (2007) "Renewable Energy Applications in Palestine" Palestinian Energy and Environment Research Center (PEC) – Energy Authority Technical Department Director (PEC), Palestine. Available at <https://scholar.najah.edu/sites/default/files/conference-paper/renewable-energy-applications-palestine.pdf>

Through this project, renewable energy will serve three sectors, namely the water, agriculture and economic sectors. First, the Gaza Strip is classified as a semi-arid region and suffers from water scarcity. The renewable amount of water that replenishes the aquifer is much less than the abstracted amount which resulted in the deterioration of the groundwater quality. The gap between water demand and water supply is continuously increasing, because of rapid population growth and competing demands in the different sectors. The water supplied by the Coastal Aquifer meets 96% of Gaza's requirements but at the cost of over-extraction.



Second, using treated domestic wastewater is one of the main options to develop the water resources in the Gaza Strip as it represents an additional renewable and reliable water source. Using reclaimed wastewater for agricultural purposes would minimize the deficit of groundwater quantity and would reduce the degradation of the groundwater quality. In other words, wastewater reuse for agriculture offers the greatest scope for application because, it usually has the potential to meet growing water demands, conserve potable supplies, reduce disposal of pollution effluent into surface water bodies, allow lower treatment costs and enhance the economic benefits for farmers due to reduced application rates for fertilizer.

Third, the project will generate economic opportunities as increased recycling of wastewater for agriculture would allow a 35% increase in water for agriculture, or enough to irrigate an additional 70,000 dunums adequate to generate US\$ 84 million per year and provide 13,000 additional jobs in agriculture (UN Common Country Analysis 2016). This will be a source for generating jobs on the labour front. In areas like the Gaza Strip, where water is in short supply, treatment of wastewater for irrigation can provide strong economic benefits because it helps to conserve natural resources (including water and soil nutrients) and protect the environment by preventing sea pollution, protecting water resources, improving water quality, and minimizing seawater intrusion in coastal areas.

Therefore, providing a renewable source of energy for the Rafah Wastewater Treatment Plant (WWTP) which collects and treats the sewage produced by around 170,000 inhabitants of the Rafah Governorate is expected to upgrade its treatment capacity and improve the quality of treated water to the required standards that can fit to safe agricultural utilization. In Rafah, most people are farmers and rely on agriculture as a main source of economy, where the three targeted communities, namely Al Mawasi, Al Shouka and Al Moharrarat are considered the food parcel of the Gaza Strip.

Coastal Municipalities Water Utility (CMWU) has identified the demand of Rafah WWTP to be 270 KWp for optimal operation. JICA through NICCOD had implemented 173 KWp of PV system for the Rafah WWTP. The proposed intervention will be of twofold. First, extra 100 KWp. will be installed in the Rafah which is expected to operate the plant efficiently with the full capacity to treat the waste water to the required standard of the post treatment to produce adequate water quality for irrigation. Second, another 100 KWp will be installed for operating the pumping station to transfer treated water for the targeted farming areas for irrigation purposes. Before the project, 14,000 CM of untreated waste water were dumped into the sea causing public health and environmental hazards for the

fishing industry. Upon completion of the project, such wastewater quantities will be effectively treated, where 7200 CM of the treated water will be utilized for irrigation of agricultural areas in Rafah.

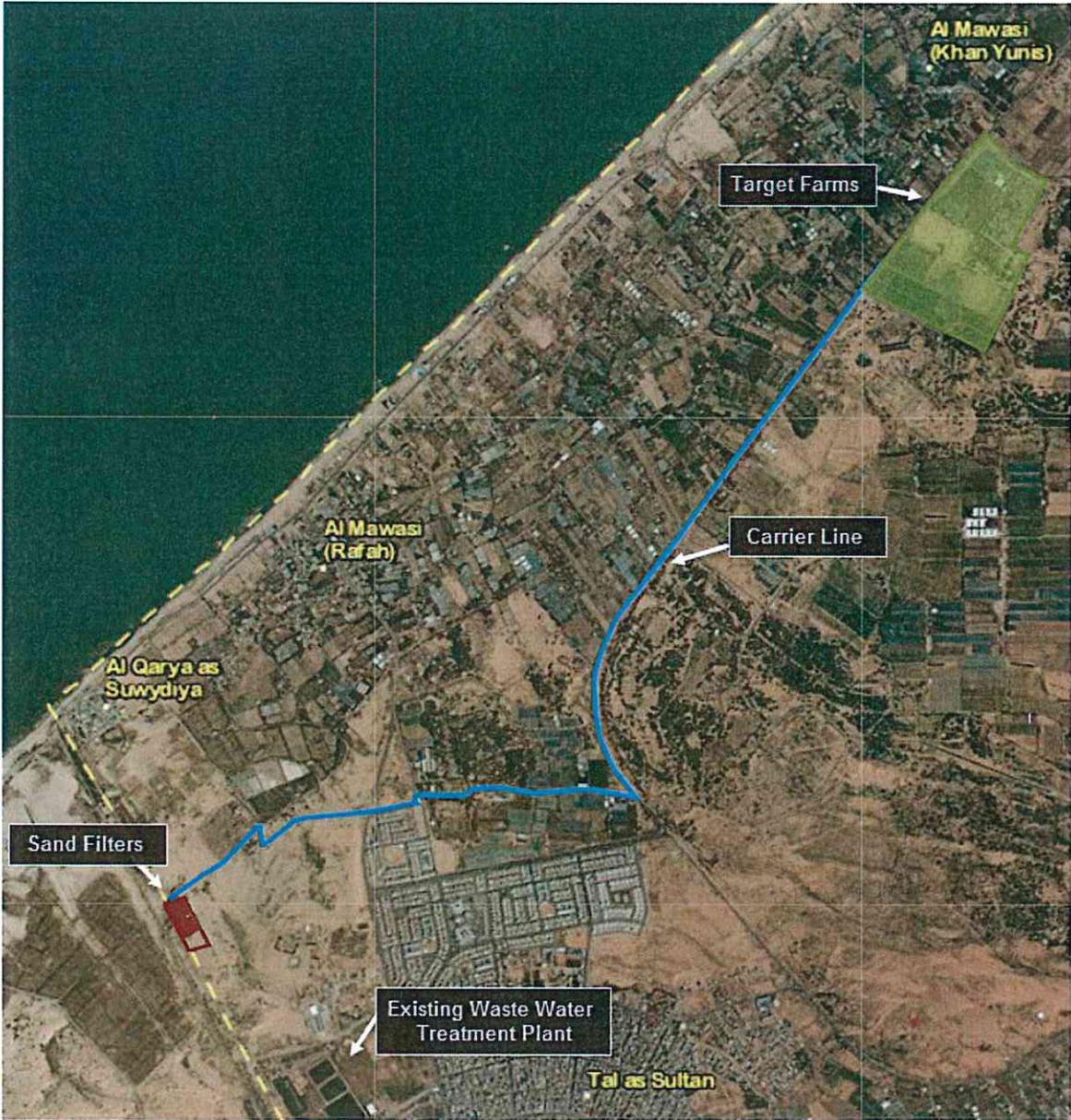


Figure 1: A map shows target area of the project activities

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### III. RESULTS AND PARTNERSHIPS

This proposed project comes in line with the United Nations Sustainable Development Goals (SDG's) agenda for ensuring conservation of environment, including access to water, sanitation and energy (SDG 6,7, 11,13, and15). It is also in line with UNDP country Programme document strategy for safeguarding the environment and protecting natural resources. This project is also in line with the national policy agenda of 2018-2022 where national priority ten has a clear output on environment "Sustainable Environment and Adapting to Climate Change" and also calls to strengthen the capacity for disaster response and crisis management as part of ensuring community and national security

#### Outcomes:

1. Palestine's infrastructure, and natural and cultural resources are more sustainably used and managed.
2. Palestinians have enhanced, secured and sustainable access to their natural resources, better environmental protection and sustainable resources management.

#### Objectives:

1. Palestinians have the capacity to access basic and social services
2. Key government and non-governmental actors have capacities to scale up climate change adaptation and mitigation interventions across major sectors of the economy.

#### Outputs and Activities:

***Output 1: Rafah waste water treatment Plant and Rafah Post Treatment facilities are operated by utilizing solar energy;***

Activity 1.1: Hire a consultant to design the solar energy system.

Activity 1.2: Site preparation and levelling.

Activity 1.3: Supply and install on grid solar energy system with capacity of 200 Kwp.

Activity 1.4: Connect of the new system to the national grid.

#### ***Resources Required to Achieve the Expected Results***

A total budget of USD 500,000 is required to fully implement the proposed Project activities and achieve the desired results. UNDP will utilize its expertise and resources for the optimal implementation of the Project activities. A detailed budget breakdown is shown in Annex I.

#### ***Partnerships***

UNDP/PAPP will work with a multiple of partners who are the major partners and stakeholders of the project.

**Ministry of Agriculture, (MoA), Environment Quality Authority (EQA), Palestinian Water Authority(PWA), Palestinian Energy Authority (PEA) and Coastal Municipalities Water Utility(CMWU):** Senior Beneficiaries and national counterpart. MoA will play a key role in facilitation and implementation of project activities and ensuring the sustainability of the initiative through assigning key focal points who will coordinate between the different stakeholders.

The project will be implemented by UNDP, JICA through PECDAR and OXFAM. The overall target of

the project is to post treat 13,000 cubic meter of treated wastewater. This target will be implemented by JICA through PECDAR, OXFAM and UNDP. The conceptual design has been completed by Japanese NICCOD and their local partner "Economic & Social Development Centre of Palestine". The different components of the project were divided between the three organizations (UNDP-JICA and OXFAM) in order to implement complete, comprehensive and operational project. UNDP interventions cover only one third of the total project.

**PECDAR:** upgrading RWWTP, construction of the pressure line to Al Mawasi area (1,500 meters) and construction of sand filter.

**UNDP:** construction of 200 KWp PV system in RWWTP and connecting the new PV station to both RWWTP and RRWWTP through electrical cables and transformers for phase1 in addition to fence and 12 inch diameter pressure line to Al Muhararat area that is planned as phase2.

**OXFAM:** construction of one sand filter, lab, and pressure line to Al Shuka area.

Other line ministries and agencies are involved:

**Ministry of Agriculture (MoA):**

MoA is the responsible national body for the agriculture sector and has the primary responsibility to license and to monitor the use of effluent for irrigation. Quality standards for reuse to be imposed. The MoA will also have the primary role in setting up irrigation systems and coordinating groups of farmers.

**The Environment Quality Authority (EQA):**

EQA is the responsible national body for safeguarding the Environment and protecting the natural resources in Palestine. It is responsible to formulate the national policies and strategies for all environmental issues. It is also responsible to implement the international environmental agreement with regards to biodiversity and protection of natural resources. EQA will work and cooperate with UNDP and will be part of the technical steering committee.

**PWA and CMWU**

The Palestinian Water Authority is the regulator for the water sector monitoring the quality of effluent discharged from the treatment plants to meet the minimum Palestinian standards for treated waste water. CMWU is the service provider for water and waste water collection and treatment. Accordingly, it is essential that both PWA and CMWU be part of the technical steering committee of the project to help managing the RWWTP efficiently and to safeguard the PV panels that will serve both plants. Furthermore, they will monitor and mainstream the Palestinian strategies for treated wastewater that is very important for the successful implementation, keeping up the health standards and sustainability of the project.

**Palestinian Energy Authority (PEA)**

The Palestinian Energy Authority is the conventional and renewable energy regulator. They guide the technical specification of the transformers, cables and PV system in order to be compatible with the national grid. They will be responsible for sustaining the energy system.

***Risks and Assumptions***

The Programme's proposed intervention responds to three chronic challenges in Gaza strip, namely, energy, water and economy. The three challenges make a close triangle which is resilience and sustainable development. This intervention partially overcome the scarcity of good quality of water that can be utilised for irrigation and reviving the productive sector. Naturally, water and energy can't be separated in order to have proper treatment and performance of the RWWTP as well as RRWWTP. Hence, there is three important considerations that are studied. First, PECDAR and Oxfam will be implementing their part of the project that will be operational by the end of this intervention. Second, it is critical that farmers accept the idea of using treated waste water for irrigation. Third the stakeholders understand the whole plan and its connection with the public health where continuous testing and monitoring are needed at all times. The three basic assumptions necessary for Programme implementation are as follows:

- All partners work attentively to implement the different components of the RRWWTP using their available funds;
- Farmers accept the reuse idea and are currently growing part of their crops with good quality of treated waste water.
- Stakeholders are monitoring, testing and evaluating the system of reuse constantly while taking mitigation measures when needed once deviations are noted.

- **Risk Register**

The volatile political situation in the Gaza Strip is the major potential risk for the implementation of the programme. There are other factors with less significance to be considered in this regard. The entry of materials is currently from Israeli crossing only and needs access coordination through the current established UNDP mechanism which normally takes huge efforts and long time for entry of relevant construction materials. Below is the risk log:

Risk	Probability	Impact	Risk Response
<b>Environmental/Political:</b>			
<b>Resumption of hostilities or Internal fight / disputes</b>	Moderate	High	<p>Careful monitoring of the political situation to avoid incurring any losses to the Project. Anyhow, all imported materials are stored in UNDP store in Karni until the construction starts.</p> <p>If major hostilities or internal fighting occur and could put the safety and security of Project personnel, contractors or activities at risk, UNDP will:</p> <ul style="list-style-type: none"> <li>- Suspend the activities until the risk is removed.</li> <li>- Precautionary secure the work sites and materials.</li> <li>- Inform all parties with the GPS coordinates of the sites.</li> <li>- inform the local authorities about the active Projects and assets seek assistance to safeguard the assets and operations.</li> <li>- Make revision of the budget and work plan.</li> </ul>
<b>Operational Risk</b>			

<b>Delay in access of materials</b>	Moderate	High	<ul style="list-style-type: none"> <li>- The materials' entry is coordinated through the UNDP access coordination mechanism in full coordination with PEA.</li> <li>- All technical information is properly shared with the borders Authorities.</li> <li>- Early and continuous follow up on obtaining relevant approval.</li> <li>- Approval of materials are carried as early as possible with the full consent of PEA.</li> </ul>
<b>Financial Risks</b>			
<b>Increase in cost pertaining to building materials.</b>	Low	Moderate	The timeframe of contracts does not exceed one year and the current project costs are matching the implementation period. The contract thus does not allow covering any fluctuation in prices.
<b>Depreciation in the value of US\$.</b>	Low	Moderate	<p>Effective and efficient management and use of financial resources are well maintained through monitoring and evaluation scheme established in UNDP at the local and global level.</p> <p>In procurement, contractors are asked to provide their prices in either USD or local currency (ILS) where all currencies of the received bids are converted to USD based on the UNDP prevailing rate of exchange at date of bid opening. Resulted contract with winning contractor will reflect the currency originally quoted by the contractor. New policy in procurement is requesting fixation of the contract value in local versus USD through the banks.</p>

### **Stakeholder Engagement**

One of the UNDP's approaches is to strengthen social networks, community ties, and build social awareness to increase communities' access to safe environmentally friendly essential services, with the objective of increasing the community's sense of ownership for public Projects.

*Direct beneficiaries:* 500 farmers and their families (50% males and 50% females) from Al Mawasi, Al Shouka and Al Moharrarat areas who will benefit directly from access to treated waste water for irrigation of their farms.

*Indirect beneficiaries:* around 170,000 inhabitants of the Rafah Governorate who will benefit from improved public health and environment conditions after treatment of the waste water that were pumped into the sea.

### **Knowledge**

In close coordination with PEA, a model to safely operate waste water facility utilising solar clean energy of 200 KWp capacity will be a pioneer intervention that others can replicate for other water and waste water facilities in Gaza Strip.

## ***Sustainability and Scaling Up***

The proposed intervention of supplying renewable energy for Rafah Waste Water Treatment Plant itself enhances the sustainability and optimal operation of the plant through providing the necessary power to operate and transfer the treated waste water into agricultural lands. Besides, the intervention will provide practical solution to the environmental hazards resulted from uncontrolled discharge of untreated sewage into the sea.

At the governance level, the Ministry of Agriculture formed Reuse of treated wastewater projects' management committee. The committee is headed by the MoA and will consist of Ministry of National Economy (MoNE), Ministry of Local Governance (MoLG) and Ministry of Finance (MoF). This committee will supervise the reuse of treated wastewater in close cooperation with of MoA, Ministry Of Health (MoH), PWA and PEA. Each reuse project will be managed through the established structure in order to collect revenues from beneficiaries and monitor the whole system. So, the MoA will be responsible for handing over the project and later for the operation. As for the Japanese funded Reuse of treated wastewater project in Rafah, the MoA will formulate a technical Steering Committee from: MoA, PWA, UNDP, PECDAR, OXFAM and JICA to play an important part in the successful implementation of the project and its sustainability in the future.

The Steering Committee will be involved in the project development and project implementation from its initiation phase. The members of the steering committee will cooperate, ensuring that their different and complimentary mandates and professional experience, will have a positive impact on the realization of the project's outcomes and outputs. All related socio-economic and environmental issues will be addressed and properly discussed and planned for at the early stages. The suggested institutional and legal set up that were used in the last two years at Sheikh Ejleen wastewater reuse project, will be used for operation of the project. This set-up will enable the beneficiaries to participate in the decision making of the treated wastewater distribution and reuse unit (WWRU).

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## **IV. RESULTS FRAMEWORK**

**Intended Outcome as stated in the UNDAF/Country [or Global/Regional] Programme Results and Resource Framework:**

**UNDAF 2018-2022 Outcome:** Palestine's infrastructure, and natural and cultural resources are more sustainably used and managed

**Country Programme:**

Outcome 1: Palestinians have enhanced, secured and sustainable access to their natural resources, better environmental protection and sustainable resources management

Outcome 2: Palestinians have enhanced and secured and sustainable access to their natural resources, better environmental protection and resources management

**Outcome indicators as stated in the Country Programme [or Global/Regional] Results and Resources Framework, including baseline and targets:**

- No. of Palestinians benefiting from a better access to water and waste water services (direct and indirect beneficiaries)

Baseline: 240,000 of Rafah population have access to poor waste water treatment.

Target: 240,000 of Rafah population have access to good quality of post treated waste water.

**Applicable Output(s) from the UNDP Strategic Plan:**

**Outputs:**

3. Palestinians have the capacity to access basic and social services

4. Key government and non-governmental actors have capacities to scale up climate change adaptation and mitigation interventions across major sectors of the economy.

**Indicators:**

1. No. of guided adaptation and mitigation interventions developed and implemented by public-private partnerships. Target: a model to safely operate waste water facility utilising solar clean energy
2. No. of Palestinians (disaggregated by sex, age and geographical location) benefitting from improved access to water and wastewater facilities. Target: 240,000 people in Rafah.

**Project title and Atlas Project Number:**

Project title: Rafah Wastewater Treatment Plant and Reuse Plants - Photo Voltaic Solar System

Atlas Proposal Number:

Atlas Output Number:

EXPECTED OUTPUTS	OUTPUT INDICATORS	DATA SOURCE	BASELINE		TARGETS		DATA COLLECTION METHODS & RISKS
			Value	Year	Value	Year	
<b>OUTPUT 1:</b> Rafah waste water treatment Plant and Rafah Post Treatment facilities are operated by utilizing solar energy;  This corresponds to CPD (Output 2.3): Key national institutions, at both central and local levels, have capacities to improve provision of basic environmental services	1.1 No. of KWp of clean energy generated through PV system	<i>UNDP and Partners reports</i>	174 KW of solar panels available for the RWWTP and Reuse.	2017	Additional 200 Kw for RWWTP and Reuse (100 per each)	2019	Meetings, Site Visits, BoQ, and Reports.
	1.2 No. of cubic meters of good quality of post treated waste water produced per day.	<i>UNDP and Partners reports</i>	0		About 7,200 cubic meters per day of treated waste water will be post treated and used to irrigate about 1,400 dunums in the pre-settlement areas in Rafah;	2019	
	1.3 No. of farmers using the treated waste water for irrigation disaggregated by sex	<i>UNDP and Partners reports</i>	0	2017	about 500 farmers use post treated waste water for irrigation	2019	

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## V. MONITORING AND EVALUATION

The formal performance measurement of the Project will involve the application of the Programme Measurement Framework (PMF), and the collection of data specific to each of the applicable PMF indicators, at regular intervals and in line with Project reporting.

The indicators will be assessed annually and output indicators at regular intervals. While the monitoring of outcomes is carried out as a formal process in line with the PMF, the ongoing monitoring and evaluation at the level of outputs and activities are also essential for effective implementation and management decision-making.

The Project's PMF is presented on the pages which follow, providing an overview of the outcomes, their respective indicators, as well as information pertaining to the process and schedule for monitoring them.

In accordance with UNDP's programming policies and procedures, the Project will be monitored through the following:

### Within the annual cycle

- **Track Progress.** Following the frequency cited in the monitoring plan, progress data against the results indicators will be collected and analysed to assess the progress of the Project in achieving the agreed outputs. National data sources should be used whenever possible. Slower than expected progress will be addressed by the Project management. Beneficiary feedback will be part of regular data collection and performance assessment.
- **Monitor and Manage Risk.** Based on the initial risk analysis submitted (see annex 2), a risk log shall be actively maintained, including by reviewing the external environment that may affect the Project implementation. Risk management actions will be identified and monitored using a risk log. This includes monitoring social and environmental management measures and plans that may have been required as per UNDP's Standards. Audits will be conducted in accordance with UNDP's audit policy to manage financial risk.
- **Evaluate and Learn.** Evaluations shall be conducted in accordance with the evaluation plan. Knowledge, good practices and lessons should be captured and shared, as well as actively sourced from other Projects and partners, and integrated back into the Project. If a Project evaluation is required (e.g., when mandated by partnership principles, or due to the complexity or innovative aspects of the Project), it should be conducted in accordance with the Project's evaluation plan.
- **Review and Make Course Corrections.** The Project management will review the data and evidence collected (through all of the above) on a regular basis within the annual cycle, and make course corrections as needed. The frequency of review depends on the needs of the Project, but an internal review of the available progress data against the results indicators is required at least quarterly. Any significant course corrections that require a decision by the Project Board should be raised at the next Project Board meeting.

### Annually

- **Annual Project Quality Rating.** On an annual basis and at the end of the Project, the quality of the Project will be rated by the QA Assessor against the quality criteria identified in UNDP's Project Quality Assurance System. Any quality concerns flagged by the process must be addressed by Project management.

- **Annual Project Review and Report.** The Project Board shall hold a Project review at least once per year to assess the performance of the Project and appraise the Annual Work Plan for the following year. An annual report will be presented to the Project Board for the review, consisting of progress data showing the results achieved against pre-defined annual targets at the output level, the annual Project quality rating summary, an updated risk long with mitigation measures, and any evaluation or review reports prepared over the period. Any concerns on the quality or progress of the project should be discussed by the Project Board where any necessary management actions should be taken to address such issues. This review is driven by the Project Board and may involve other stakeholders as required.

### Closure

- In the Project's final year, the Project Board shall hold an end-of Project review to capture lessons learned and discuss opportunities for scaling up.

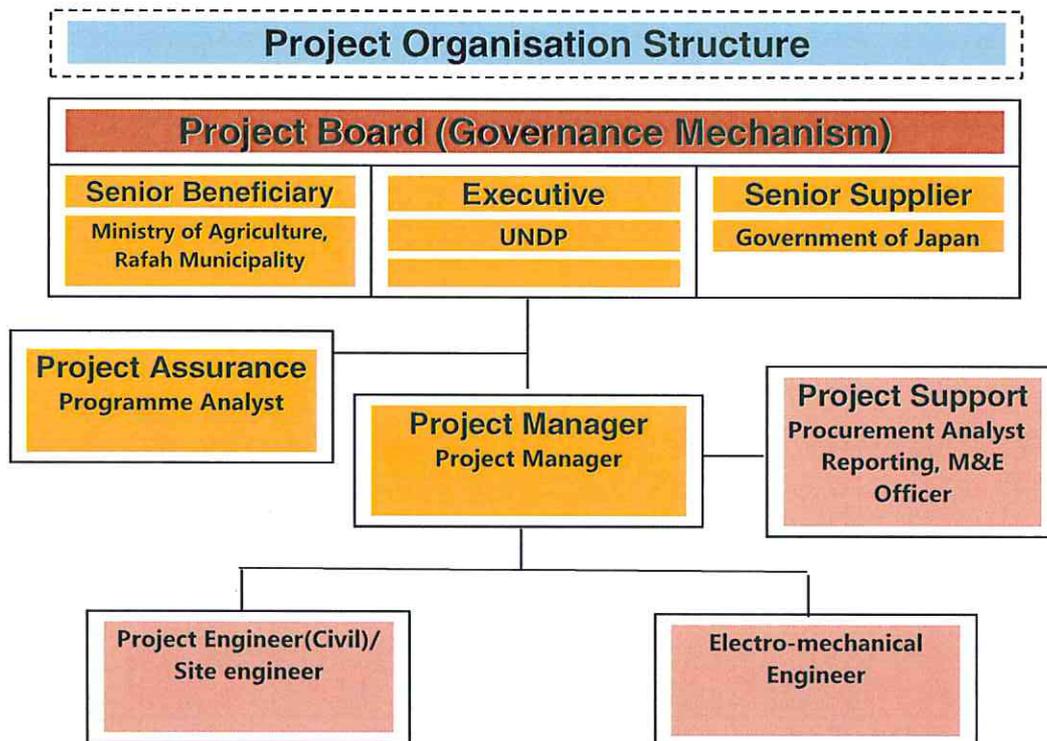
## VI. ANNUAL WORK PLAN

EXPECTED OUTPUTS	PLANNED ACTIVITIES	Planned Activities Timeframe				RESPONSIBLE PARTY
		Q2 2018	Q3 2018	Q4 2018	Q1 2019	
Output 1*: Operation of Rafah waste water treatment Plant and Rafah Post Treatment facilities utilizing solar energy  Gender marker: GEN2	1.1 Hire a consultant to design the solar energy system.	x				UNDP/PAPP
	1.2 Site preparation and levelling		x			UNDP/PAPP
	1.3 Supply and install on grid solar energy system with capacity of 200 Kwp			x	x	UNDP/PAPP
	1.4 Connection of the new system to the national grid				x	UNDP/PAPP
	1.5 Monitoring & Evaluation	x	x	x	x	UNDP/PAPP
	1.6 Advocacy and Visibility	x	x	x	x	UNDP/PAPP

## VII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

UNDP will assign a Project Manager from its staff to follow up on all managerial, including administrative and financial issues related to the Project. In addition, UNDP will assign an Engineering Analyst, who will take on the role of a Technical Quality Assurance, to manage and assess the daily technical monitoring of the Project. The UNDP will also assign an Electro-Mechanical Engineer who manages and handles all technical electrical and mechanical related issues of the Project. The day to day Management (Project Manager) will be handled by the Project Manager, whereas the UNDP Programme Analyst will be responsible for the overall Project assurance.

A Project board will be established to follow up the works implemented by UNDP. The members of the board will include the Government of Japan as the donor, a representative of the Ministry of Agriculture & Rafah Municipality as the end beneficiary and owner and that coordinates the Project with other PA counterparts, and UNDP/PAPP as the implementing partner. This board will meet every 3 months or exceptionally upon request by Board members, to review priorities and progress towards expected results.



The UNDP will utilize its standard Management, Procurement, Contracting, and Financial procedures in the implementation of the Project. The Project will be tendered locally and through the UNDP procurement web site portal. A public tender opening will occur in which all relevant parties may be present. UNDP's procurement unit will evaluate the tender and only upon approval from UNDP Contracts, Assets, and Procurement Committee will a contract be awarded to the winning contractor. Based upon the Japan International Cooperation Agency's (JICA) technical assessment of priorities and needs of health facilities, UNDP and MoH will coordinate the technical specifications and works to ensure that the results are in line with the PA Palestine National Policy Agenda for 2017 – 2022 Plan. UNDP will monitor and supervise all construction works on a daily basis and will be responsible for verifying all works and the issuance of payments to contractors based upon actual works performed. Through this mechanism UNDP will directly execute all Project activities. The Project budget would cover the costs of the Project Implementation Unit, all Project-based expenses, and UNDP's General Management Services.

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## VIII. VISIBILITY PLAN

UNDP is considering the importance of the communication and visibility, and therefore, includes a line for this purpose. The Project Team in close coordination with UNDP/PAPP Communication Unit will develop a communication plan that includes the following:

- a) Full participation of the initial inauguration and handover of the Project
- b) Production of press releases to cover Project news and events
- c) Production of Project fact sheets which will be published in UNDP/PAPP official website.
- d) Highlighting the funding source for the Project in all announced activities
- e) Signing and Closing Ceremonies
- f) Maintaining the proper logos and all related materials during the Project lifecycle that includes tendering, construction plaques, inauguration plaques, etc.
- g) Standard UNDP communication branding for donors' visibility

Effective communication with all stakeholders (Palestinian institutions, UN agencies, donors, media and beneficiaries), is fundamental to the Project's success. Information and communication needs of the stakeholders' relative to the progress of the Project will be determined and highlighted as a communications plan/matrix. It will play an essential role in mitigating expected risks in ensuring advocacy.

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## IX. LEGAL CONTEXT

The Project document shall be the instrument envisaged and defined in the Supplemental Provisions to the Project Document, attached hereto and forming an integral part hereof, as "the Project Document".

This Project will be implemented by UNDP/PAPP 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]<sup>5</sup> [UNDP funds received pursuant to the Project Document]<sup>6</sup> are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via [http://www.un.org/sc/committees/1267/qa\\_sanctions\\_list.shtml](http://www.un.org/sc/committees/1267/qa_sanctions_list.shtml). This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

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<sup>5</sup> To be used where UNDP is the Implementing Partner

<sup>6</sup> To be used where the UN, a UN fund/programme or a specialized agency is the Implementing Partner

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. 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.
6. 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 [*for 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 will take appropriate steps to prevent misuse of funds, fraud or corruption, 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 and anti-fraud policies are in place and enforced for all funding received from or through UNDP.
  - d. 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 and (b) 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](http://www.undp.org).

- e. 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.
- f. 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 or corruption 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.

- g. 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 or corruption, or otherwise paid other than in accordance with the terms and conditions of this 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. Recovery of such amount by UNDP shall not diminish or curtail any responsible party's, subcontractor's or sub-recipient's obligations under this Project Document.

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 or corruption, 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.

- h. 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.

- i. 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.
- j. 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.

## XI. ANNEXES

### Project Budget

Project activities	Total Cost (USD)
consultant to design the solar energy system.	5,000.00
Site preparation and levelling	23,000.00
Supply and install on grid solar energy system with capacity of 200 Kwp	300,000.00
Connection of the new system to the national grid	30,000.00
<b>Subtotal: technical activities</b>	<b>358,000.00</b>
UNDP Direct Implementation Cost	77,145.32
General Operating Expenses + transportation (USD 2,984.63)	14,558.71
Advocacy and Visibility officer (1%)	5,000.00
Monitoring and Evaluation	3,258.93
Communications (1%)	5,000.00
<b>programmable amount</b>	<b>462,962.96</b>
UNDP GMS 8%	37,037.04
<b>GRAND TOTAL</b>	<b>USD 500,000.00</b>

PROJECT DOCUMENT

UNDP Project Direct Implementation Cost

UNDP Project Direct Implementation Cost				
Item	%	Cost per year	Total \$	
Programme Quality Assurance -NOB	14%	134,131	18,778.34	
Project Manager (SB4/3) 50% for 12 months	50%	64,634	32,317.00	
Project Engineer(Civil)/Site engineer (SB4/1)-37.5% for 9 months	37.50%	50,375	18,890.63	
Programme Assistant SB3/3 (15% of the salary without any other associated cost, GOE,,etc	15%	47,729.00	7,159.35	
<b>Total</b>			<b>77,145.32</b>	