



Project Document

Solar-Powered Refrigeration Systems

Mili Atoll, Republic of the Marshall Islands

Project number	21985-00
Project title	Solar-Powered Refrigeration Systems
Starting date	As of as of signature date of the legal agreement UN2UN
Duration	7 months
Project site	Mili Atoll, The Republic of the Marshall Islands
Government coordinating partner	Member of Parliament, Mili Atoll and the Mayor, Mili Atoll Local Government
Other partners	Honorary Consulate in RMI/Indian Embassy, concurrently accredited to RMI Ministry of Works, Utilities and Infrastructure (MoWIU), RMI
Executing agency	UNOPS
Donor	India-UN Development Partnership Fund through UNOSSC
Donor contribution	USD 712,391 (from which USD 691,642 goes to UNOPS and USD 20,749 to UNOSSC)

The goal of this project is to alleviate hardship, and widespread food insecurity by providing solar powered chest freezers to households on Mili Atoll to store food.

UNOPS will support the Government of RMI in procuring and delivering 100 chest freezers with corresponding solar panels and batteries. The Ministry of Works, Utilities and Infrastructure, will provide the installation of the solar panels and chest freezers as well as associated work like cabling to ensure the setup and functioning of the system. In addition, MoWIU will provide training for basic maintenance to selected individuals of the Milli Atoll.

The programme will be funded by the UN-India Development Partnership Fund through the UN Office for South-South Cooperation (UNOSSC).

Expected **outputs** of this programme are:

- 100 households supplied with solar powered chest freezers
- Environmentally friendly and sustainable means of storing food is available
- Trained personnel for installation and maintenance of the freezers available
- Reduction in time, money and energy requirements spent on frequent food purchasing trips
- Extended shelf life of food due to improved storage option
- Contribution to the SDGs: 1,2,3,5 and 17

Acknowledged on behalf of: Signature: Date: Name and Title:

Government of the Republic of the Marshall Islands			Hon. Wilbur Heine Senator and Member of Parliament, Milli Atoll
Ministry of Works, Infrastructure and Utilities - RMI			Hon. Jiba Kabua Minister of Works, Infrastructure and Utilities
United Nations Office for Project Services - UNOPS			Ms Samina Kadwani Director Thailand, Indonesia and Pacific Countries
United Nations Resident Coordinator			Mr. Sanaka Samarasinha UN Resident Coordinator United Nations FSM, Fiji, Kiribati, RMI, Nauru, Palau, Solomon Isl, Tonga, Tuvalu, Vanuatu

Expected outputs of this programme are:

- 100 households supplied with solar powered chest freezers
- Environmentally friendly and sustainable means of storing food is available
- Trained personnel for installation and maintenance of the freezers available
- Reduction in time, money and energy requirements spent on frequent food purchasing trips
- Extended shelf life of food due to improved storage option

Contribution to the SDGs: 1,2,3,5 and 17

Acknowledged on behalf of: Signature:

Date:

Name and Title:


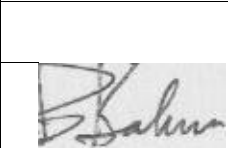
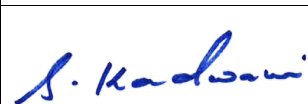
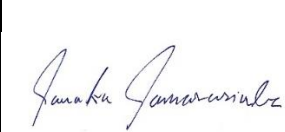
Government of the Republic of the Marshall Islands		27, Mar 2020	Hon. Wilbur Heine Senator and Member of parliament, Midi Atoll
Ministry of Works, Utilities and Infrastructure - RMI		3/24/20	Hon. Jibe Kabua Minister of Works, Utilities and Infrastructure
United Nations Office for Project services UNOPS		30 Mar 2020	Ms Samina Kadwani Director Thailand, Indonesia and Pacific Countries
United Nations Resident Coordinator		30/3/2020	Mr. Sanaka Samarasingha UN Resident Coordinator United Nations FSM, Fiji, Kiribati, RMI, Nauru, Palau, Solomon Isl, Tonga, Tuvalu, Vanuatu

TABLE OF CONTENTS

1. OVERVIEW	4
2. BACKGROUND	5
3. OBJECTIVES	7
4. SERVICES AND PROJECT APPROACH	8
5. TIMELINE	11
6. GOVERNANCE	12
7. BUDGET	13
8. WHY UNOPS	14

1. OVERVIEW

Title	Solar-powered Refrigeration Systems for Mili Atoll, RMI
Fund	India – UN Development Partnership Fund through UNOSSC
Objective(s)	Alleviate hardship and widespread food insecurity by providing solar powered chest freezers to households on Mili Atoll to store food.
Specific activities	<p>Procurement of the chest freezers with corresponding solar panels and batteries to be delivered to Mili Atoll.</p> <p>Grant issuance to the Ministry of Works, Utilities and Infrastructure for the installation of procured items and training to selected individuals to maintain equipment.</p>
Location	Mili Atoll, RMI.
Duration	7 months
Budget	USD 712,391
Signatory parties	UNOPS, UNDP through UNOSSC
Implementing agency	UNOPS
SDG contribution	The project aims to directly contribute to the following SDGs: SDG 1 - No Poverty; SDG 2 - Zero Hunger; SDG 3 - Good Health and Wellbeing; SDG 5 - Gender Equality, SDG 17 - Partnerships for the Goals

2. BACKGROUND



Figure 1: The map of the Republic of the Marshall Islands

The Republic of the Marshall Islands is an equatorial nation of 29 scattered coral atolls and five islands over a vast oceanic EEZ area of approximately 2.13 million sq/km in the Central Pacific Ocean. There is incomplete analysis of hardship, but MDG monitoring indicates that basic needs poverty and hunger is rising. The young urban poor are among the most marginalised with dependence on the cash economy, but fewer social welfare protections. The challenges facing outer island communities include water shortages, lack of transport, and reduced access to electricity, telecommunications, and basic services.¹

RMI is a former Trust Territory of the Pacific under United States Administration. Since 1986, the relationship between the two countries has been defined by the Compact of Free Association, whereby the U.S. provides annual payments and defence in exchange for continued U.S. military use of Kwajalein Atoll. The legacy of U.S nuclear testing in RMI has adversely affected human security, public health, and environmental safety and caused the loss of customary land and cultural heritage.

RMI is highly urbanised with 75 per cent of the country's 53,000 people resident in the two urban centres the capital Majuro and Ebeye, the most densely populated island in the Pacific. RMI's rapid population growth and the contamination of its natural environment increasing the pressure on subsistence farming and fishing. Urbanisation is placing stress on land and water and increasing the demand for housing, classrooms, energy, and waste management. A high natural population increase of 2.4 per cent per annum is offset by net emigration of Marshallese to the US.

Despite having one of the highest per capita spending rates of donor aid, development assistance has not equated to socioeconomic benefits for the most vulnerable. Since the reduction in grants after the Amended US Compact, the economy has performed weakly. Physical isolation, weak institutions, and the lack of economic diversity forecast low growth in the medium term. A fiscal deficit is anticipated once the Compact ends in 2023 with further reductions in public service anticipated.

Children make up almost half of the population and significant gains have been made in reducing child and infant mortality. Ninety per cent of children attend primary school with gender parity achieved. Special education programming has been introduced for children with disabilities. Education quality is a concern with only 9 per cent of students graduating from primary school with age appropriate mathematics proficiency.

¹ United Nations Pacific Strategy 2018 - 2022, available at: <http://www.ws.undp.org/content/samoa/en/home/library/un-system/united-nations-pacific-strategy-2018-2022/>

School completion rates are low. Immunization coverage is less than 50 per cent on some islands and rural children are three times less likely to be fully immunized than urban children.²

Marshallese culture is matrilineal with an established social protection system based on access to land, cooperative labor, social obligations, and reciprocity. Studies indicate a decline in family values and erosion of traditional safety nets leading to an increase in violence, particularly towards women. More than half of the women surveyed indicated they had experienced physical and/or sexual violence in their lifetime. There are few if any services specifically for women in outer islands. Rural adolescents in RMI continues to have the highest pregnancy rate in the Pacific with low knowledge of contraceptive use.^[3]³

The atoll nation is also among the most vulnerable small island states to the adverse effects of climate change driven by accelerated sea level rise and storm water induced sea water inundation that results in the salinization of soil and contamination of limited ground water. It is affected by a lack of economies of scale, high costs and limited availability of transportation, high imported fuel prices, relatively poor soil that limits agricultural activities, high migration rates of young persons and diminishing returns from coral reef based near shore fisheries. Although it has an intermediate per capita income, this statistic is skewed by the inclusion of land lease payments and nuclear claims payments for a segment of the population. These factors act in unison to create a situation in the outer atolls where older persons and young (<18 years old) age groups dominate and create a vulnerable population. As a consequence, food security has arisen as a prominent hardship. One such rural atoll is **Mili Atoll**, which is located approximately 93 miles southeast of the urbanized atoll, Majuro. It is the second largest atoll in land area and has a population of 1500 persons.^[4]⁴

In order to improve food security UNOPS and UNOSSC, in consultation with the Government of RMI, are proposing that **solar powered small home systems which support refrigeration (chest freezers)** are supplied and installed at selected households in Mili Atoll. The ability to freeze food (from subsistence farming and fishing) will allow the benefitting households to store food for longer periods bridging fluctuations in food production and fisheries more easily.

Renewable energy based solutions, such as the one proposed under the present project, in small island states' development have been recognized by numerous international (IRENA), regional (SPC), multilateral organizations (ADB, WB, IMF) and bilateral donors (EU, DFAT, MFAT) as appropriate development assistance with very positive impacts for local populations. In the Marshall Islands, solar PV interventions have been supported by the EU (small home lighting systems), Gov. of Italy and France, IUCN etc. Recently the Republic of China (ROC Taiwan) has also provided development assistance through numerous solar street light projects. The USDA rural utilities service provided a competitive grant programme based project that provided solar powered freezers to 3 atolls' communities.

Reasons to choose solar PV over fuel based systems:

- Very high imported fuel costs for procurement and transportation to the outer rural atolls to operate diesel generators;
- Practical and safety improvements with the use of solar PV;
- Decentralization of the power system required over geographically distributed populations;
- Availability of off-the-shelf technology for solar PV refrigerators/freezers;
- Relative ease of installation of small home systems with the participation of the beneficiary communities or households;
- Presence of local entrepreneurship that supports solar PV activity;
- Increasing interest and familiarity with the use of solar PV among the rural population;
- Increasing demand for technical skills to install and maintain PV systems provides learning and job opportunities;

2 United Nations Pacific Strategy 2018 - 2022, available at: <http://www.ws.undp.org/content/samoa/en/home/library/un-system/united-nations-pacific-strategy-2018-2022/>

³ Ibid

⁴ Initial Concept Note of RMI to UNOSSC

3. OBJECTIVES

Goal (= long term impact):

Healthier population through consumption of food with increased longevity of nutrition due to improved food storage facilities.

Objectives (= short term outcome):

Increased availability to long-term food storage options to support healthy diets.

Outputs (= specific results generated by activities):

- 1) 100 households supplied with solar powered chest freezers
- 2) Environmentally friendly and sustainable means of storing food is available
- 3) Trained personnel for installation and maintenance of the freezers available
- 4) Reduction in time, money and energy requirements spent on frequent food purchasing trips
- 5) Extended shelf life of food due to improved storage option

Activities (= what tasks need to be done for achieving outputs):

- 1) Procure and deliver 100 solar powered chest freezers
- 2) Install in 100 households by the Ministry of Works, Utilities and Infrastructure - RMI
- 3) Train 15 individuals in operations and maintenance of the freezers by the Ministry of Works, Utilities and Infrastructure - RMI

Output Indicators:

Number of chest freezers and solar panels installed.

Number of individuals trained in operation/maintenance.

Outcome Indicator:

Average number of days for which food items have been stored without going bad.

Exclusions:

UNOPS will not be responsible for the mapping of beneficiaries' households, and for the final selection of those receiving chest freezers.

Equally UNOPS will not be responsible for the selection of trainees.

Assumptions:

The local/national Government of the Republic of the Marshall Islands will be in charge of the following:

- tax exemption documentation
- selection of 100 households to receive sets to be provided
- maintenance/repairs/spare parts over and beyond the above-mentioned basic set and training

4. SERVICES AND PROJECT APPROACH

Description of Goods and Services:

Goods to be procured and delivered by UNOPS:

System Specification for the sets:

- 600 Watt PV modules
- 3.2 galvalume powder coated pole with breaker fuses switch panel
- 400Ah 12V AGM sealed deep cycle solar battery
- 45 amp 12-24 vdc charge controller
- 165l (or similar) freezer with 12 V compressor, copper tubing, lockable and digital thermostat
- hardware switches external wire cable pvc conduit 2 lights LED with light cover
- standard maintenance spare part set for 3 years
- shipping to the Mili Atoll
- custom clearance

Services to be provided by the Ministry of Works, Utilities and Infrastructure pursuant to the Project Cooperation Agreement with UNOPS:

- installation of 100 sets at selected households at Mili Atoll
- training of at least 15 individuals for basic maintenance at Mili Atoll (3 days)

Detailed definition of tasks will be included in the Grant Agreement between UNOPS and RMI Government.

UNOPS Process and Methodology

The present project will be implemented by UNOPS in close collaboration with the Government of the Marshall Islands. Based on the identified programmatic needs of the Government of the Republic of the Marshall Islands, UNOPS in consultation with the Ministry of Works, Utilities and Infrastructure and the local government has jointly developed this project proposal to help reduce the hardship and ensure food security for local households of Mili Atolls. Local communities will work together with the local Government to identify the households to receive the solar powered chest freezers and trainees. The communities will also support the Ministry of Works, Utilities and Infrastructure during the installation and training process to ensure local ownership of the project outputs. Improving food quality and safety is one of Marshall Islands' development priorities, which is in line with UNOPS' expertise and experience of supporting livelihoods.

All goods will be procured and delivered in accordance with [UNOPS procurement rules and regulations](#). Upon signing of the UN2UN agreement with UNOSSC determining the final quantities, UNOPS will conduct the procurement process as per the [UNOPS procurement rules and regulations and policies](#): The procurement process is based on the following practices:

1. **Final Requirements:** The final requirements are captured in this document.
2. **Issuance of Solicitation Document:** Once the specifications and delivery requirements have been finalized, UNOPS will start drafting the solicitation document for the procurement of the agreed goods and services.
3. **Receipt and opening:** as detailed in [UNOPS Procurement Manual](#).
4. **Evaluation process:** as detailed in the UNOPS Procurement Manual.
5. **Selection and award:** as detailed in the Manual. The selected supplier is required to have a presence (or agent) in RMI to ensure after sales and warranty services.
6. **Contracting:** Once the suppliers are selected, UNOPS will enter into a legally binding contract with the awarded supplier, to define the scope of the product to be procured, the quantity to procure, unit price (if applicable), the period covered, condition to be fulfilled, including the UNOPS general conditions of contract, terms of delivery and payment. UNOPS's standard contract will be used and UNOPS will administer the contract to ensure that suppliers meet their obligations as efficiently as possible, delivering the business and operational outputs required from the contract and mitigating attendant risks.
7. **Delivery of goods: The goods will be delivered to Mili Atoll port and to the address provided by the Government Partner. The Government of the Mili Atoll will get necessary custom duty waiver and other clearances from the local authorities as required for the custom clearance.** UNOPS will make good faith efforts to minimize delays and disruptions. UNOPS will follow the performance of the supplier to ensure that a quality product, in the right quantity, is delivered on time and within the budget. While the aim is to procure 100 chest freezers the actual costs, and maximum number of chest freezers to be procured, can only be established upon submission of qualified bids. Should the overall costs for the procurement of 100 chest freezers exceed the available project amount, UNOPS will agree with UNOSSC on an amended scope. Various requirements will be built into the standard contracts and the degree to which the supplier fulfils these requirements will be used to measure the achievement of performance indicators in order to evaluate the ongoing performance of the contract (e.g. quality standards, delivery times, inspections, milestone dates, etc.). UNOPS will monitor progress on manufacturing timelines, shipment, delivery and receipt of goods as well as installations.
8. **Final verification:** UNOPS will verify the correct delivery, installation and training provided as detailed in the specification with a verification mission to Mili Atoll.

Ministry of Works, Utilities and Infrastructure

Already in the concept development stage, the requesting Government Partner (as in the Member of Parliament, Mili Atoll and the Mayor, Mili Atoll Local Government) has been envisioning a role for the Ministry of Works, Utilities and Infrastructure in this project. As stated in the "Government contribution" section of the original concept note, the partner continues to consider the added value of involving the Ministry of Works, Utilities and Infrastructure in this project, which is also reflected in this current project proposal, and is to be presented to the funding partner - India - Un Development Partnerships Fund through UNOSSC.

The Ministry of Works, Utilities and Infrastructure (MoWIU), is to provide the installation of the solar panels and chest freezers, as well as associated work, such as cabling to ensure the setup and functioning of the system. In addition, MoWIU will provide training for basic maintenance to selected individuals of the Mili Atoll. This project will benefit from the involvement of MoWIU, as the Ministry is familiar with the circumstances and realities of remote island atolls, which will help to successfully execute the works. Being involved in the project implementation also allows MoWIU to provide high level quality of maintenance and remotely support the trained individuals responsible for maintenance on Mili Atolls. Their engagement and commitment will ensure national ownership of the project and sustainability.

The present project will include four main components, namely procurement, shipment, installation and training. UNOPS will be responsible for procurement and shipment of the goods, and will monitor the project activities. Installation of goods and training of selected members of the community for basic maintenance tasks will be carried-out by the Ministry of Works, Utilities and Infrastructure, pursuant to the Project Cooperation Agreement between UNOPS and the Ministry of Works. After the installation and training have been completed, UNOPS will conduct a mission to Mili Atolls to verify project outputs, and provide UNOSSC with a final report.

Warranties

UNOPS will pass on to the Mili Atoll Government any warranties offered by the manufacturer or suppliers used by UNOPS to procure the required supplies.

Reporting:

- Narrative Reporting is expected every 6 months for a project of this size (below \$1 million).
- Quarterly progress updates of 2-3 bullet points will be emailed to UNOSSC every quarter.
- Quarterly interim financial reports are to be submitted within one month of the end date of the quarter through the PDR modality.

Monitoring

Monitoring will also be done by nominated Indian representatives from the Honorary Consulate in RMI or Indian Embassy that is concurrently accredited to RMI (Reference: India-UN Fund guidelines).

Quality Management

The project's quality management strategy will center around ensuring that the equipment is delivered on time as per the defined schedule, and to the required and pre-agreed UNOPS quality standards. UNOPS will conduct the necessary inspections to assure the agreed quality standards are met. UNOPS will be responsible for the overall quality assurance to ensure the delivery and installation of products is done according to predefined standards.

Information Sharing & Communications

In accordance with UNOPS' policy on transparency, information about the project and all Purchase Orders raised will be published on the UNOPS website <http://data.unops.org> in line with the International Aid Transparency Initiative standards and commitments.

In addition, UNOPS will keep the partners fully informed of the project progress, and organize joint visits to the sites.

In the communications and visibility activities, all efforts will be made to acknowledge the contribution from the Government of India on appropriate occasions. For any major event organized by the project, arrangements will be made to ensure the participation of the Embassy of India in the country at the highest level possible. The Embassy will be kept regularly informed regarding the progress of the project. The India-UN Development Partnership Fund will be given credit, and its logo, the Government of India logo and UNOSSC logo will be displayed at the site, and in all printed materials produced under this project.

Risk Management Strategy

The project will follow UNOPS' risk and quality framework, as well as the engagement risk management process, which includes an initial engagement risk assessment, quarterly assurance reviews, and uses tools for daily project level risk management and clear escalation criteria.

Possible risks of the project include delays in the delivery of procurement items on part of the suppliers, transportation delays and/or damages during shipping and transportation. UNOPS will try to mitigate such risks by undertaking market research and conducting a procurement process in order to identify other potential sources that will better ensure cost effectiveness and timely delivery. UNOPS will also consider vendors with Long Term Agreements (LTAs) for expedited procurement. The selection of households receiving solar powered chest freezers and the individuals, who will be trained may alienate other members of the community, who benefit less from the project. UNOPS will support the Government in establishing selection criteria that take into account marginalized parts of the community.

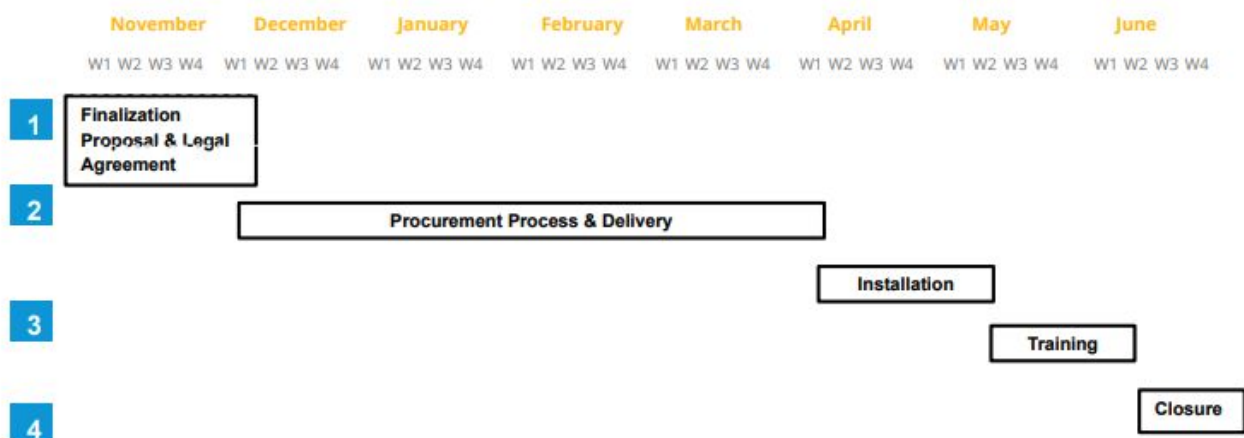
Matrix of Responsibilities

	UNOPS	MoWIU	Government
Establishment of selection criteria of households receiving solar powered chest freezers (if required)			X
Conduct procurement process	X	Y	Y
Contract Management: · delivery of goods · shipping to Mili Atoll	X		Y
Custom clearance and associated activities			X
Installation on Mili Atoll · purchase of materials · transport of goods and personnel · removal and disposal of any waste · minor works if required for installation of the solar panels		X	
Selection of Trainees			X
Conduct of the training		X	Y
Verification of completion on site	X	Y	Y

X – Responsible for Y – In cooperation with

5. TIMELINE

The project is expected to be implemented in a period of seven months with an estimated start date on 1st April 2020. Individual project phases will take place as outlined in the graphic below.



6. GOVERNANCE

In partnership with the Government, UNOPS will manage the procurement action through the Thailand Operational Hub procurement unit based in Bangkok. The Thailand Operational Hub (THOH) will be the point of contact for the delivery of the procurement action and services required.

The Procurement personnel, Project Manager and Pacific Liaison Manager will work directly with suppliers and contractors to oversee the delivery of the Chest Freezers, and will keep the beneficiary and client informed of the progress.

As UNOPS is ISO 9001 accredited and undertakes all project management activities in line with the highest quality standards, the Government and UNOSSC can expect UNOPS to provide qualified personnel to facilitate the project implementation.

UNOPS, will be responsible for the quality, and timely handing over of project deliverables in line with the agreed project implementation schedule subject to timely availability of funding and timely availability of NOCs and clearances by the Government.

The Project Steering Committee

The Project Steering Committee will be responsible for business issues associated with the project to ensure the delivery of the project outputs and the attainment of project outcomes. The committee will consist of nominated Indian representatives from the Honorary Consulate in RMI/Indian Embassy concurrently accredited to RMI, the representatives from the Ministry of Works, Utilities and Infrastructure and the representatives of the Government of the Marshall Islands. UNOPS will be the executive. The committee will hold meetings virtually and through submission of written inputs. The activities of the Project Committee will include monitoring of the overall project implementation, reporting on progress, issues, challenges, capturing lessons learned and making recommendations, approving work plans, and contributing to partnerships development for the implementation of the project. The Project Steering Committee will meet on a quarterly basis.

7. BUDGET

WP	Amount (USD)	Assumptions
Procurement of 100 items	597,400	Total value of items, transportation and custom clearance
Training and installation	22,000	
Verification mission	4,000	1 person for 3 days
Project support	26,639	Includes the local/central support cost and the charge of the procurement process review/acceptance committee
Total Programmable Budget	650,039	
UNOPS management fee 6.4%	41,603	
UNDP/ UNOSSC GMS 3%	20,749	
Total Project Cost	712,391	

8. WHY UNOPS

With more than 30 years of specialized experience, UNOPS is a central procurement resource in the United Nations system. In its development work, UNOPS implements sustainable solutions in multiple challenging contexts such as humanitarian relief, peace-building and peace-keeping operations as well as in support of developing economies across the world. Even if operating in some of the world's most difficult environments, UNOPS is firmly committed to sustainable development and focuses, within procurement and all other areas of its mandate, on sustainability in its contributions to the results of partners, with due consideration of the local context and partner needs. UNOPS expands the capacity of the UN by providing world-class sustainable procurement services to the UN entities, IFI- financed projects (including the World Bank and multilateral regional development banks), governments and other public and private sector partners. Clients choose to draw on UNOPS procurement services especially due to our speed, reliability, integrity and transparency. UNOPS lives up to the highest standards of public procurement and is perceived as an honest and neutral agent. Finally, UNOPS is acknowledged for its client service orientation, being receptive to clients' needs while actively helping them to find the solutions that best solve their problems.

UNOPS, in its management of public funds, complies with public procurement principles and deliver its services according to the highest standards of professionalism to ensure that value for money, ethics, sustainability, efficiency as well as transparency and accountability are provided to partners and clients. By applying these principles in the procurement process, UNOPS ensures effective and purposeful implementation of its activities, including its commitment to the promotion of sustainable development, by avoiding wastage of resources, producing the most appropriate solutions at all times, and addressing the needs of the organization and its partners.

UNOPS THOH
208 Wireless Road Building 10330
Bangkok
Thailand

 [/unops.org](https://www.facebook.com/unops.org)

 [/company/unops](https://www.linkedin.com/company/unops)

 [/unops](https://twitter.com/unops)

 [/unops_official](https://www.instagram.com/unops_official)