



DEPARTMENT OF  
OPERATIONAL  
SUPPORT



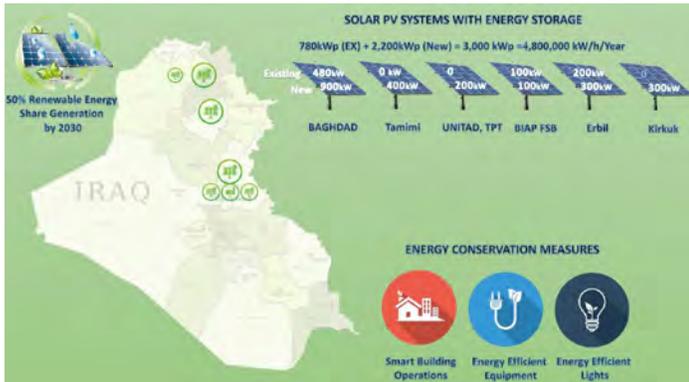
# ENVIRONMENTAL GOOD PRACTICE



2023 Annual Collection of Case Studies  
from Field Missions

# ENERGY

## UNAMI'S JOURNEY TOWARDS ENVIRONMENTAL SUSTAINABILITY



UNAMI has initiated a program that addresses various pillars, including energy. The cornerstone of this ambitious initiative lies in the deployment of turnkey renewable systems, integrating multiple energy sources. With a total capacity of 2.2 MWp, these systems will complement the existing 0.8 MWp system, generating 5 GWh of clean energy annually. Harnessing the power of the sun not only reduces UNAMI's reliance on traditional energy sources but also sets an example for the region, demonstrating the feasibility and potential of renewable energy. Embracing the microgrid technology, UNAMI is set to install energy storage solutions that will render diesel generators obsolete as a backup power source. The implementation of energy conservation measures further supplements UNAMI's sustainable energy management efforts. These measures involve optimizing energy usage across facilities, adopting energy-efficient practices, and fostering a culture of environmental awareness among staff members. The program also has the potential for excess energy penetration into the local grid. This forward-thinking approach strengthens the local energy infrastructure and fosters a symbiotic relationship with the surrounding community.

## UNIFIL INSTALLS A 325kWp SOLAR PLANT IN NAQOURA, HQ



With the objective of achieving a sustainable transition to renewable energy and reduce the carbon emissions footprint, UNIFIL installed in FY 22-23 a total of 520 kWp of Solar PV systems across the area of operations. One solar PV system of 325 kWp was installed in Naqoura HQ, which is expected to bring numerous benefits to the environment and to reduce the dependency in fossil fuel. It is estimated that this solar plant will produce around 502,465 kWh/year, resulting in more than 150,000 L/year of savings in fuel and more than 415 tons savings in CO2 emissions. In FY 22-23 alone, UNIFIL produced more than 1 million kWh in solar energy, representing an increase in 60% production and reduced CO2 emissions in more than 830 tones. UNIFIL will continue to contribute to a cleaner and sustainable future by installing more renewable energy systems in the upcoming years.

## ADDITIONAL SOLAR PANELS TO POWER UNAMA

UNAMA has made headway in reducing its dependence on fossil fuel and limiting its environmental footprint in Afghanistan, with about 12% of its energy needs currently sourced from solar panels dotting UNAMA compounds across the country. A total of 960 kWp solar photovoltaic systems installed in 2023 at UNAMA offices

in Kabul and provinces generate up to 1.7 GWh of renewable electricity annually. This will help the Mission reduce approximately 1,387 tons of greenhouse gas emissions. Efforts are underway to increase the renewable energy production capacity, with a plan to deploy an additional 310kWp solar PV system during the 2024/25 fiscal year.



## UNDOF CONTINUES TO REDUCE ITS CARBON FOOTPRINT THROUGH PV SYSTEMS



UNDOF is continuing its work in reducing its carbon footprint from fossil fuel power generation and in reducing its energy consumption. Since first installing PV systems in 2020 and completing the first project at Camp Ziouani as a pilot project in March 2021, UNDOF has installed 4 more PV systems, with an additional 2 more planned for 2023/24. The mission plans to have fully operational PV systems, hybrid configuration, off-grid, and 50 Kw systems in almost all the positions/camps by June 2024. To ensure that the new

systems are working efficiently, UNDOF also installed FRIM sensors in Camp Faouar as a pilot project in July 2023. By June 2024, following an expected success of the pilot project, FRIM sensors will be installed in all the other positions and camps, to collect more energy related data. Finally, to cover any potential electrical outage, the UNDOF Engineering Section has created a technical team dedicated to the periodic maintenance of the PV systems. Even now, the mission is benefiting from a reduction of fuel consumption in all the positions and camps.

## WATER AND WASTEWATER

### UNIFIL LAUNCHES A “WATER SAVING” COMPETITION



To promote the sustainable use of freshwater sources in the arid landscape of Lebanon, UNIFIL launched the "Water Saving" environmental competition that ran from April to June 2023, covering the mission's boreholes in various locations in the South Litani River area. The initiative was supported by Senior Leadership inviting all contingents to participate. After the participants implemented various measures to improve the efficiency of water (shorter showers, immediate reporting and fixing leaks, use of water-saving sanitary fixtures such as dual flush toilets) and by promoting the use of alternative water sources (rainwater harvesting, reuse of tertiary treated wastewater, to irrigate non-food crops), the data for each borehole was examined at the end of June 2023

and results indicate that the total water abstraction dropped by 8,500 m<sup>3</sup> or a decrease of 25% compared to the same period of 2022 in six boreholes. The exercise helped contingents to better understand the importance of preserving the natural resources of the host nation, and to understand how their water supply network works, as well as when to report incidents of possible water wastage. All contingents participated in the competition and six were presented a certificate of appreciation delivered by the Chief of Operations and Resource Management (ORM). These contingents were the Nepalese Battalion (NEPBATT), Malaysian Battalion (MalBatt), Italian Battalion (Italbatt), Ghanaian Battalion (Ghabatt), Chinese Battalion (Chinbatt) and Sector West Head Quarters led by Italy.

## INSTALLATION OF 45 TAP WATER SENSORS IN MHQ PRISTINA AND RHQ MITROVICA



UNMIK has already taken several proactive measures to reduce water consumption, including rainwater harvesting, ongoing staff awareness initiatives, reduced irrigation duration, and the conversion of toilets to dual-flush systems. Additionally, this year, UNMIK installed 45 tap water sensors in MHQ Pristina and RHQ Mitrovica with the primary objective of further mitigating water consumption and preventing potential leakages. The successful implementation of this project resulted in a notable 10% reduction in water usage throughout UNMIK.

Looking ahead, there are plans to extend this initiative to the Peja Office and UNOB, where the installation of water sensor taps will continue to advance UNMIK's commitment to sustainable water management.

## A WELL-OPERATED WASTEWATER SYSTEM IN IPAC CAMP BOUAR, MINUSCA



MINUSCA's IPAC Camp in Bouar provides a good example of a well-operated wastewater system that not only minimizes adverse impacts to the camp community but enhances its living environment. The sewage flows from camps to septic tanks, then it flows to two wastewater treatment plants, of a Membrane Bioreactor (MBR) module. After treatment, the treated wastewater is sent to the pre-loader concrete tank. To facilitate intense membrane cleaning, two concrete tanks have been constructed. Off-gas from the pre-loader is redirected into the ground to minimize odors and the WWTPs are hidden from view behind banana plantings. The treated wastewater is then used for vehicle washing and landscape irrigation.

## UNISFA PARTNERS WITH UNICEF ON WASTEWATER TREATMENT AND POSITIVE LEGACY

In a couple of locations, missions have started working closely with their UNICEF counterparts to assess locally appropriate and cost-effective solutions for wastewater treatment that meets environmental standards and contribute to leaving a positive legacy. In Abyei, UNICEF South-Sudan and UNISFA are exploring the potential for the establishment of a built-in-place facility close to Abyei Camp, where UNISFA already transports and treats sewerage sludge from hospitals, schools, prisons, etc. If extensive cost-benefit analyses indicate that built-in-place facilities in these locations are more cost-efficient and meet environmental standards, this approach could be a fitting alternative to containerized wastewater treatment plants while also contributing to a positive legacy for the host communities. Financial support for the community share of such infrastructure would be mobilized under the lead of UNICEF, while the mission would make an initial contribution to new infrastructure and pay monthly utility bills if the plant is run and operated by the community.



## SOLID WASTE

### MINUSCA USES HYDRAFORM BRICK-MAKING MACHINES TO BUILD ACCOMMODATION USING LOCAL RESOURCES



MINUSCA has adopted the Hydraform block technology to manufacture interlocking blocks using local materials. The blocks produced are used to address accommodation deficiencies and in the construction of perimeter walls. Compared to conventional prefabricated structures, Hydraform block buildings are more sturdy and better insulated, reducing noise pollution and contributing to thermal efficiency, thus reducing energy demand, and leading to fuel savings. The technology is cost-effective due to the use of local materials and less quantities of materials required. Maintenance costs are equally low during the lifecycle of the buildings. Furthermore, the project has contributed significantly to building the capacity of the local youth. In some locations, labour force is recruited from the Community Violence Reduction (CVR) program to enhance the mission's mandate by increasing social cohesion and contributing to peacekeeping. Overall, the buildings contribute to the positive legacy aspect by increasing infrastructure capacity for the communities upon mission closure.

## PROJECT MONUSCO ZERO FIGHTS PLASTIC POLLUTION



Kinshasa, Democratic Republic of Congo produces approx. 10,000 tonnes of solid waste per day; of which a sizeable proportion of plastic waste ends up in the Congo River. In an effort to reduce the impact of the disposal of single use plastics in the host nation and establish a viable anchor-by-example economically feasible reuse option, MONUSCO identified and worked with 2 local vendors to pilot a project to recycle plastic waste in Kinshasa through the production of plastic bricks. The project aimed to produce plastic bricks from plastic waste that would otherwise block the waterways. These bricks which are lighter, effective at insulation and equally as durable as traditional bricks have since been used to lay pathways (> 2250 square meters) within the MONUSCO premises in Kinshasa. The project has enhanced awareness among the local community and empowered contractors to collect plastic waste from river streams. It has also provided employment opportunities through the collection and transportation of the plastic bottles, the washing, pelletizing and moulding process as well as the masonry aspect of bricklaying. Key to the project's success was the implementation of safe protocols such as correct use of PPE to protect workers against fumes and efficient plastic melting, extrusion and compression moulding to form a dense hard high quality and durable brick when cooled.

More efforts are required to markedly reduce the use of plastics, especially single-use plastic bottles and alternatively promote the use of biodegradable materials that can be composted.

## UNVMC CAMPAIGNS TO REDUCE WASTE



Considering the significant impact of solid waste on the planet and in alignment with the environmental strategy of the Mission, two campaigns were conducted with a primary focus on reducing solid waste generation. One campaign took place on World Water Day, during which stainless steel water bottles were distributed among the personnel. This initiative aimed to raise awareness about the importance of discontinuing the use of single-use plastic bottles. The second campaign occurred on World Environment Day, where Mission staff received cloth bags. This effort aimed to enhance awareness regarding the reduction of plastic bag consumption during shopping, thereby contributing to environmental preservation and the fight against #PlasticPollution. Both campaigns were strategically designed to foster a decrease in solid waste production and to instill consciousness among the personnel regarding their daily habits.

## UNSOS IMPLEMENTS LARGE INDUSTRIAL INCINERATORS WITH AN ADVANCED POLLUTION CONTROL SYSTEM IN ADEN ABDULLE INTERNATIONAL AIRPORT

In Mogadishu, UNSOS collects 6 tons of waste daily from its managed and supported camps, accounting for a total population of about 3,000 people. Considering the camps location proximate to the Aden Abdulle International Airport (AAIA) and the significant volume of waste, UNSOS was faced with a challenge to minimize risks to people, societies, and ecosystems – in alignment with the DOS Environmental Strategy - and manage aviation safety considerations resulting from birds scavenging on waste. To tackle the issue, the mission opted for introducing incineration technology. UNSOS installed an automated industrial incinerator with a load rate of 500 kg/hr. The twin-chamber incinerator is equipped with a heat exchanger and a pollution control system that uses lime powder to neutralize the acidic components of emissions as well as ceramic filters to remove particulates. With incineration, the mission is effectively reducing potential environmental impacts by avoiding greenhouse gas emissions and other risks derived from waste dumping, landfilling, or open burning. It also minimizes risks associated with aviation safety, with a significant reduction in the number of birds surrounding the area.

## WIDER IMPACT

### UNSMIL'S COASTAL BEACH CLEAN-UP SUCCESS



In the heart of Libya's coastal region, UNSMIL spearheaded a transformative environmental initiative – a quarterly beach cleaning campaign. Gathering on a bright day in July 2023, UNSMIL's international and national staff members, along with the United Nations Guard Unit (UNGU), came together with a shared purpose: "Keep the Environment Clean." Armed with determination and a passion for preserving nature's beauty, they set out to restore the pristine state of the shoreline. As they combed the beach, they diligently collected plastic and wood waste that had washed ashore, posing a threat to the delicate marine ecosystem. Through their collective efforts, an impressive 1500 kg of debris were removed in just one day. The initiative showcased UNSMIL's commitment to safeguarding nature and fostering a cleaner, healthier ecosystem for generations to come.

## UNAMA CONDUCTS ENVIRONMENTAL SCREENING ON 4 MAJOR PROJECTS



UNAMA has recently conducted environmental screenings for four construction projects in the compounds of Gardez, Kabul, and Mazar. The environmental screenings included various aspects of construction, such as land preparation, excavation, transportation, construction, and waste disposal. To ensure that the environmental aspects of the project were addressed appropriately, the Mission created an extensive environmental monitoring plan. As part of this plan, 25 construction personnel from three contractors were trained in sustainable construction waste management. The training covered various personnel, including site construction supervisors, architects, HSE officers, and electrical engineers. The training provided crucial knowledge in minimizing negative impacts and maximizing positive impacts through proper waste management. Construction supervisors were trained to identify different types of waste generated during construction and how to properly reuse and dispose of them. They were also educated on the importance of reducing waste generation and maximizing resource efficiency. Thanks to UNAMA's waste management training for construction supervisors, construction projects are now being executed safely, sustainably, and with environmental responsibility.

## PEACEKEEPERS IN UNMISS ENGAGE THE LOCAL COMMUNITY IN ENVIRONMENTAL INITIATIVES



Rwandan peacekeepers serving under the UNMISS in partnership with Juba City Council leadership, the South Sudan Waste Management Union, Green Youth Empowerment, Rwandan Community in South Sudan and Society for Family Health in South Sudan, conducted a community work called "Umuganda" during which they planted trees, provided medical services focusing on anti-malaria campaign and cleaned areas of Muniki Block Council, Juba City. Around 800 trees were planted in different areas of Juba, and a medical team provided about 200 residents free medical services by testing and treating them for Malaria. In Western Bahr El Ghazal, Chinese peacekeepers shared their knowledge of small-scale kitchen gardens composting with local authorities.

Alongside showcasing their garden produce as well as tasty meals prepared from them, peacekeepers also shared easy-to-emulate lessons on waste segregation and management. Organizing these initiatives reflects a strong positive commitment of UNMISS towards a greener community for South Sudan.

our operations and environmental compliance management towards greater clarity and agility, as it improves collaboration.



## UNMISS DEVELOPS AN ENVIRONMENTAL COMPLIANCE TOOL



The Environment and Occupational Safety and Health (Env&OSH) Unit developed an Environmental Compliance App for environmental inspections and training. This tool monitors the progress, resolutions, and recommendations of environmental issues in UNMISS which are identified during environmental inspections. Details like location, pictures, and recommendations are recorded into this app to keep track of environmental issues being implemented. The app is accessible to the Field Engineers and Field Administrative Officers to track issues raised and monitor environmental progress in their field locations. For environmental training events, the Env&OSH unit logs and tracks the number of personnel, gender and category of personnel attending each induction training session and field training. The Env&OSH Compliance App is a leading platform to maximize environmental performance in our Mission and move

## A NEW 'SMART CAMP' FOR PEACEKEEPERS IN ABYEI



On 6 March, an innovative new “Smart Camp” for peacekeepers in Abyei was inaugurated by USG Atul Khare. Designed to enhance the protection and welfare of peacekeepers and to improve environmental performance, the Dokura Smart Camp was constructed by the UNISFA with support from DOS. Smart camp status was achieved by incorporating the “Internet of Things” and introducing new technologies to reduce the resource use of the camp and improve security. Sensors automate the operation of camp infrastructure and the reporting of resource use, including fuel, energy, and water – all of which can be remotely monitored using a mobile app or dashboard. This functionality is intended to enable rapid troubleshooting, enhance responsiveness, and promote efficiency, minimizing the environmental impact of the camp. A digital twin, or remote replica, of the system facilitates rapid global technical support and a further layer of smart resilience. The realization of the camp and future innovations – and the data, learning, and feedback these will produce – will not only benefit the current and future occupants but also provides a blueprint for similar innovation across peacekeeping missions.

## UNSOS SUPPORTS ATMIS IN ADOPTING AN ACTION PLAN ON ENVIRONMENTAL MANAGEMENT

With the support of UNSOS, ATMIS adopted an action plan that will see the Mission further integrate environmental issues in its operations in Somalia. The action plan was adopted during a workshop organised by ATMIS and UNSOS in Mogadishu and was attended by environment focal points from the military and police components. The document sets out a raft of measures ATMIS personnel will apply in their day-to-day activities to contribute to environmental protection, especially when utilizing precious resources such as water, food and energy. Speaking at the workshop, the Special Representative of the Chairperson of the African Union Commission (SRCC) for Somalia, Ambassador Mohamed El-Amine Souef, said the action plan will strictly be applied when handing over Forward Operating Bases (FOB) to the Federal Government of Somalia to minimize environmental damage ahead of the expiry of the ATMIS mandate in 2024. The decision, he said, will fulfil the commitment made by ATMIS and UNSOS during the 23rd session of the Assembly of the International Renewable Energy Agency held in Abu Dhabi at the beginning of the year. ATMIS Deputy Force Commander in charge of Support and Logistics, Maj. Gen. Peter Kimani Muteti, noted that through environmental protection, ATMIS personnel will help avert climate change-related conflicts in Somalia.

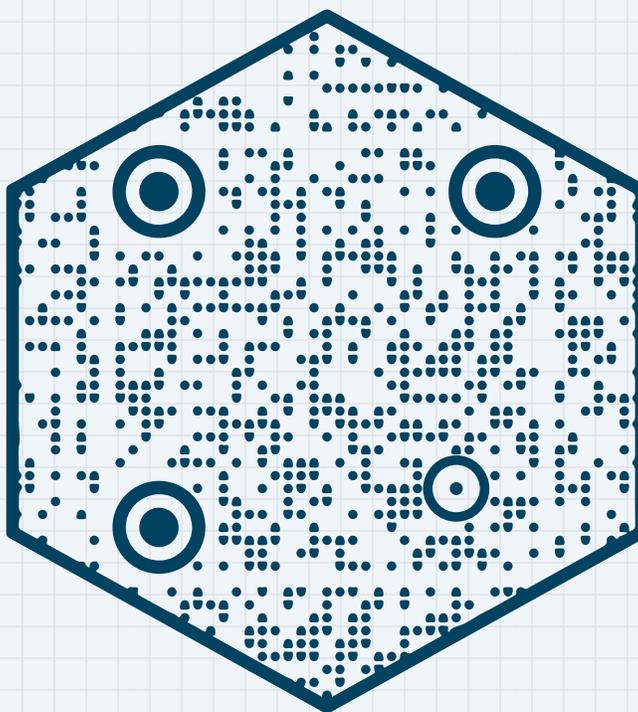


## The Way Forward: Environment Strategy 2023-2030 – Responsibility, Ambition, Legacy

DOS continues to support field missions in environmental management, resulting in tangible progress in a number of areas from wastewater risk management to energy efficiency since the start of the implementation of the Strategy in 2017. Following the mandate from the General Assembly to develop, in consultation with Member States, a way forward to continue efforts in this area beyond June 2023, DOS has led a consultation process with field missions and UN Member States in the past year. Drawing on input from these consultations, a proposed way forward for the Environment Strategy was developed, covering the period until 2030 and putting forward three key themes: responsibility, ambition, and legacy. It introduces the idea of mission-level targets in key areas that are agreed with Member States through the budgetary committees. The way forward for the Environment Strategy is anticipated to be finalised by December 2023, based on feedback received.



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<https://operationalsupport.un.org/en/environment>

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