Safer Salvage Operations Project (Award ID: 00143160)

FSO Safer Salvage Operation Project (SSOP)

Final Report

22 May 2022 to 31 December 2025



Floating Storage and Offloading (FSO) Safer at mooring (2019)

PROJECT DETAILS

Country	**Yemen**	
Donor (s)	**Multiple**	
Project details	**Project title:**	**FSO Safer Salvage Operation Project (SSOP)**
	Project ID	00143160
	General CPD Outcomes	Area 3: Support confidence-building measures and national and local peace processes.
	Overall implementation period	22 May 2022 to June 2026
	Current Reporting Period	22/05/2022 to 31/12/2025
	Total Project Budget	US$169m (Phase 1 & 2)[1]
	Total Contribution Received to date	USD $131,266,052
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Responsible Parties	N/A.	

[1] The estimated budget for phase I (US$141m) and phase II (28m) was revised to reflect the sharp increase of the VLCCs, confirmation of the need for a CALM Buoy option and additional engineering work for phase II as well the need for specialist expertise of consultancy in the maritime fields, the project has experienced after commencing on the preparatory phase.

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ACRONYMS

CALM	Catenary Anchorage Leg Mooring
DFA	De Facto Authority
DOP	Detailed Operational Plan
FSO	Floating Storage and Offloading
IMO	International Maritime Organization
IRG	Internationally Recognized Government
RC/HC	Resident Coordinator / Humanitarian Coordinator
RCO	Resident Coordinator's Office
STS	Ship to Ship
SSOP	Safer Salvage Operation Project
TWG	Technical Working Group
UNDP	United Nations Development Programme
UNRC	United Nations Resident Coordinator
VLCC	Very Large Crude Carrier
WFP	World Food Programme
TOT	Training of Trainers

1. Executive Summary

After two years of political groundwork, fundraising and project development, a United Nations-led operation has prevented a massive oil spill in the Red Sea from the decaying FSO Safer supertanker. Between 25 July and 11 August 2023, SMIT Salvage, a subsidiary of the leading marine service provider Boskalis pumped the oil from the 47-year-old Safer to the safe replacement vessel MOST Yemen. SMIT was contracted by the UN Development Programme, which is implementing the project. The UN is grateful to member states, the private sector and the global public for providing more than $130 million in addition to a bridging loan from the UNOCHA Central Emergency Response Fund (CERF) to make the oil transfer possible. UNDP reimbursed the CERF allocation to OCHA at the beginning of 2024 through internal resources. The FSO Safer still poses a residual environmental threat. The UN counts on additional generous support to close the budget gap.

Given the complexity of the project and the requirement for multiple technical streams, UNDP identified and contracted a team of world-leading experts in maritime law, salvage operations, insurance brokering, marine management consultancy, oil spill response, marine engineers, naval architects, chemists, and surveyors, to support the FSO Salvage Operation project management team in the provision of technical support. Some of these include:

- A Senior Marine Management Consultant who serves as project technical advisor to UNDP.
- Marine Management Consultancy Firm (SafeSTS) that provides technical advisory support to the project on issues related to market survey, due diligence, development of the TOR for the salvage company, and development of the specifications for the replacement vessel i.e., Very Large Crude Carrier (VLCC).
- SMIT Salvage Company – a subsidiary of Boskalis, Netherlands – aka "the salvor".
- A Maritime Legal Firm (Ince, and later Clyde & Co) to provide legal advice and opinion.
- An insurance broker (Howden, UK), to define the scope of the insurance coverage required and assist UNDP in identifying the right insurance underwriters for the new VLCC and the entire operation.

Contingency planning towards oil spill/pollution preparedness and response was developed though with the contractual engagement of two oil spill experts who continued to provide technical advice to the project since its inception. Additionally, requisite preparatory work leading up to an intensive market survey to identify a suitable long-term replacement for the FSO Safer was undertaken during this reporting period. On March 9 2023, UNDP announced the successful contractual arrangement with the international shipping enterprise, EURONAV, that secured the purchase of a VLCC named NAUTICA as the suitable replacement for the FSO Safer. By May 2023, the contracted salvor SMIT Salvage BV was mobilized to the worksite in the Ras Issa to commence the inspection and stabilization of the FSO Safer in preparation for the ship-to-ship pumping of the oil.

In June preparations for the transfer of the cargo of the FSO Safer reached a resultant stage with the finalization of negotiations with the insurance consortium led by the UK-based Howden Group.

Major challenges encountered, during the project preparatory stage, including the high volatility of pricing in the shipping industry due to the ongoing crisis in Ukraine and related global energy crisis. This resulted in a surge in prices for a suitable VLCC that significantly overshot the budget estimate, thus resulting in a significant shortfall in project liquidity and consequent changes in planned activity timelines. The difficulties encountered in procuring/leasing a suitable VLCC as a replacement for the decaying FSO Safer resulted in severe knock-on effects on other planned activities and results for the period.

On 30 May 2023, the contracted Salvor SMIT BV. arrived on location and began the initial preparation for the STS operation by stabilizing the FSO Safer in preparation for the removal of the oil. The oil pumping of more than 1.1 million barrels began on 25 July and was successfully completed on 11 August 2023. The SMIT team subsequently continued the washing of the FSO Safer tanks, casting off the Moored Oil Storage Tanker (MOST) Yemen off from the FSO Safer to moor a safe distance away to ensure the vessel's stability.

Key lessons learned include the need for pragmatic flexibility in project design and implementation of an emergency operation with very high political, security, and financial risks such as the SSOP. Mitigation measures taken during this reporting period included effective communication and advocacy with donors and external parties to provide candid updates about challenges encountered and the consequent need to rephase critical activities.

UNDP and the Office of the UN Resident Coordinator continued to engage in rigorous resource mobilization efforts to secure additional funding to ensure the undisrupted implementation of planned activities. As of the end of June 2024, over USD 134 million in pledges was mobilized from donors, private sector and foundations against the estimated costs for the two phases of USD 169 million. In addition, Central Emergency Response Fund (CERF) of OCHA has provided a loan of USD 20 million to ensure cash availability to allow UNDP to enter into contractual arrangements with different service providers and to avoid any disruption of the salvage operations. It is worth noting that the CERF reimbursable disbursement/bridging loan was returned to OCHA by of the beginning of 2024 and was paid through internal UNDP resources. Moreover, the Government of Egypt has provided a waiver with an estimated amount of $ USD 153,000 for the project vessels passage fees through Suez Canal.

The key achievement during this reporting period is related to the ship-to-ship transfer of oil that was conducted on 11 August 2023 with 1.1 million barrels of oil pumped into the replacement tanker MT-Yemen, eliminating the risk posed by an oil spill from the FSO SAFER.

2. Background

The Floating Storage and Offloading (FSO) "Safer" is moored approximately 8 kilometers off the coast of Yemen and 50 kilometers northeast of the port of Hodeida. Constructed in 1976 as an oil tanker and converted in 1987 to be a floating storage facility, the vessel is single- hulled, 362 meters in length, and is believed to be laden with 1.148 million barrels of light crude oil. FSO Safer has been under the de facto authorities (DFA) control areas since March 2015. Production and offloading operations were suspended due to the conflict, and no maintenance operations had been undertaken for seven years. The FSO was uninsurable, with an expired certificate of seaworthiness. The age of FSO Safer and lack of maintenance have degraded its structural integrity. The vessel was at risk of spilling oil due to leakages, an explosion from the accumulation of volatile explosion gases, or a strike from a floating sea mine. A significant spill could occur at any time, discharging up to 1,148 million barrels of its cargo of oil along Yemen's Red Sea coastline and towards its neighboring countries. Heavy contamination and pollution could extend as far as the Bab-El-Mandab strait, with some oil passing beyond the Gulf of Aden.

The FSO Safer Salvage Operation Project (SSOP) was designed in 2022 to respond to the imminent threats and risks described above. It was designed as a two-phase approach. In the first phase, the UN will coordinate the ship-to-ship transfer of oil from the FSO Safer as soon as possible to address the immediate environmental and humanitarian threats. In the second phase, the UN will facilitate the installation of a replacement option for the FSO Safer. Based on extensive technical consultations and political engagement with Yemeni Government institutions, the UN has proposed a floating Catenary Anchorage Leg Mooring (CALM) Buoy, permanently attached to a Very Large Crude Carrier (VLCC) slightly modified to be an FSO as the optimal long-term solution in the Ras Issa environment. The CALM buoy with a permanently attached double-hull VLCC as FSO is considered the safest, fastest and most flexible option.

Successful implementation of Phase 1 activities greatly minimized the potential for a major oil spill from the FSO Safer and the associated environmental, socio-economic, and humanitarian consequences. Similarly, successful implementation of Phase 2 activities is expected to result to a suitable replacement for the FSO Safer. The results of this second phase will deliver the potential for economic and industrial dividends to benefit the Yemeni people and incentivize parties to reach agreement as part of a formal peace process in line with SDGs 8, 9 & 16.

The SSOP emergency phase implementation remained on track during this reporting period. Project documents, especially the work plan and budget were revised in consultation with relevant national authorities and key stakeholders, whilst implementing essential preparatory works required for the smooth take-off of planned activities. However, significant budgetary deficits experienced in the previous quarters persisted into this reporting period, due to the market conditions cited above and the slow trickling in of pledged contributions.

3. Resources

Donor	*Total pledges (USD)*	*Signed pledges or agreements (USD)*	*Agreements in process (USD)*	*Received* (USD)*
Emergency Phase				
Netherlands	20,000,000	20,000,000	0	20,000,000
Kingdom of Saudi Arabia	18,000,000	18,000,000	0	18,000,000
Germany	12,087,178	12,087,178	0	12,087,178
United States	10,000,000	10,000,000	0	10,000,000
United Kingdom	10,297,828	10,297,828	0	10,297,828
European Union******	5,997,126	3,036,600	0	3,036,600
Qatar	5,000,000	5,000,000	0	5,000,000
Government of Yemen (Global Environment Facility)**	5,000,000	4,566,210	0	4,073,645
Sweden	4,967,041	4,967,041	0	4,967,041
Norway	3,732,615	3,732,615	0	3,732,615
France	3,469,655	3,469,655	0	3,469,655
Denmark	3,072,394	3,072,394	0	3,072,394
Italy	3,276,315	3,276,315	0	3,276,315
Canada	2,826,666	2,826,666	0	2,826,666
Kuwait	2,000,000	2,000,000	0	2,000,000
Japan	1,000,000	1,000,000	0	1,000,000
Finland	1,004,016	1,004,016	0	1,004,016
Luxembourg	472,527	472,527	0	472,527
Switzerland	315,789	315,789	0	315,789
Greece	216,920	216,920	0	216,920
Republic of Korea	1,200,000	1,200,000	0	1,200,000
Cyprus	53,305	53,305	0	53,305
Malta	43,150	43,150	0	43,150
Egypt***	*153,000****		0	
International Association of Oil and Gas Producers (IOGP)	12,040,328	12,040,328	0	12,040,328
Trafigura Foundation	2,000,000	2,000,000	0	2,000,000
Hayel Saeed Anam & Co.****	1,200,000	1,200,000	0	1,200,000

Private Sector entity	1,101,322	1,101,322	0	1,095,290
Octavia and Calvalley	300,000	300,000	0	300,000
Leo Balmer Foundation	250,000	250,000	0	250,000
Yemen Humanitarian Fund	2,300,000	2,000,000		2,000,000
Crowdfunding Campaign	297,818	297,818	0	297,818
Total Emergency Phase	**133,674,993**	**129,827,677**	**0**	**129,821,645**
Phase II				
Japan	1,444,407	1,444,407	0	1,444,407
Total Phase II	**1,444,407**	**1,444,407**	**0**	**1,444,407**
Grand Total	**135,119,400**	**131,272,084**	**0**	**131,266,052**

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Total Pledges (signed and unsigned) (USD)	**135,119,400**
Received (USD)	**131,266,052**
Undisbursed Pledges (Pledged minus received)	**3,853,348**

As of Dec 2025

* AMOUNT REFLECTS THE OFFICIAL UNITED NATIONS EXCHANGE RATE THE DAY RECEIVED.
** GEF FUNDING ALLOCATED TO THE GOVERNMENT OF YEMEN.
*** IN KIND CONTRIBUTION OF SUEZ CANAL AUTHORITY - WAIVER OF SUEZ CANAL FEES FOR PROJECT VESSELS
**** FIRST PRIVATE SECTOR COMPANY TO PLEDGE.
***** discussions remain underway with the EU for the remaining USD 2.9 million

Additional resources

Due to the urgency of the operation, the Emergency Relief Coordinator extended an internal financing bridge facility of $20 million from the Central Emergency Response Fund (CERF) to UNDP. This helped provide much-needed liquidity that prevented further delays in the implementation of the operation, while the undisbursed pledges were being awaited and additional pledges raised.

At the beginning of 2024, the project reimbursed to OCHA the CERF disbursement of $20 million through UNDP internal resources.

4. Progress towards development results

Progress towards relevant Country Programme Document (CPD)

CPD Outcome 3: **By 2024, people in Yemen, especially women, adolescents, girls and those at risk of being left behind, become more resilient to economic shocks by increasing their income security and access to decent work.**

The SSOP has encouraged, to the extent possible, the active participation of Yemenis at various levels, including key political actors, the Internationally Recognized Government (IRG), the De-Facto Authorities (DFA) and Saudi-led Coalition (SLC) in the implementation of the emergency phase of the project. There have been several engagements involving DFA, IRG, UN entities in Yemen,

UN member states, non-governmental organizations, commercial companies, and private sector entities to find solutions to the FSO Safer situation. IRG acknowledged the common interest in preventing an oil spill and agreed that it would be an effective way forward to engage the DFA to find a solution. The consent of the SLC had also been obtained and assurances have been given that the area around the FSO Safer shall be designated a no-strike zone via the UN's normal deconfliction procedures.

The project's engagements and consultations with national structures during the reporting period included notably:

Consultations between the UN and the Internationally Recognized Government of Yemen (IRG) on the legal issues pertaining the ownership of the replacement vessel.

In the first week of March 2023 the former UNRC (ASG David Gressly) led a combined team of the UN-RCO and UNDP Project Management team to meet with senior representatives of the IRG in Aden. The team was led by the Minister of Legal Affairs & Human Rights of the Republic of Yemen, H.E. Ahmed Omar Mohammed Arman and officials of the Safer Exploration and Productions Operations Company (SEPOC). The series of meetings in Aden discussed the technical and legal concerns of the IRG regarding the replacement vessel's ownership. The week-long consultations included virtual meetings organized by the UN to allow for wider consultations between the legal team of the IRG and the UNDP legal team based in New York. Agreements were eventually reached by all parties on how to address the legal transfer of ownership of the vessel from UNDP to SEPOC as the ultimate owner of the replacement vessel.

Consultations with SAFER Emergency Committee (SEC) in Sanaa in March 2023.

Extensive and fruitful consultations led by the former UN-RC were organized by the project team in Sana'a to allow for in-person dialogue between representatives of the SMIT Salvage Company, UN-RCO, UNDP Project Management Team, and the leadership of the SEC. The week-long consultations which took place between March 11 – 17 included two days of technical workshop during which the Detailed Operational Plan (DOP) of the ship-to-ship transfer was presented to the SEC by the visiting SMIT team. Other technical clarifications included presentations on the national contingency plan and emergency preparedness by the Oil Spill consultants and UNDP project team.

Consultations with Emergency Response Committee (ERC) in Aden in March 2023

Extensive and fruitful consultations led by the former UNRC (ASG, David Gressly) were organized by the project team to allow for in-person dialogue between representatives of the SMIT Salvage Company, UNRCO, UNDP Project Management Team, and the leadership of the ERC in Aden. The consultations which took place between March 19 and 20 included a technical workshop during which the Detailed Operational Plan of the ship-to-ship transfer was presented to the ERC by SMIT Salvage Company. Other technical presentations included presentations by the Oil Spill consultants and UNDP.

4.1. Progress towards project outputs as outlined in approved project document

Project Output 1: Potential oil spill from the FSO Safer tanker is prevented		
Indicator	**Summary achievement**	**Status:**
1.1. Salvage assets mobilized and deployed to the FSO Safer site.	• On March 9, 2023, an agreement was reached with Euronav for the purchase of the NAUTICA – a VLCC - to serve as the replacement vessel to the FSO Safer. After weeks of dry-docking and modification in China, the NAUTICA set sail for Yemen via Djibouti in May 2023 where it was anchored off in Djibouti waiting for the requisite clearances and permits to sail into Yemeni waters. The vessel arrived in the STS location on 15 July 2023. The NAUTICA is managed by Euronav with a crew/subcontractor of approx. 21 pax. • On May 30 SMIT support vessel e.g., the MT Ndeavor, was mobilized to the worksite and moored alongside the decaying FSO Safer at the Ras Issa Peninsula off Yemen's Red Sea coast to begin the inspection and stabilization of the FSO Safer in preparation for the arrival of the receiving vessel – NAUTICA. This followed the endorsement of the detailed operational plan which was developed by both the IRG and DFA in April 2023. • On 12 June the protracted and unprecedented negotiations between UNDP and a wide consortium of insurance underwriters led by UK-based insurance brokers – the Howden Group – were concluded signifying the activation of insurance coverage for the ship-to-ship transfer of oil from the FSO Safer to the Nautica, the recycling of the Safer and the replacement of Nautica itself among other insurance policies that were extensively negotiated.	**Completed**
1.2. Proportion of oil stored in FSO Safer tanker that is transferred to the VLCC (Very Large Crude Carrier).	• Preparations for the transfer of the oil from the FSO Safer started in earnest with the arrival of the salvor assets and the stabilization process of the FSO Safer in preparation for the STS operation included with taking the measurement of the quantity of Marib crude oil in the compartmentalized tanks of the FSO Safer and testing its physical condition. Both activities were commissioned through a third-party surveyor who confirmed the liftable amount of oil out to be around 1.1 million barrels before de-mucking and tank washing takes place. The quantities considered "liftable" and "dead stock" were determined following completion of the actual transfer operation.	**Completed**

Project Output 1: Potential oil spill from the FSO Safer tanker is prevented		
Indicator	**Summary achievement**	**Status:**
	• Oil spill equipment was provided to the targeted locations, and the project conducted training to ensure the equipment's effective utilization in emergency response scenarios. This training enhanced the capacity of relevant personnel to handle potential marine emergencies effectively.	
1.3. FSO tanker cleaned and readied for disposal	• FSO tanker onsite cleaning has been completed. • Due to the pause of the project activities on 27 Dec 2023 that came as a result to the volatile/escalating security situation in the Red Sea and the consequence increased in operational and logistical costs, the towing and recycling of the FSO Safer could not proceed as planned and since then the MT Yemen has been continuously managed and maintained through the SSOP project. The decision of the project pause by the UNSG was communicated to partners and Yemeni counterparts promptly after it was taken.	**Not Completed**
1.4. Number of government officials trained on DRR and contingency planning at local/regional level (M/W)	• Training sessions were held on May 2023 for 22 men and four women government officials totaling 26 members. This was due to the delayed start of this activity in late July and the intention was shifted to the limited available number of participating personnel to perform as Training of Trainers within their internal administrative circles from the maritime affairs and port authorities in the north and south of Yemen. They would further train communities close to affected areas by the Red Sea in Hodeidah, Khokha and Aden that are likely to experience negative effects from any major oil spill from the FSO Safer or other source in locations adjacent to the Safer Ship-to- ship transfer operation off the Red Sea area. • The level of gender participation has been modest due to the highly conservative nature of the country. The project did experience the anticipated level of resistance to the inclusion of women and other marginalized groups during implementation, hence the limited number of women being trained.	**Completed**
1.5. Number of persons directly benefiting from the intervention (M/W/B/G)	• The project targeted a population of 12 million benefiting from the intervention which represent estimates of direct and indirect beneficiaries. The	**Completed**

Project Output 1: Potential oil spill from the FSO Safer tanker is prevented		
Indicator	**Summary achievement**	**Status:**
	figures were identified based on OCHA's estimate on the number of affected population. "If oils spill happens, up to one third of Yemeni population (11.9 million people out of 30.7 million (almost half of them are women and girls) could be directly exposed by food insecurity as they may not receive food aid because of the closure of Yemeni ports. (Huynh et al., 2021). Yemen's fisheries would be devastated within three weeks, affecting over 1,000 species, with a predicted recovery period of 25 years. The impact on food security would indirectly affect all Yemenis for many months" (OCHA, 2022).	

4.2. Description of Results

4.2.1. Salvage assets mobilized and deployed to the FSO Safer site

The due diligence exercise on the salvage operation company e.g. SMIT Salvage BV, was conducted as part of the intense pre-award negotiations and were concluded in March 2023 paving the way for the contractual engagement of SMIT in April 2023. With the technical support of the UNDP Office of Legal Services in New York and the Maritime Legal firms, the project made significant progress to ensure the mobilization of the salvage assets to the worksite during the period. The contract to SMIT was split into two phases; a) an initial small contract focusing on the development of the over-arching detailed operational plan (DoP); and b) subsequent contract focusing on the entire salvage operation. The detailed salvage operational plan was identified as a pre-requisite for all future engagements with SMIT by both the IRG and DFA. Although the initial contract that focused on the development of the detailed operational plan by SMIT was signed in January 2023, the full salvage operation commenced in May 2023 with the mobilization of the following salvage assets to the worksite at the Ras Issa Peninsula:

1. Vessel 1 SMIT Salvage (Ndeavor): Special equipment and services ship
2. Vessel 2 (Leon): Tug and supply vessel
3. Vessel 3 (Manakin): Anchor handler Tug
4. Vessel 4 (Aden): Push Tug and supply vessel

On May 30, SMIT support vessel e.g., the MT Ndeavor, was mobilized to the worksite and moored alongside the decaying FSO Safer at the Ras Issa Peninsula off Yemen's Red Sea coast to begin the inspection and stabilization of the FSO Safer in preparation for the arrival of the receiving vessel – NAUTICA.

With the support of its technical experts and other UN Agencies (WFP, IMO), UNDP engaged Clarkson Plc (aka Clarksons), - a leading shipbroking company - to coordinate the market survey and day-to-day engagement with vessel owners around the world to identify a suitable replacement vessel in preparation for the engagement of SMIT and the launch of the salvage operation. Updates from Clarksons were reviewed weekly by the combined Technical Working Group (TWG) comprised of UNDP and its subject-matter consultants/experts, and other UN agencies including UNRCO, WFP and IMO.

With the technical support of the Marine Management Consultancy firm (**SafeSTS)** and Clarksons, a suitable replacement vessel was identified, inspected, negotiated and purchased during the period. Intensive negotiations and high-level engagements with the leadership of the UNDP and the UN-RC led to a contractual agreement with EURONAV to secure the purchase of the NAUTICA (a 15 YO doubled hulled VLCC) to replace the FSO Safer in March 2023. In parallel the insurance broker e.g. **Howden Group** continued to provide technical and advisory support to the project to identify and customize the requisite insurance policies to cover all aspects of the time-sensitive salvage operations. In May 2023, an unprecedented bespoke insurance coverage was activated signaling the start of the operations at the worksite in Ras Issa Peninsula.

Significant progress was made on the oil spill contingency planning. Two oil spill experts were retained on contract to provide hands-on support to the DFA and IRG to finalize the national contingency plans and identify essential equipment for the required training and tabletop simulations. The oil spill preparedness and response capability were bolstered during the period with the contractual engagement of a team of oil spill equipment specialists who were largely deployed to Djibouti to:

- To supervise the acceptance and commissioning of procured oil spill equipment in Djibouti.
- To prepare and commission the equipment for use.
- To prepare the equipment for transportation from Djibouti to Yemen.
- To manage the reception and storage of the equipment in Yemen as required.
- To be on stand-by in Djibouti to participate in the oil spill response operations in case of a pollution event caused by the STS Transfer operation.

By June 2023 a significant amount of specialized oil spill equipment was supplied, commissioned and transported from Djibouti to Yemen in readiness for the start of the transfer of the oil. Additionally, practical spill response training was conducted, and Joint Operation Centers in Hodeida, Aden and Mukha were established to facilitate adequate pre-positioning of oil spill response capabilities. The project benefitted from the support and cooperation of Yemeni authorities in both the North and the South in setting up the essential infrastructure for the complex operation during the period.

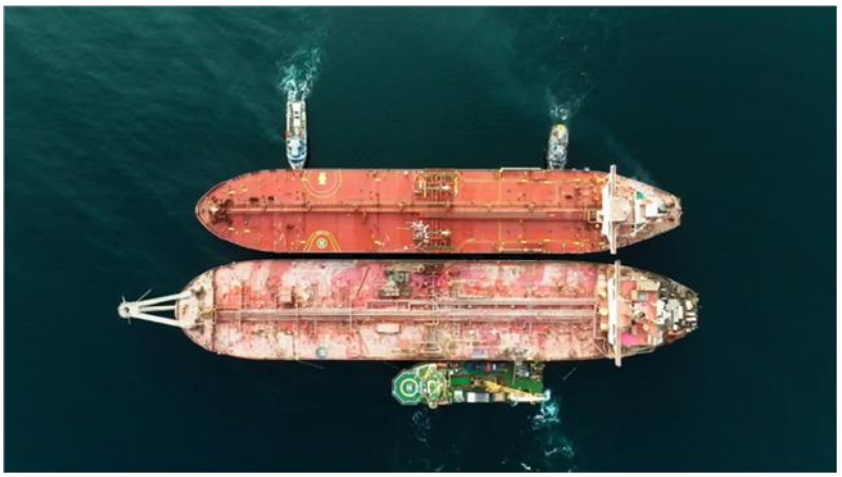


Figure 1: FSO Safer, moored alongside to MT Yemen in the Red Sea. Photograph: SMIT/Coen De Jong

4.2.2. Emergency phase - Immediate threat averted

On 30 May 2023, the salvage vessel e.g., MT Ndeavor, reached the FSO Safer site to begin the operation. The crew on the FSO Safer cooperated closely with the salvage team. In Hodeida port (Yemen), the Safer Technical Committee provided access, security and technical support, and it maintained an elevated level of coordination and cooperation with the UN operational team in Hodeida and on the vessels. Once on site, SMIT stabilized the FSO Safer and prepared it for the removal of the oil and eventual towing. SMIT's work included: structural assessments of the hull, pumping inert gas into the tanks to reduce the risks of fire or explosion, preparation of the transfer pumps and rigging the hoses, prepositioning of oil spill response equipment. The oil pumping began on 25 July and was successfully completed on 11 August 2023. More than 1.1 million barrels of oil were transferred from the 47-year-old Safer to the replacement vessel MOST Yemen (formerly known as Nautica). The SMIT team subsequently washed the FSO Safer's tanks, assisted to cast the Moored Oil Storage Tanker (MOST) Yemen off from the Safer to moor a safe distance away pending the arrival of a CALM buoy, and took other measures to ensure the vessel's stability. The MT Ndeavor sailed out of Yemeni waters on 28 August 2023.

4.3. Factors affecting the attainment of results

4.3.1. Aiding Factors

Support from UNDP Headquarters

The project benefitted extensively from the expertise and committed support from various UNDP teams in Headquarters and around the world. This pool of technical and managerial experts consistently provided technical support and advice to the project in areas that included: procurement, legal advice, due diligence, interagency cooperation, coordination of management reviews and approvals. This continues to date until the objectives of the project are realized.

The contractual engagement of external resource persons/firms to serve as experts to the project team also aided the implementation of the project during the period.

4.3.2. Inhibiting Factors

I. Technical Complexities involved in the procurement/lease of VLCC

As anticipated in the project design, the project team and external experts encountered a multitude of unforeseen and "unknown" factors during the period including but not limited to the unusually high prices of VLCCs as revealed during the intensive market research for a suitable VLCC. Other technical complexities dealt with included concerns on the ownership and ownership transfer expressed by the IRG & DFA, options of purchase or time-charter and their associated risks and liabilities. Although these factors were anticipated by the project document, the interwoven complexities around them were largely unforeseen until the actual engagement with the very dynamic international shipping market and sophisticated negotiations with technical experts including insurance underwriters and others.

II. Insufficient resources for the purchase/time-charter of a VLCC

The project only estimated US$33.6 million for the purchase or lease of the VLCC spread over two years of implementation. This budget estimate proved to be grossly insufficient during project implementation due to the inflation of vessel prices. Clarksons advised on a range of between US$45 million – US$60 million as the most feasible price for an adequate and sustainable replacement for the FSO Safer. With only US$ 77.5 million as cash in hand as of March 31, 2023, it was quite challenging for the UN Resident Coordinator and UNDP management to make the required decision on the purchase or lease of the VLCC as initially planned. By May 30, 2023, with only $87 million in pledges received, UNDP opted for the purchasing option and managed to secure the Nautica with the support from the ship broker Clarksons.

III. Dependencies of key project activities/results

The commencement of the full salvage operation including the mobilization of assets to the work site by SMIT was contingent upon the availability of the VLCC, and the development of the detailed operational plan. These dependencies were significantly realized, and critical paths determined during this period.

5. Partnership

The SSOP is a complex project that required taut processes and technical expertise to deliver successful results. Strong partnerships within the UN and external actors were attentively nurtured and cultivated during the period. The UN RC/HC and his team continued to lead on building and maintaining relationships and confidence with all partners, including the Yemeni political actors, Member States and donors. This leadership was pivotal during the reporting period in the coordination of engagements within the UN, confidence-building among Member States and donors, stakeholder management and engagement, and risk management practices.

The International Maritime Organization (IMO) and the UN World Food Programme (WFP) brought invaluable technical expertise to the implementation of the project. Both IMO and WFP were crucial members of the joint Technical Working Group (TWG) during the period.

The Global Environment Facility (GEF), UNDP and the IRG started a partnership to strengthen risk management and build in additional measures that ensure mainstreaming of biodiversity conservation concerns in the project (SSOP), so that globally significant marine and coastal biodiversity was protected and the resilience of potentially affected communities, was strengthened. Implementation of this tripartite partnership which had pledged a contribution from the Yemen GEF allocation of USD $5 million to the project.

6. Environmental Considerations

The SSOP is primarily aimed at averting an environmental disaster. A significant oil spill could have occurred at any time, discharging up to 1,148 million barrels of its cargo along Yemen's Red Sea coastline and towards its neighboring countries. Heavy contamination and pollution could have extended as far as the Bab-El-Mandab strait, with some oil passing beyond the Gulf of Aden.

The disaster would have quickly surpassed national capacity and resources to respond effectively, estimated at four times the amount of crude oil spilt in the Exxon Valdez catastrophe of 1989. The lives and livelihoods of up to 12 million people would have been directly affected, with the unique environment of the Rea Sea experiencing enormous damage above and below the water. Recovery from the oil spill could have taken up to 3 years and potentially cost US $20 billion without urgent intervention. Life below water would not have recovered for 25 years. In addition, one of the world's major shipping lanes could have been affected, impacting many more people globally.

7. Risk Management

A critical piece to successfully mounting this operation has been to identify and address its numerous risks. With the support of a team of world-leading experts in maritime law, oil spill, salvage operations, engineers, naval architects, chemists, surveyors, and the cooperation of Yemeni counterparts, the UN through a system-wide effort led by UNDP, has been able to de-risk the operation and secure necessary insurance policies. These policies offer coverage for a variety of environmental, geopolitical, and humanitarian risks, including pollution from the transfer, explosion of the gas on the ship, personal security of individuals onboard, and removal of the FSO Safer.

Risks	Mitigation Measures
Legal Risks: Anticipated legal risks associated with the ownership of the FSO Safer, its cargo and the ultimate replacement vessel were paramount concerns during the period.	A Maritime Legal Firm was contractually engaged to work under the direct supervision of the Bureau of Management Services Office of Legal Services (UNDPHQ) to constantly review legal documents and contracts and provide legal advice and opinion to guide project implementation. In addition, the UNRC led many successful consultative discussions with representatives of the IRG and DFA during the period to chart out the most feasible solution to the vessel ownership concerns on both sides.
Failure to obtain sufficient insurance cover.	The legal firm Clyde & Co took over as the maritime law firm to continually review, advise, and consult on the various insurance policies and requirements. Through the hired Howden Brokering insurance broker the project received professional advice on

Political Risks Delay or refusal of the implementation of MOU by DFA. Change of political stance towards the operation by DFA.	comprehensive insurance plans. Insurance for the different elements of the operation (oil, ships, people, pollution), were obtained through the flexibility and forthcomingness of the insurance broker and the underwriters. This allowed the project to move forward despite numerous potential difficulties. UN response plan was prepared and used to call for regional/international support in case of oil spill from the FSO Safer UN RC/HC continued to sustain advocacy and prepared and disseminated effective communication strategy including emergency communications. UN RC/HC conducted continuous consultations with the DFA and IRG to ensure they are aware of the content of the MoU and they agree to it.
Operational Risks: FSO Safer discharges her entire oil contents in accordance with worst case IMO predictions – 100% release **Hull failure during STS operation.**	Extensive work by global experts has been conducted to provide explosive and environmental mitigation, which will be discharged by SMIT - a globally renowned contractor with expertise in salvage and oil transfer. Each of these activities is governed by its own risk management plan. A comprehensive oil spill contingency plan was developed and put in place before the start of the STS transfer in June 2023. Oil Spill Experts have been engaged to support preparedness activities and response in the event of a major incident in June 2023 with IMO full partnership. Four emergency command centers in the north and south of Yemen were established and equipped with the necessary tools to function as emergency preparedness centers. IRG authorities trained, prepared, engaged. DFA authorities trained, prepared, engaged. SMIT contract included hull inspection and analysis plan, mooring plan, tank balancing plan, and custom-built fenders. The initial inspection conducted revealed the good condition of the hull to sustain the STS operation. Additionally, the renowned durable Oklahoma fenders were procured and delivered which, along with installation of boom, helped mitigating forces on the hull.

8. Challenges

Budgetary constraints: Main challenges faced during the period stemmed largely from budgetary limitations to implement planned activities. The impact of the war in Ukraine and the related global economic crisis were identified as responsible for the significant spike in vessel prices. This singular challenge had a severe knock-on effect on the project's timelines and results as the commencement of critical activities such as the engagement of the Salvage Company (SMIT) was dependent on the availability of the VLCC. The availability of the detailed operational plan which was developed by SMIT during the period was a pre-requisite for other critical outputs including finalization of the National Contingency Plan and the Comprehensive Insurance Plan. The UNDP assembled a team of world-class technical expertise, including a marine management consultancy firm, maritime legal firm, insurance and ship brokers, and oil spill experts has been instrumental in de-risking the whole operation. Other challenges included:

Operational constraints: Foreseen and unforeseen challenges were compounded by operational complexities peculiar to the Yemeni context. Significant logistical delays were experienced during the period with the delivery of procured oil spill response equipment into Yemen via Djibouti. Obtaining visas and work permits into Yemen for technical experts/partners including vessel crews and consultants, clearances and permits for salvage vessels, including the replacement/receiving tanker (NAUTICA), were among the significant operational challenges encountered during the period.

Red Sea crisis: Following consultation with the Office of the UN Chef de Cabinet, the project was put on hold in January 2024 due to a number of operational and financial challenges that emerged as results of the crisis in the Red Sea. While some activities are still underway to ensure the smooth management and running of the MT Yemen, the project has temporarily interrupted the planned provision of the CALM Buoy and the towing and recycling of the FSO Safer due to increased operational, logistical, and insurance costing.

9. Lessons Learned

Although the above-mentioned challenges encountered during the period impacted the implementation of the project, they also provided UNDP with important lessons which would be applied to shape project management in the next quarter. These include:

- Exceptional flexibility for decision-making required for the management of emergency operations with high political, security, social, and financial stakes such as the SSOP.
- The design and budgetary estimates of such high-level emergency projects must be encompassing in perspective to accommodate global forecasts of socio-political and economic shocks such as the crisis in Ukraine and the effects of a post-pandemic era.
- Criticality of effective communication for success with external parties and stakeholders.

10. Conclusions and way forward

To the extent possible the project demonstrated commendable tenacity despite severe funding shortfalls and several unforeseen operational and political challenges stemming from an intensely complex operating context.

Nonetheless, the SSOP continues to be of critical relevance to Yemen and in the region not only for its impact on the trading routes on the Red Sea but also its strategic contribution to overall goals and objectives of the Yemen UNSDCF. The Project Board approved a revision of the initial project timelines and budget during this reporting period. As a result, the project was stabilized programmatically and operationally and the ship-to-ship transfer of the cargo of the FSO Safer that was completed in August 2023.

Concerted efforts are still required for resource mobilization to overcome the potential bottlenecks attributable to the funding shortfall incurred during phase I. In the second phase, the UN plans to (1) facilitate the installation of a replacement option for the FSO Safer and a (2) tow away, de-muck and recycle FSO Safer, to prevent any residual environmental threat. This is contingent on security conditions in the Red Sea as well as the availability of operational and financial resources.

In light of the pause in project activities, discussions and negotiations on the CALM Buoy with counterparts will continue when the project resumes. Additionally, plans to recycle the FSO Safer will be included in the resumption of project activities, in close coordination with the Yemeni authorities.

In collaboration with Euronav, during the pausing phase of the project, the focus has been on ship management services for the MT Yemen vessel (Nautica). The transition to the provision of purely advisory services began on 22nd January 2025.

11. Financial Status[2]

To date, UN Member States, private companies and the public have pledged/contributed the amount of US$ 135 Million to the project overall budget which was estimated at US$143 million. However, during the implementation of emergency phase and due to the complex operational, logistical, and technical nature of the project, the cost of the activities increased leading to a bigger project budget and leaving an even larger funding gap currently varying from US$ 24 million in the best-case scenario or US$ 52 million for the worst-case scenario. These scenarios are contingent on (1) the proceeds of the scrapping value of the FSO Safer and (2) final operational measures to be estimated and paid. In the best-case scenario, we would fully realize recycling proceeds and experience minimal operational cost increases during phase 1. Conversely, in the worst-case scenario, recycling of FSO Safer would not occur within the project timeline, resulting in no proceeds and a substantial increase in operational costs for phase 1.

[2] Disclaimer: Data contained in this financial report section is an extract of UNDP financial records. All financial data provided above is provisional.

Phase 1 of the project remains in almost $19.5 million deficit.

While the funding for the emergency phase was not sufficient at the time of launching and concluding the ship-to-ship transfer of the oil, UNDP at the time proceeded with the project implementation based on the received reimbursable disbursement from the OCHA CERF for US$ 20 million, given the exigency and urgency of the action. These funds were reimbursed to OCHA in March 2024 using internal UNDP resources.

The decision to make a vital contribution to the Safer project at this moment will play a crucial role in addressing the funding shortfall for both the emergency phase and phase II of the project. These financial resources are imperative for the UN to fulfill its commitments to the Yemeni authorities on the ground and, more importantly, to uphold its duty to the Yemeni population. The ramifications of inadequate funding at this critical juncture are far-reaching and multifaceted, encompassing political, security, and environmental risks.

12. More information

Safer update Sept 2023 video
https://www.undp.org/safer