



**IRAQ UNDAF TRUST FUND**  
**Sustainable Solutions of Compost Production from Organic Waste in Iraq - Karbala Governorate**

<b>Participating UN Organization(s) (specify Coordinating Organization):</b>	<b>Strategic Result/Outcome:</b>
Participating UN Organizations: UNDP and UNEP  Coordinating Organization: UNDP	UNDAF Priority 3: Environmental management and compliance with ratified international environmental treaties and obligations  UNDAF Priority Outcome 3.3: Government of Iraq has improved programmes for the prevention and control of pollution.

<b>Gol Counterpart:</b>	<b>UN Coordinating AFP:</b>
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<b>Programme Title:</b>
Sustainable Solutions of Compost Production from Organic Waste in Iraq - Karbala Governorate

<b>Programme Costs:</b>	
IRAQ UNDAF TRUST FUND:	600,000 USD
Govt. Contribution:	-
UN Organization Core:	-
Other:	-
<b>TOTAL:</b>	<b>600,000 USD</b>

<b>Programme Location:</b>	
National:	Iraq
Governorate	Karbala Governorate
Town(s):	Karbala City

### Programme Description

The main objective of the programme is to promote environmentally sound waste management in Iraq by creating a value chain for compost for the private sector and encourage efficient management of sustainable production and utilization of compost. In addition, the proposed programme aims to pilot a best practice on composting benefits in Karbala Governorate, Iraq. The core technology to be supported will be the production of organic compost to be generated from waste at the household level and at municipal landfills, augmented by decomposition technology at landfills to reduce methane emissions. The programme will incentivize the use of compost over chemical fertilizers by progressively integrating compost into the existing fertilizer market and demonstrating its proven advantages.

To create a standardized value chain for the waste management in Karbala innovation and technology transfer will be the core action in combination with introduction of financial mechanisms and incentives for communities, SMEs and individual participants involved. Several composting technics and technologies exist abroad. For example, the US Environment Protection Agency (EPA) has developed several types of composting, including Aerated (Turned) Windrow Composting; Aerated Static Pile Composting and In-Vessel Composting. These technics are expected to be applicable in the Iraqi context with proper adaptation and local contextualization.

To ensure sustainability the programme will support the private sector in playing a major role and to be involved in the waste management sector. Currently, there is only a handful Micro & Small Enterprises (SME) that are working in that sector in Iraq. A market-based approach will be developed to enable the participation of more SMEs. Specifically, the programme will support the construction of a pilot composting facility in Karbala to determine best approaches for producing commercial quantities of compost which will in turn replace chemical fertilizers progressively. Based on the lessons learned from the pilot in Karbala Governorate, a national strategy will be developed for upscaling the best practice in other parts of Iraq.

This project with linkages with agriculture production will support in future contribution to sustainable development through the reduction of greenhouse gas emissions and pollution from:

- Avoided CH<sub>4</sub> emissions (otherwise occurring through methanation at the landfill)
- Avoided CO<sub>2</sub> and black carbon emissions (by reducing transportation distances, burning of fossil fuels and open burning of agricultural residue)
- Reduced reliance on the importation of raw materials for the synthesis of chemical fertilizer.

The local authorities headed by the governor expressed their willingness to support the project by securing the site of the project and in-kind contribution including providing vehicles for transportation of the organic waste to the composting site. In addition, private sector companies active in the waste management sector expressed their willingness to invest in the waste management fields including the waste to fertilizer approach. The project will mainstream gender concerns into all measures and support women through ensuring gender equality in the Project Steering Committee and ensuring women's participation in project activities.

#### Line Ministry / Authority Responsible:

Ministry of Health and Environment  
Governor Office of Karbala  
Municipality of Karbala  
Directorate of Agriculture, Karbala

#### Programme Duration:

Total duration (in months): 6  
Expected Start Date<sup>1</sup>: 1 April 2021  
Expected End Date: 30 September 2021

### Review & Approval Dates

Line Ministry/ National Authority Endorsement Date:	16 March 2021
Steering Committee Approval Date:	31 March 2021

### Signatures of Participating UN Organizations and Government Counterparts

I.	<b>Name of Representative:</b> <b>Signature</b> <b>Name of UN Organization:</b> <b>Date:</b> 30/3/2021	Zena Ali Ahmed Resident Represe UNDP
	<b>Name of Representative:</b> <b>Signature</b> <b>Name of UN Organization:</b> <b>Date:</b> 31/03/2021	Sami Dimassi Director & Regional Representative UNEP

<sup>1</sup> The official start date of any approved project/programme occurs when funds are transferred by MPTF Office.

II.	Name of the Government Counterpart: Signature Name of the Government Institution: Date:	Naseif Jasem Al-Khattabi Governorate of Karbala
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**Signatures of ITF UNDAF Steering Committee Co-Chairs**

III.	Name of Steering Committee Chair (UN) Signature Date:	Ms. Irena Vojackova Sollarano, UN DSRSG/RC/HC
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III.	Name of Steering Committee Co-Chair (GOI): Signature Date:	Dr. Khaled Battal Al-Najr Minister of Planning
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**Strategic Planning Reference (s)**

**Relevant NDP 2018-2022 Goal(s):**

Under the "Environmental Sustainability" goal and objectives two "Air contamination and its effects" and four "Climate change and its impacts" that both aims to develop waste management systems.

**Relevant UNDAF Strategic Result & Outcome:**

- UNDAF Priority 3: Environmental management and compliance with ratified international environmental treaties and obligations
- UNDAF Priority Outcome 3.3: Government of Iraq has improved programmes for the prevention and control of pollution.

**Project Budget Breakdown by Source of Funds and Participating UN Organization**

Total Project Budget (in US\$): 600,000 USD

**Budget Breakdown by Source:**

Participating UN Organization	Iraq UNDAF Fund (US\$)	Other sources	GOI Funds (US\$)	Participating UN Organization Funds (US\$)	
				Core Funds	Non-core
UNDP	460,000	-	-	-	460,000
UNEP	140,000	-	-	-	140,000
<b>Total Budget (US\$)</b>		-	-	-	<b>600,000</b>

## 1. Executive Summary

The proposed project aims to investigate and determine a best practice on composting benefits in Iraq. The core technology to be supported will be the production of organic compost to be generated from waste at the household level and at municipal landfills, augmented by decomposition technology at landfills to reduce methane emissions. The project will support incentivize the use of compost over chemical fertilizers by progressively integrating compost into the existing fertilizer market and demonstrating its proven advantages. The main objective of the project is to create a value chain for compost for the private sector and encourage efficient management of sustainable production and utilization of compost.

The approach lays stress on the 3 Rs – reduce, reuse, recycle – and aims to reduce GHG emissions at each stage of the waste management process by upstream sorting of waste, recycling and transformation; only the remaining waste which cannot be utilized, is sent to the landfill. This not only reduces emissions at the landfill, but also significantly reduces the cumulative distance covered to transport waste to the landfill and open burning of waste.

To create a standardized value chain for the waste management in Karbala. Innovation and technology transfer will be the core action. Several composting technics and technologies exist abroad. For example, the US Environment Protection Agency (EPA) has developed several types of composting, including Aerated (Turned) Windrow Composting; Aerated Static Pile Composting and In-Vessel Composting. These technics are expected to be applicable in the Iraqi context with proper adaptation and local contextualization.

Having the private sector involved in the waste management sector is key to ensure sustainability. Currently, there is only a handful Micro & Small Enterprises (SME) that are working in that sector in Iraq. A market-based approach will be developed to enable the participation of more SMEs. Specifically, the project will support the construction of a composting facility in Karbala to replace chemical fertilizer progressively with organic blend. Lessons learned from the composting facility will help to develop a national strategy for upscaling the pilot in other parts of Iraq. The project will only ensure that the overall value chain is functioning but the lead in term of investments will come from the municipalities and the SMEs. This will be ensured through the introduction of financial mechanisms and incentives for communities, SMEs and individual participants involved. For SMEs, the incentives may include accessing loans and collaboration with micro-finance institutions and local banks in the country. For communities and individuals, incentives may include municipal taxes where discounts or rebates are given to those complying with upstream waste sorting. This will lead to the creation of a market, and ultimately to substantive green job creations. The private sector (mainly small recycling companies) will receive particular attention, with tailored capacity building program and support through financial mechanisms and incentives.

This project with linkages with agriculture production contributes to sustainable development through the reduction of greenhouse gas emissions and pollution from:

- Avoided CH<sub>4</sub> emissions (otherwise occurring through methanation at the landfill)
- Avoided CO<sub>2</sub> and black carbon emissions (by reducing transportation distances, burning of fossil fuels in generation of electricity and open burning of agricultural residue)
- Reduced reliance on the importation of raw materials for the synthesis of chemical fertilizer.

The proposed project will initiate the implementation by engaging the national stakeholders in the process of site selection and identification of global or regional best practices in composting technology suitable in the Iraqi context. Followed by design and construction of the pilot composting facility and development of guidelines for collection, transportation, and processing of organic waste.

In parallel, a market analysis will be conducted to identify marketing potential for organic compost including potential approaches to replicate and scale up the success of the pilot composting facility in other areas of Iraq and a national strategy will be developed. In addition, awareness campaigns will be organized to raise public knowledge on the benefits of organic compost to support sustainability of the organic compost market

## 2. Situation Analysis

Increasing amount of municipal solid waste accompanied with lack of treatment facilities is a major sustainable development challenge in Iraq. In 2016, Iraq generated nearly 15 million tons of municipal solid waste. Nearly 60% of the municipal solid waste is characterised as organic waste. The higher organic fraction found in the municipal solid waste is an opportunity for promoting composting as a waste treatment in Iraq.

Karbala is situated in the middle of Iraq, about 100 km southwest of Bagdad. Covering about 1.2% of the total area of the country, it has an area of 5043 square kilometers. Constituting 3.2% of the Iraqi population with a population density of 223 capita per square kilometers, the city has a population of 1,151,152 according to the Central Statistical Organization, Iraq. Many events take place in the city on an annual basis (being a holy city as it holds the shrine of Hussein Bin Ali), involving millions of pilgrims. The largest event which lasts 15 to 20-days (Al-Arba'een), is one of the biggest in Iraq attended by about 20 million pilgrims. To serve this huge number of pilgrims, there are about 8000 camps distributed across the city providing free meals and

drinks over the duration of the event. In consequence, large amounts of Municipal Solid Waste are generated, posing a serious and complex problem for city authorities (Holy Shrines Management and Karbala Municipality). The waste management system applied in the city during the event is very basic in that all the waste is simply collected and transferred to a number of temporary transfer stations, close to the event area, then transported to the landfill with no application of recycling or treatment processes.

Recently, MSW generation has dramatically increased in Karbala city, because of a range of factors such as population growth, economic and social developments, and the massive influx of pilgrims during major religious events. Every year, Karbala city hosts numerous religious events, attended by millions of pilgrims from several countries across the world. Large quantities of MSW are generated during these events which have negative impacts on the local environment and human health in addition to stretching Karbala's landfill capacity to its maximum. The issue of mounting solid waste disposal and treatment costs, in addition to the need to avoid further deterioration of Karbala and the surrounding environment, have made it even more pressing that city authorities manage generated waste.

The management of such waste poses a serious and complex problem for the city authorities. Therefore, establishing accurate and reliable information about this issue is valuable in terms of waste management planning and resource recovery application.

According to the study of solid waste collection in the city of Kerbala, around 100 thousand tons of MSW was generated by a population of 0.5 million residents in Karbala city in 2008. In comparison, a study for Landfill Site Selection for Karbala Municipal Solid Wastes<sup>3</sup> indicated that the annual generated MSW was about 300 thousand tons by about 0.9 million inhabitants in Karbala in 2012. These numbers show considerable growth of MSW generation in Karbala. Estimates put the growth rate at 4% annually. In addition, the influx of pilgrims during major events have added an extra 15% to the annual amount of MSW. The same study detailed that solid waste in Karbala is comprised of 61.5% organic, 10% plastic, 7% paper, the remainder including metal, glass, and other miscellaneous waste.

At Karbala, solid waste streams are normally collected on daily basis and taken to disposal sites without sorting or recycling by the collection authorities (Holy Shrine and Karbala Municipalities). Waste is disposed of at open dumping sites, without any lining or treatment, through several dumpsites and landfill areas located mainly inside and around the city. Informal, unofficial MSW recycling occurs, something which has grown over the last decade, as waste pickers sift through and recover recyclable materials from transfer stations or landfill sites. MSW recycling is apparently only carried out on this informal basis by waste pickers.

A recent research published in 2017 by Muhammad et.al aims at establishing up to date waste composition data from major events for local waste management authorities (Holy Shrine and Karbala Municipalities). The solid waste stream produced by pilgrims during the event was analyzed to identify categories of waste, and their percentages by weight basis. The analysis of the waste revealed a high percentage of recyclable materials which may be separated and returned to the market. About 35.5% of the total solid waste are pure recyclable products such as paper (15%), plastic (14.6%), metal (3.6%) and glass (2.4%). These materials can be separated from the waste stream during the generation stage (by the pilgrims in camps) or at the treatment stage (by the management authority at the treatment facilities). 57.8% of the total waste was organic which can be converted to compost by use of a composting facility, while only 6.5% are miscellaneous waste which is unrecyclable. This indicates that 93.5% of the solid waste generated at Karbala has the potential to be reused and recycled effectively.

Based on the above analysis, it is of significant importance to consider the treatment of a huge amount of the organic waste that is generated during the religious events at the city of Karbala and create a business modality that can contribute in protecting the environment, producing a high quality compost fertilizers, creating green jobs and introducing this model as a success story for replication in other cities in Iraq. Therefore, this project will focus on identifying the most appropriate modalities of collecting, handling, and producing compost from the organic waste as well as reducing the GHG emissions.

### **3. Context and Relevance to NDP and UNDAF, Cross-Cutting Themes, and UN Organization Experience including any Lessons Learned**

#### **1. Project context and its relevance to NDP and UNDAF**

In alignment with the NDP "Environmental Sustainability" goal and objectives two "Air contamination and its effects" and four "Climate change and its impacts" that both aims to develop waste management systems the project will pilot innovative composting in Karbala Governorate and support utilizing the amount of organic solid waste generate mainly from religious tourism, bi products from food industry as well as domestic organic waste.

Currently, the solid waste management system applied in Karbala, Iraq, is in its preliminary stages. Several studies tried to document the relevant basic information of the system such as generation, composition, and public participation, however, there are very little, if any, previous studies analyzing the current waste management system in Karbala.

The main component of the refuse generated at Karbala city during major events was organic waste, mainly food residual mixed with paper and plastic packaging. Pure organics (such as food residual cooked and uncooked) were also found in the waste stream. The average organic refuse generated during the event (57.8%) was found to be less than that generated in Karbala over the year (61.5%).

The project will support accelerating structural transformations for sustainable development through piloting best global/regional waste to compost technologies adapted to the Iraqi context and on the long term promote utilizing natural resource that otherwise would have ended up in unregulated landfills.

UNDAF Priority Outcome 3.3 aims to support the Government of Iraq in developing/improving programmes for the prevention and control of pollution. In this aspect, this project will implement various activities to assess the current composting situation and willingness of the stakeholders to use compost from organic waste. Furthermore, the project will raise the awareness of compost from organic waste through awareness and training events in addition to implementing a pilot composting facility for demonstration purposes.

#### **Cross-Cutting Themes**

- I. UNDP Iraq is currently implementing projects to promote green practices on waste management through:
  - Supporting waste management in the health sector in Muthanna governorate with focus on COVID-19 waste.
  - Developing an Integrated Approach for Pollution Control in Iraq
- II. UNDP is supporting Iraq in implementation of UN conventions related to chemical materials including Rotterdam, Basel and Minamata conventions.
- III. The project will support and encourage active participation from women and youth as representatives of national stakeholders as well as participants in the capacity building and awareness activities. In addition, the project will highlight the importance of human rights throughout its activities.

#### **UN Organization Experience including any Lessons Learned**

UNDP has been supporting the government of Iraq through four interlinked, inclusive, and holistic development pathways. Underpinned by a resilience-based strategy that addresses the needs of the most vulnerable communities, those pathways are: Strengthened stabilization; Diversified pro-poor economic growth for sustainable livelihoods; Improved governance with accountable institutions that protect the rights of vulnerable groups and pave the way for citizen-state trust; and Decreased fragility to climate change.

Through many successfully implemented projects with satisfactory rating from donors and the Iraqi government, UNDP has gained the trust of donors and stakeholders and built a strong network with key stakeholders and beneficiaries in the public and private sector. Project in the renewable energy sector among other areas identified the main crosscutting barriers in terms of lacking or inadequate legislations, policies, regulations as well as capacities that's needs to be in place in national and provincial levels to support a sustainable development approach with focus on socio economic benefits, vulnerable groups and gender consideration. This was achieved through many UNDP implemented projects including:

- "Catalyzing the use of solar PV energy in Iraq" project, funded by GEF
- Green Climate Fund (GCF) Readiness Programme in Iraq, funded by GCF
- Support Iraq NDC, funded by the Climate Promise initiative

#### **4. Results Framework**

##### **Outcome: Improved economic opportunities Environmental Practices in the SWM sector for local community in the Karbala Governorate**

Output 1: Enhanced knowledge of the local community on the Solid Waste Management (SWM) sector and potential for livelihood opportunities in the value chain. (The activities are listed in the table below):

##### Activities:

- a) Identification and mapping of the key stakeholders that might be relevant for the Composting in the designated areas including the public sector, private sector, and local community.
- b) Conduct surveys to measure the willingness of the camp operators, NGOs, hotels, and community influencers to participate in the collection process of the compostable waste generated in the city of Karbala.
- c) Assess the actual needs of the community to increase their awareness of introducing a waste separation mechanism of the organic waste at source including during the religious events.
- d) Design and conduct awareness activities aiming at ensuring the delivery of a feasible quantity and good quality of the generated food waste.

Output 2: Enhanced capacities of local authorities on composting and waste management.

Activities:

- e) Conduct assessment of the current capacity of the local authority in collecting the organic waste and deliver it to the selected site of composting process.
- f) Prepare a standard operating procedure of compost handling and management and conduct training for different target groups at the local authorities.

Output 3: Business modality of compost production and marketing approaches, and a national strategy for upscaling are developed.

Activities:

- a) Prepare a market supply and demand study of the compost in Iraq.
- b) Develop a national strategy for upscaling composting from waste in Iraq
- c) Conduct consultations with the importers and sellers of the chemical fertilizers to assess their willingness to consider the compost as a better alternative for the current used fertilizers with conducting awareness on the benefits of using compost as a main fertilizer in agricultural sector.

Output 4: Construction of a pilot composting facility completed.

Activities:

- a) Conduct EIA and site selection for the construction of the composting facility.
- b) Construction of composting facility which would serve as a pilot testing area for determining best approaches to the Iraqi context.
- c) Technical and economic evaluation of pilot composting facility products.
- d) Prepare a detailed design and specifications for the most appropriate treatment technologies aiming at commercializing the facility

Table 1: Results Framework

<b>Project Title</b>	Sustainable Solutions of Compost Production from Organic Waste in Iraq- Karbala Governorate					
<b>UNDAF Strategic Result</b>	UNDAF Priority 3: Environmental management and compliance with ratified international environmental treaties and obligations					
<b>Relevant SDG(s)</b>	SDG 2: Zero Hunger, SDG 3: Good Health and Well-being, SDG 11: Sustainable Cities and Communities, SDG 12: Responsible Consumption and Production and SDG 13: Climate Action					
<b>Relevant NDP Goals</b>	Environmental Sustainability goal					
<b>Relevant UNDAF Priority Outcome:</b>	3.3 Government of Iraq has improved programmes for the prevention and control of pollution.					
<b>Project Outputs</b>	<b>UN Org.</b>	<b>Other Implementing partner(s)</b>	<b>Performance Indicators</b>	<b>Baseline</b>	<b>Target</b>	<b>Means of Verification</b>
<b>Output 1 :</b> Enhanced knowledge of the local community on the Solid Waste Management (SWM) sector and potential for livelihood opportunities in the value chain.	UNDP UNEP		1.1 Number of key stakeholders that are identified and participate in awareness activities representing local authorities, private sectors and NGOs disaggregated by gender (at least 30% women)	0	50 key stakeholders identified and participate in awareness activities representing local authorities, private sectors and NGOs (disaggregated by gender)	Awareness event report with actual number of participants
			1.2 Number of key stakeholders surveyed on willingness to participate in the compostable waste collection process	0	50 stakeholders (i.e. camp operators, NGOs, hotels, and community influencers) surveyed	Survey report with actual number of respondents
<b>Output 2:</b> Enhanced capacities of local authorities on composting and waste management.	UNDP		1.3 Number of awareness campaigns conducted	0	2 awareness campaign designed and conducted	Awareness campaign completion report including disseminated awareness materials
			2.1 Number of capacity assessment report on collecting and delivering compost to selected site conducted	0	2.1 One capacity assessment report on collecting and delivering compost to selected site conducted	Capacity assessment report on collecting and delivering compost to selected site
			2.1 Number of staff working with waste management trained on organic waste handling and composting techniques	0	25 staff working with waste management trained on organic waste handling and composting techniques (gender disaggregated, based on available staff)	Training reports including actual number of participants



Project Outputs	UN Org.	Other Implementing partner(s)	Performance Indicators	Baseline	Target	Means of Verification
<b>Output 3:</b> Business modality of compost production and marketing approaches, and national strategy are developed.	UNDP UNEP		3.1 Number of market supply and demand studies completed	0	1 market supply and demand study completed	Finalized Market supply and demand study
			3.2 A national strategy for promoting waste to compost developed	0	1 National strategy developed	National strategy document
			3.3 Number of awareness events on economic benefits for organic compost conducted	0	2 awareness events on economic benefits for organic compost conducted	Awareness event reports
<b>Output 4:</b> Construction of a pilot composting facility completed.	UNDP UNEP		Progress phase of pilot composting facility is (designed, constructed and operational):	0	Pilot composting plant fully operational and handed over	Reports on progress of pilot composting facility
			Number of technical and economic evaluations completed on composting facility products in M3 and M4	0	2 technical and economic evaluations completed on composting facility products in M3 and M4	Review of the Evaluation Reports

## 5. Management and Coordination Arrangements

### 5.1 Governance

The Steering Committee:

- Decision-making authority; highest body for strategic guidance, fiduciary and management oversight, and coordination
- Facilitates collaboration between participating UN organizations and host government for the implementation of the Joint Programme
- Reviews and approves JP Document and annual work plans, reviews implementation progress and addresses problems, reviews and approves progress reports and evaluation reports, notes budget revisions/reallocations, audit reports
- Consists of high-level representative of the MoHEN, Karbala Governor Office, and the UNDP as the Chair of the steering Committee with the Deputy Minister of the MoHEN and UNEP as PUNO. The Executive will be the Deputy Resident Representative of UNDP-Iraq.
- Senior beneficiaries will be the Karbala Municipality and Directorate of Agriculture Karbala. Senior Suppliers are individuals/groups representing stakeholder interests and/or who are providing technical expertise.
- Among other things the Steering Committee will be responsible for:
  - Providing oversight/guidance and monitoring progress.
  - Decisions shall be made in accordance with standards that ensure best value for funding, fairness, integrity, and transparency.
  - If consensus cannot be reached within the Project Steering Committee on an issue, the final decision shall rest with the Executive.
  - The Steering Committee shall meet twice during the project lifetime, first approval meeting on the 31<sup>st</sup> of March 2021 and the second meeting in August 2021.

Each participating UN organization has programmatic, financial, and reporting responsibility for its part of the Joint Programme including evaluation and audits. Karbala Governor Office and Karbala Municipality coordinates with UN organizations and owns the national programme to which the UN provides support

A project team will be established consisting of project manager, project coordinator and project officer. The role of the Project Manager (PM) is to run the project on a day-to-day basis within the requirements and guidelines laid down by the Steering Committee. The PM is responsible for day-to-day management and decision-making for the project in a way that ensures that the project produces the results specified in the Annual Work Plan (AWP) to the required standard of quality and within the constraints of time and budget. The Executive of the Project Steering Committee appoints the Project Manager in consultation with the Implementing Partner.

**The Humanitarian Coordinator/Resident Coordinator** guides the strategic implementation of the JP. For all UN related issues and activities or agency specific events that have broader UN relevance, the UN system in Iraq will strive to speak with 'one voice' through the UN Resident Coordinator or through an UN participating Organizations' head on behalf of the HCT.

#### **The Office of the Resident Coordinator**

The Office of the UN Resident Coordinator is responsible for support to the strategic leadership role of the RC/HC on the JP. It provides support for all the designated tasks for the RC/HC.

## 6. Feasibility, Risk Management and Sustainability of Results

	Potential Risks	Likelihood of Occurrence	Mitigation Measures
1	Impacts from governmental restrictions during COVID-19 outbreak	Medium	The project will work in close cooperation with the local authorities to plan for project activities outside possible lockdown schedules and following all UNAMI and Government of Iraq safety regulations.
2	Inadequate engagement with stakeholders	Low	The project has identified a number of key stakeholders from the public and private sector that are interested and willing to invest in the composting sector. The project will continue to coordinate support the stakeholders to keep the momentum throughout the project.
3	Unqualified consultants contracted	Low	The project will develop specific ToRs that clearly define the qualifications and profile required to ensure only qualified applicants pass through the technical evaluation process; Reference checks would be completed to verify suitability of the profile to the assignment.
4	Security risks from demonstrations and	Low	The project will follow UNDSS and UNAMI regulations for national and international staff in addition to organizing activities as per safety

	terrorism		regulations.
5	Procurement of low-quality equipment for composting facility	Low	The project will consult with the local stakeholders on previous experience in the field to learn from them and overcome any previous challenges. In addition, the design of the composting facility will be with support from international consultants based on global and regional best practices.

## 7. Monitoring, Evaluation and Reporting

### Monitoring and Evaluation

The Joint Programme is monitored throughout its duration in accordance with each participating UN organization's procedures and as reflected in the Joint Programme Document. Monitoring will be done against targets and indicators and progress will be reported in the narrative reports. Each PUNO is responsible for monitoring its contributions. A Monitoring Plan will include roles and responsibilities for monitoring, timing, and methodology. Monitoring is linked to evaluation since it facilitates data collection toward targets, though additional data collection and different frameworks for analysis are needed for evaluation.

Monitoring Activity	Frequency	Cost (USD)
Track results progress	Monthly	Covered by project manager cost
Monitor and Manage Risk	Monthly	
Knowledge, good practices, and lessons will be captured regularly, as well as actively sourced from other projects and partners and integrated back into the project.	Monthly	
Bimonthly Project Quality Assurance	Bimonthly	
Review and Make Course Corrections	Monthly	
A progress report will be presented to the Project Steering Committee and key stakeholders, consisting of progress data showing the results achieved against pre-defined annual targets at the output level, the annual project quality rating summary, an updated risk long with mitigation measures, and any evaluation or review reports prepared over the period.	Quarterly	
Joint Programme/ Final Report	1 report/ 3 months after project completion	
Steering committee meeting	2 meetings, 1 <sup>st</sup> at the Steering Committee Approval date, 2 <sup>nd</sup> in August 2021	5000

### Reporting

The Joint Programme will have one quarterly progress report and one consolidated final report (including programmatic and financial reports). All reports will be endorsed by the Steering Committee and will be shared with all relevant stakeholders through the Steering Committee. Each participating UN organization will prepare narrative and financial reports in accordance with its policies and procedures, and operational policy guidance. For the quarterly progress narrative report, each agency may use its own narrative reporting. The project manager is responsible for the preparation of a consolidated narrative and financial report for submission to the Steering Committee. While for the consolidated final report, UNDP as the Coordinating Agency will be assigned for the preparation of a consolidated narrative and financial report for submission to the Steering Committee. The consolidated narrative and financial report should be clearly identified as a compilation of the participating UN organizations' narrative and financial reporting. The Steering Committee may agree that each participating UN organization prepares one report with proper introduction to the different parts of the report and attributions of funding and results.

## 8. Legal Context

This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of Iraq and UNDP, signed on October 20, 1976. All references in the SBAA to "Executing Agency" shall be deemed to refer to "Implementing Partner."

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

governance of UNDP shall apply.

The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations or UNDP concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

## **9. Phasing**

**Operational closure:** Each participating UN organization informs the Steering Committee in writing when all activities under the approved programmatic document have been completed. Each participating UN organization prepares a final narrative report after the completion of the activities. As part of the sustainability plan, the coordination mechanism will remain operational for a period of at least three months after operational closure of the Joint Programme.

**Financial closure:** The disposition of any balance of funds remaining at the end of programme implementation will be in accordance with the agreements between the participating UN organizations and the donor where applicable. The financial closure of accounts of each participating UN organization will be done in accordance with each UN organization's rules and procedures, within 12 months after the operational closure of the programme. Each participating organization shall issue a final certified financial report after all legal obligations are settled or terminated.

Table 2: Work Plan for Sustainable Solutions of Compost Production from Organic Waste in Iraq- Karbala Governorate

UNDAF Strategic Result:		UNDAF Priority 3: Environmental management and compliance with ratified international environmental treaties and obligations										
UNDAF Strategic Result Outcome:		UNDAF Priority Outcome 3.3: Government of Iraq has improved programmes for the prevention and control of pollution.										
Project Targets	Key Activities	Timeline						Planned budget				Implementing Partner
		M1	M2	M3	M4	M5	M6	Fund Code	Budget Code	Budget Description	Amount (USD)	
<b>Output 1: Enhanced knowledge of the local community on the Solid Waste Management (SWM) sector and potential for livelihood opportunities in the value chain</b>												
50 key stakeholders identified and participated in awareness activities representing local authorities, private sectors and NGOs disaggregated by gender	1.1 Identification and mapping of the key stakeholders that might be relevant for the Composting in the designated areas including the public sector, private sector, and local community.	X						30000	71200	International Consultants	4,000	UNDP
		X						30000	71300	Local Consultants	2,000	UNDP
		X					30000	71200	International Consultants	4,000	UNDP	
		X					30000	71300	Local Consultants	2,000	UNDP	
50 stakeholders (i.e. camp operators, NGOs, hotels, and community influencers) surveyed	1.2 Conduct surveys to measure the willingness of the camp operators, NGOs, hotels, and community influencers to participate in the collection process of the food waste generated in the city of Karbala.							30000	71200	International Consultants	4,000	UNDP
								30000	71300	Local Consultants	2,000	UNDP
	1.3 Assess the actual needs of the community to increase their awareness of introducing a waste separation mechanism of the organic waste during the religious events.				X			30000	71200	International Consultants	4,000	UNDP
					X			30000	71300	Local Consultants	2,000	UNDP
2 awareness campaign designed and conducted	1.4 Design and conduct awareness activities aiming at ensuring the delivery of a feasible quantity and good quality of the generated food waste.				X	X	30000	71600	Travel	2,000	UNDP	
					X	X			Training, Workshops, and Conference	20,000	UNEP	
<b>Sub Total Output 1</b>											<b>40,000</b>	
<b>Output 2: Enhanced capacities of local authorities on composting and waste management.</b>												
1 capacity assessment report on collecting and delivering compost to selected site conducted	2.1 Conduct assessment of the current capacity of the local authority in collecting the organic waste and deliver it to the selected site of composting process	X	X					30000	71200	International Consultants	6,000	UNDP
		X	X					30000	71300	Local Consultants	2,000	UNDP

25 staff working with waste management trained on organic waste handling and composting techniques (gender disaggregated, based on available staff)												30000	71200	International Consultants	7,000	UNDP
2.2 Prepare a standard operating procedure of compost handling and management and conduct training for different target groups at the local authorities.									X	X				Local Consultants	4,000	UNDP
<b>Sub Total Output 2</b>																
<b>19000</b>																
<b>Output 3: Business modality of compost production and marketing approaches are developed.</b>																
1 market supply and demand study developed										X				International Consultants	10,000	UNEP
3.1 Prepare a market supply and demand study of the compost in Iraq.									X	X				International Consultants	40,000	UNEP
2 awareness events on economic benefits for organic compost completed									X	X		30000	71300	Local Consultants	5,000	UNDP
3.2 Conduct consultations with the importers and sellers of the chemical fertilizers to assess their willingness to consider the compost as a better alternative for the current used fertilizers with conducting awareness on the benefits of using compost as a main fertilizer in agricultural sector; develop a national strategy for promoting waste to compost in Iraq.									X	X				Training, Workshops and Conference	20,000	UNEP
									X	X		30000	71600	Travel	2,000	UNDP
<b>Sub Total Output 3</b>																
<b>77,000</b>																
<b>Output 4: Construction of a pilot composting facility completed.</b>																
Pilot composting plant site selection completed including Environmental Impact Assessment									X	X				International Consultants	7,000	UNDP
4.1 Conduct EIA and site selection for the construction of the composting facility.									X	X				Local Consultants	4,000	UNDP
Pilot composting plant fully operational and handed over										X				Training, Workshops, and Conference	40,840	UNEP
4.2 Construction of composting facility which would serve as a pilot testing area for determining best approaches to the Iraqi context.									X	X		30000	72100	Contractual Services-Companies	300,000	UNDP
2 technical and economic evaluations completed on composting plant products in M3 and M4												30000	71200	International Consultants	6,000	UNDP
4.3 Technical and economic evaluation of pilot composting plant products.									X	X				Local Consultants	3,000	UNDP
4.4 Prepare a detailed design and specifications for the most												30000	71200	International Consultants	7,000	UNDP



**Table 3: Project Budget (Iraq UNDAF Funds Only)**

<b>Project Budget (Overall Budget)</b>	
<b>Category</b>	<b>Amount (US\$)</b>
1. Staff and other personnel costs	35,000
2. Contractual Services-Companies	300,000
3. Contractual services	122,000
4. Travel	4,000
5. Service Providers	80,840
6. General operating and other direct costs	18,907
<b>Total Project Costs</b>	<b>560,747</b>
7. Indirect support costs (no more than 7%)	39,253
<b>Sub Total Indirect Support Cost</b>	<b>39,253</b>
<b>GRAND TOTAL</b>	<b>600,000</b>

**1. UNDP Budget Breakdown**

<b>Project Budget (UNDP Budget)</b>	
<b>Category</b>	<b>Amount (US\$)</b>
1. Staff and other personnel costs	35,000
2. Contractual Services-Companies	300,000
3. Contractual services	72,000
4. Travel	4,000
5. Service Providers	0
6. General operating and other direct costs	18,907
<b>Total Project Costs</b>	<b>429,907</b>
7. Indirect support costs (no more than 7%)	30,093
<b>Sub Total Indirect Support Cost</b>	<b>30,093</b>
<b>GRAND TOTAL</b>	<b>460,000</b>

**2. UNEP Budget Breakdown**

<b>Project Budget (UNEP Budget)</b>	
<b>Category</b>	<b>Amount (US\$)</b>
1. Staff and other personnel costs	0
2. Contractual Services-Companies	0
3. Contractual services	50,000
4. Travel	0
5. Service Providers	80,840
6. General operating and other direct costs	0
<b>Total Project Costs</b>	<b>130,840</b>
7. Indirect support costs (no more than 7%)	9,160
<b>Sub Total Indirect Support Cost</b>	<b>9,160</b>
<b>GRAND TOTAL</b>	<b>140,000</b>