

KIRKUK DEBRIS MANAGEMENT WORKSHOP REPORT

May 2019











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1. Introduction

On 27 and 28 March 2019, the Governorate of Kirkuk in collaboration with the University of Kirkuk, and the support of the United Nations Assistance Mission in Iraq (UNAMI) and UN Environment Programme (UNEP), held a Debris Management Workshop at the University of Kirkuk, Iraq.

The purpose of the workshop was to bring together all relevant actors and stakeholders dealing with debris planning, management and implementation with the objective of supporting improved debris management in the Governorate of Kirkuk.

As indicated in the Workshop Concept note (Appendix A), the debris challenges faced by Kirkuk Governorate are different from those in urban centres such as Mosul and Anbar; with damaged houses, municipal buildings and infrastructure being spread out through a largely rural area. Thus, logistics, environmental protection and scheduling of debris works are all aspects that need to factor this specific rural context in debris planning.

2. Objective

The management of debris in the Governorate of Kirkuk is a pressing challenge since the presence of debris on people's properties is hindering their return to rehabilitate and reconstruct their homes. The removal of debris is therefore a prerequisite to the recovery of the conflict affected areas of Kirkuk Governorate.

At the same time, there are opportunities that can be gained from robust and proper debris planning, such as employment generation, cost reduction in subsequent reconstruction works and better environmental management. Consequently, it is critical that those responsible for debris planning are aware of these opportunities.

The primary objective of the debris management workshop was to support local authorities at the district and sub-district level in Kirkuk Governorate to develop debris management plans, which take into account the aforementioned factors as well as bring together key stakeholders that can both contribute to the plan and support its implementation.

The workshop was also a unique event gathering for the first time all relevant parties for the specific purpose of discussing and agreeing on fundamental issues relating to debris management; something that had not happened yet in the Governorate of Kirkuk.

3. Site Visit

Prior to the workshop, a one-day site visit to the heavily damaged villages in Multaqa subdistrict was conducted with the Head of Multaqa sub-district. This provided the workshop facilitators and other participants with a better understanding of the key challenges facing debris removal in typically damaged villages. This included:

- Major hindrance that debris poses for returnees to access their damaged homes (currently not possible due to debris) as well as basic services such as water and electricity;
- Very limited return of displaced persons to the damaged villages with only a handful of people starting to rebuild, driven by individual initiative;
- Sand and gravel for reconstruction purchased from Kirkuk is expensive due to transport costs and high raw materials prices;
- The eagerness of the local authorities to expedite debris removal to help facilitate the return of displaced people; and,
- The government is supporting the rehabilitation of basic services and infrastructure (water, electricity, roads and bridges) in the damaged villages but is not involved in debris removal from households.



Photo 1: Typical damage to homes in villages in rural Kirkuk where an estimated 9,400 homes have been destroyed.



Photo 2: UN Team visiting the destroyed Multaqa village with the head of the sub-district



Photo 3: Very few homeowners are returning to rebuild their houses, largely due to presence of debris hindering access and the lack of basic services (water & electricity).

Key data from the site visit include:

- A total of 131 villages in an area of 65km by 7km are extensively damaged with the majority of the buildings demolished to create a buffer zone between the Kurdish Peshmerga and ISIL during the hostilities;
- A total of 9,400 homes have been demolished and are lying ruin;
- Most of the 20,000 residents of Multaqa sub-district remain displaced since 2014;
- Price for sand gravel as delivered from Kirkuk is \$200/10m³; and,
- Price for stones/aggregate as delivered from Kirkuk is \$100 120/10m³.

4. Workshop Activities

The workshop was opened by the Governorate of Kirkuk, the University of Kirkuk and UN Environment Programme. In his opening statement, Mr. Rakan Al-Jaburi, acting Governor of Kirkuk, emphasised the need for a forward-looking vision involving all key stakeholders in dealing with Kirkuk's debris file which has so far received limited attention, and yet presents a major obstacle for the return of people displaced by the conflict. Mr. Al-Jaburi also underscored the need for a scientific approach in developing cost-effective debris recovery solutions and avoiding creating problems in the future through improper disposal. The need to remove the debris to help communities heal and overcome the pain of the conflict was also stressed. Welcoming remarks were also made by the President of Kirkuk University, and an overview of the objectives and expectations of the workshop was provided by UNEP.



Photos 4 and 5: The workshop, with more than 170 participants, was opened by the acting Governor of Kirkuk, Mr. Rakan Al-Jaburi (left), and the President of Kirkuk University, Dr. Abbas Taqi (right).

The workshop provided a platform for a broad range of discussions concerning debris management in individual districts, sub-districts as well as the Governorate level. The workshop agenda is available in Appendix C.

Key focus areas in the workshop discussions centred around helping participants shape their respective Debris Management Plans, including:

- Realising optimal recycling of debris, whilst recognising not all debris will be recycled due to lack of resources for recycling operations;
- Recognising the need to dispose of debris in an environmentally sound and safe manner;
- Appreciating that using mechanical equipment and contractors for the debris removal works can be quicker yet more expensive than using largely manual labour to support livelihoods through Cash for Work;
- Attention to health and safety of debris labourers and the public from hazards such as Explosive Remnants of War, unstable buildings and hazardous materials within the debris;
- Potential cost savings to be achieved by recycling the debris with crushers locally in the villages thus reducing transportation of debris to dumpsites and reducing the cost of importing raw materials from quarries; and,
- Leadership and commitment by the Governorate and its districts and sub-districts to manage and implement debris recovery works.



Photos 6 and 7: Researchers from Iraqi universities presenting the findings of their debris management studies including on use of recycled rubble in road construction.



Photo 8: Representative of Kirkuk Governorate presenting an overview of the status of damaged villages in Kirkuk governorate and estimated volumes of debris created.

5. Workshop Outcomes

The workshop was well attended with around 170 persons present in the opening morning session, and around 60-70 persons participating over the remaining two days. A wide array of stakeholders from the Governorate administration, conflict-affected districts and subdistricts, Kirkuk University's various engineering and science faculties, UN agencies and international NGOs as well as local interested parties attended the workshop. Around twenty percent (36 persons) of the participants were women. The participants list is included in Appendix D.

The two-day workshop included the following key elements:

Day One

Governor's Address

The first day of the workshop was opened by the Governor of Kirkuk who requested participants to identify sound debris management principles and propose practical recommendations to facilitate the return of displaced persons and ensure adherence to environmental management.

Technical Programme

Following the opening addresses, the rest of the first day was largely focussed on technical presentations by UN Environment and key debris specialists from Iraq.

Some of the key discussion highlights included:

- Debris removal will be an enabler for the return of displaced persons and help facilitate an impactful utilisation of the funds for rehabilitation of basic services provided by the central government in Baghdad to conflict-affected areas;
- Potential contamination of the debris from use of chemical weapons in certain locations was raised as a concern based on research by the University of Kirkuk. However, this information is confidential and cannot be released until approved by the Government;
- A Police representative advised that the police is tasked to monitor the disposal of debris so that it is not dumped in an uncontrolled manner; and,
- Setting up debris transfer stations within the sub-districts to reduce transport requirements.

Day Two

Pre-Meeting

Before the commencement of the second day of the workshop, a meeting was held with the key actors in debris management namely the governorate representatives, Kirkuk University, UNAMI and UNEP. The aim was to deliberate and formulate a set of next actions that can be used as a basis for discussions in the last session of the workshop on the key recommendations that could be endorsed by the workshop.

UNMAS Unexploded Ordinance Management

The opening session of day two was led by UN Mine Action Service (UNMAS) who shared their procedures for the checking, clearance and management of Unexploded Ordinance (UXO) and Improvised Explosive Devies (IEDs) as part of debris removal where they are finalising their procedures with the Directorate for Mine Action, Ministry of Defence and Iraq Security Forces. UNMAS has conducted a pilot project with UNDP for clearance of 53 residential houses in Mosul so should be ready to start in Kirkuk.

For residential buildings there are three main challenges with UXOs and IEDs:

- 1) On the surface of the debris;
- 2) Within the debris; and
- 3) Within the building itself.

The management of debris requires careful control; otherwise the debris can be recontaminated with debris that has not been cleared, as experienced by UNMAS elsewhere in Iraq. This will be a key issue in a rural village context.

District & Sub-District Presentations

The next session comprised presentations by heads of conflict-affected districts and subdistricts:

<u>Multaqa</u>: Of the sub-district's 36 villages, 26 villages have been completely destroyed and 10 villages suffered extensive damage. There is only one organisation operating in Multaqa which is inadequate given the scale of destruction and there are therefore significant delays in implementation. Request was made to either bring and engage more organisations or train more local people to do the work. Time is of the essence for residents to come back (otherwise they may decide never to return) but debris is a major hindrance. Proposes that each household is provided with USD \$1,000 to help them clear the debris and start the reconstruction.



Photos 9 and 10: The heads of the conflict-affected sub-districts in the Governorate of Kirkuk shared their current debris situation, challenges and ongoing works.

<u>Taza Khoramtu</u>: 24 villages were occupied by ISIL and 16 of these were damaged leading to nearly 2,000 houses being completely damaged. Appreciating that several years are needed to clear all the debris, suggests moving the debris to another location for recycling and thereby help accelerate return of the families. This will also help local communities restart farming which they are dependent on for their livelihoods, as agricultural land currently remains largely abandoned.

<u>Riyad</u>: Total of 160 villages in an area of 850km² of which 12 villages were destroyed generating more than 100,000m³ of concrete debris and equivalent volume of debris from other materials. Furthermore, the villages are heavily contaminated with explosive materials. The debris and military operations have heavily impacted agricultural activities. The removal of the debris is proceeding at very slow pace. Expressed interest in recycling the debris for use in rural road construction, especially as these are unpaved rural dirt roads which can be impassable during the rainy season.

Landfill Selection

Following the lunch break, a brief presentation on a GIS model developed using ArcGIS by the Civil Engineering Department of the University of Kirkuk was presented that can support selection of suitable landfill sites based on multiple criteria such as hydrogeology, capacity, environmental impacts etc. This can be also adapted for use in debris disposal site selection.

Cost-Benefit of Village based debris recycling

In the last session before an open forum plenary on the recommendations from the workshop, the UNEP debris advisor facilitated a discussion on a cost-benefit analysis for understanding whether it is economically worth recycling debris at a village level compared with disposal of all debris.

Workshop Recommendations

The last session of day two was facilitated by UNEP programme manager to discuss key next steps for the management of debris in Kirkuk based on a draft Workshop Recommendations document. Workshop participants endorsed the recommendations which set the road map for the next steps including establishing a Debris Working Group for Kirkuk Governorate. Refer to agreed recommendations in Appendix A.



Photo 11: Group photo

6. Workshop Conclusions

This was a unique opportunity for Kirkuk Governorate, conflict-affected districts and subdistricts and other key actors to come together for two days with the sole purpose of discussing, sharing, learning and developing debris management plans for their respective areas and projects.

A positive momentum emerged from the workshop with delegates eager and committed to embark on robust debris management planning taking into account cost, time, livelihoods and sound environmental management. Next steps are summarised in the Workshop Recommendations document which will be submitted to the Governor of Kirkuk for endorsement and shared with key central government institutions in Baghdad, donors and UN organisations.

Appendix A: Recommendations of the Kirkuk Workshop on Debris Management

The participants of a two-day workshop on debris management held in Kirkuk, Iraq, 27-28 March 2019 and organized by Kirkuk Governorate, the University of Kirkuk and the Ministry of Health and Environment in collaboration with the UN Assistance Mission for Iraq and the UN Environment Programme, agreed on the following recommendations to address the debris challenge in Kirkuk's conflict-affected areas. The recommendations will be shared with the Kirkuk authorities, the central government, and international partners supporting humanitarian and stabilization efforts for their consideration and possible actions for follow-up.

Scope of Work

The six million cubic meters of debris¹ generated by the ISIL conflict from the destruction of approximately 9,400 households will be the primary focus guiding Kirkuk debris management efforts over the short to medium-term (3-5 years). Specifically, debris recovery efforts are to focus on the following conflict-affected areas:

- the completely destroyed sub-district of Multaqa comprising 36 villages, and 99 completely destroyed villages spread across the five sub-districts of Daquq, Dibis, Taza, Riyad, and Rashad (9,409 households), generating about three million cubic meters of debris.
- 2) partially damaged villages in the three sub-districts of Zab, Huwaija and Al-Abassi which have also created an estimated three million cubic meters of debris.

In parallel, a governorate-wide debris management planning process will be initiated to create an integrated debris management system. Once the abovementioned debris recovery efforts in Kirkuk's conflict-affected areas are completed, these should be eventually merged under this larger governorate-wide debris planning framework. (Would it be possible to further elaborate on its interlinkages between these 3 processes, systems and frameworks?

Objective

Debris recovery efforts will focus at the household level to facilitate the return of 61,830 internally displaced persons² from within Kirkuk Governorate and consolidate the gains from ISIL's defeat. A specific aim of debris management efforts will be to create livelihood and employment opportunities for the returnees.

¹ The Department of Planning of Kirkuk Governorate estimates that two-thirds of the debris is comprised of concrete blocks and one-third of mud bricks.

² Source: IOM Displacement Tracking Matrix, 28 February 2019.

Debris recovery decision-making criteria

Debris recovery approaches may comprise of:

- debris disposal;
- debris recycling; and
- a mixed approach combining both disposal and recycling.

The following key factors should be considered in deciding on the most appropriate approach:

- cost;
- speed;
- livelihood and employment generation opportunities;
- occupational health and safety; and
- natural resource conservation and environmental protection.

Follow-up actions

No.	Action Point	Lead	Months
1	Establish a multi-stakeholder Debris Working Group to lead, plan and coordinate debris recovery efforts with a focus on addressing the debris situation in Kirkuk's conflict affected-areas with immediate actions to be carried out as indicated.	Governorat e Debris Working Group	36
2	Carry out material testing of crushed debris for use as recycled material in road construction, block paving and other technically appropriate uses. Recommended uses of recycled debris may include surfacing of unpaved rural roads, irrigation canals lining and construction/rehabilitation of hydraulic infrastructure. Based on testing results of crushed materials, Kirkuk Governorate may decide their use.	Governorat e of Kirkuk and University of Kirkuk	9
3	Conduct a rapid debris assessment including mapping of debris quantities, distribution and material types in the conflict-affected areas. This will help inform the prioritisation of debris recovery efforts in damaged villages and identification of cost-effective and environmentally suitable debris transfer and disposal sites.	Governorat e of Kirkuk and University of Kirkuk	6
4	Develop cost-benefit modelling scenarios comparing: i) recycling of debris on a District, sub-district and village basis using the Cash for Work approach and a small mobile crusher <i>vis-a-vis</i> ii) dumping the debris safely in suitably designated disposal sites. Recycling scenario to consider cost-benefit of substituting the raw quarry materials (i.e. gravel and sand) with recycled debris materials.	University of Kirkuk and Governorat e of Kirkuk	6
5	Develop procedures to deal with unexploded ordnance and improvised explosive devices found in the debris in accordance with the Guidelines of the National Mine Action Authority and the United Nations Mine Actions Service.	Civil Defence	3
6	Implement a debris recycling demonstration project using Cash for Work approach and a small mobile crusher to gain practical experience and draw lessons to help determine its appropriateness and scalability in Kirkuk context.	Governorat e with UN agencies and civil society	6

Debris Working Group

Immediate actions to be carried out by the Debris Working Group include:

- 1) Develop terms of reference for the Debris Working Group and appoint a chairman and members of the Group;
- 2) Identify suitable debris transfer and disposal sites based on established criteria;
- 3) Define and agree the legal procedures for gaining house owner approval and permission to remove the debris including some potential demolition;
- 4) Monitor and report debris clearance and disposal activities in the conflict affected areas.
- 5) Formally reach out to potential donors and implementing agencies (e.g. UNDP Stabilization, IOM, NRC) to gauge interest in funding and/or implementing debris recovery projects;
- 6) Prepare an overarching Debris Management Plan for Kirkuk Governorate

Needed Resources

Workshop participants recommend that the Kirkuk Governorate provide seed funding to support the activities of the proposed Debris Working Group. The estimated budget for the implementation of the abovementioned activities is IQD 90 million (USD \$75,000). This does not include the pilot debris recycling project which will need to be budgeted separately.

Workshop participants also proposed that of the IQD 10 billion Iraqi dinars (USD \$8.4 million) allocated by the central government for infrastructure reconstruction in the conflict-affected areas of Kirkuk Governorate, a sub-allotment is earmarked to support debris removal and recycling from households to help facilitate access for returnees. Additional funds could be allocated from the 2017 Petro-dollar account, which were recently freed-up. In addition, governorate authorities may mobilize its fleet of heavy equipment to support debris management activities in the conflict affected areas.

Donors and implementing partners, including humanitarian and stabilization actors (such as UNDP, IOM, NRC, UNMAS, USAID, ECHO and others), are also called upon to assist in debris recovery efforts, including through the procurement of mobile debris crushers for community-based recycling activities that would be implemented in collaboration with local authorities on a rotational basis.

Appendix B: Kirkuk Debris Management Workshop Concept Note

Purpose

The management of debris in the Governorate of Kirkuk will be a key challenge as well as an opportunity in the rehabilitation and reconstruction of areas that were damaged by ISIS and the subsequent military operations.

The objective of this Debris Management Workshop is to assist key stakeholders in the four Districts of the Governorate of Kirkuk (Debas, Hawiga, Kirkuk and Daquq) in their development of debris management plans which considers a range of socio-economic, logistical and environmental factors as well as bringing together key stakeholders that can both contribute to the plan and support implementation.

There will be the opportunity to share current debris management works and plans amongst the workshop participants, hear from ongoing debris works and learn from other similar debris management programmes which have already taken place in Iraq (such as in <u>Anbar</u>, and <u>Mosul</u>) and in other conflict affected contexts.

Subsequently a session on potential collaboration between the Districts will be facilitated to seek opportunities for the sharing of resources, approaches and experiences.

Background

Kirkuk Governorate suffered extensive damage during the occupation by ISIS and the subsequent military operations. Hawiga District was almost destroyed by ISIS.

Curriculum

The following curriculum is proposed for the Kirkuk Debris Workshop. During the workshop key issues will be discussed to help participants shape their respective Debris Management Plans, including:

- Identification of the problems and the context including the health and safety of debris labourers, legal procedures for debris clearance, hazardous materials such as asbestos and Explosive Remnants of War, burden of debris transportation, unstable buildings and cultural heritage;
- Desired results the debris management plan wants to achieve, including cost-saving and the recycling of building materials;
- Identification of key stakeholders and their roles, needs and responsibilities; and,
- Opportunities for collaboration between the Districts on the planning and implementation of debris programmes.

Funding Awareness

Introduction

The management of debris in the Governorate of Kirkuk will be a key challenge as well as an opportunity in the rehabilitation and reconstruction of areas that were damaged by ISIS and the subsequent military operations.

For this purpose and on the request of the Government of Kirkuk, a Debris Management Workshop is planned by UNAMI and UNEP for late March 2019 to assist key stakeholders in the four conflict-affected districts of Debas, Hawiga, Kirkuk and Daquq in their development of debris management plans.

Current Demolition & Debris Challenges

Challenges in the demolition of damaged buildings and subsequent debris removal with recycling in the Kirkuk area are not uncommon in debris management from other post-conflict cities in both Iraq and globally:

UXO and IEDs	Unexploded Ordinance and Improvised Explosive Devices is still within the debris and will be uncovered during the works leading to safety risks and delays
Demolition consent	Administrative burden that can lead to delays and separate issues of working 'around' a building not for demolition
Logistics & Transportation	Huge amount of trucking required for the removal of debris and then import of quarry materials for the subsequent reconstruction works – traffic safety, emissions, costs
Recycling Debris	Quality recycled debris requires good sorting and separation only achieved by manual labour and is a time-consuming activity – but benefits in creating quick jobs and providing a recycled construction material

There are systems, procedures, protocols and experiences available to support Kirkuk in overcoming these challenges, which will form part of the planned Debris Workshop in Kirkuk.

Workshop Outcomes

Based on experience of similar debris workshops in Mosul and Ramadi (2018), the outcome from the Kirkuk workshop is envisaged to have motivated Governorate and Municipal authorities into action for debris removal. This momentum should be encouraged with the opportunity to act upon on some of the key conclusions from the workshop such as debris pilot projects and development of debris plans.



Photo 12: Anbar workshop on debris management, November 2018.

Mobilizing Funding

It is proposed that donors and technical partners attending the Kirkuk Debris Workshop of March 2019 are prepared to assist Kirkuk authorities in developing and receiving funding proposals to carry out debris management works. These would all seek to solve the challenges in debris removal and recycling and pave the way for larger scale debris works.

Debris Management Planning for Kirkuk

Governorate and Municipal authorities benefit from having a holistic debris management plan which provides a framework for the debris works to work within. Development of such a Plan is often the first step towards debris management at a higher level. <u>Typical fund request is in the region of US\$20,000.</u>

(Pilot) Debris Removal and Recycling Projects

Removing debris safely with a focus on livelihoods and employment is key to supporting communities affected by the conflict. Mobilizing such communities brings significant benefits to recovery as well as providing direct support to returning homeowners, enabling them to start reconstruction. Debris removal and recycling projects can be implemented in a range of sizes and such pilot projects can help resolve challenges, providing a framework for subsequent debris projects. Typical fund request is in the region of US\$50,000 - \$250,000.

Use of Recycled Debris Materials

To support the end use of the recycled debris materials created from the debris projects, it is common to demonstrate the use of the recycled debris materials in actual (re)construction works such as road rehabilitation. <u>Typical fund request is in the region of US\$50,000.</u>

Appendix C: Workshop Agenda

Wednesday, 27 March 2019			
Time	Theme		
09:30	Opening Remarks:		
	- By Governor		
	- By President of Kirkuk University		
	- UN Environment Programme		
10:00	Debris Policy: [Government of Kirkuk]		
	- Overview		
	- Challenges to Kirkuk Situation		
	- Government expectations from the Debris Workshop		
10:30	What is Debris? [UNEP]		
	- General Information Session		
	- Debris quantifications and locations		
	- Debris Management Options		
11:00	Coffee Break and Group Photo		
11:30	Debris Research: [University of Kirkuk]		
	- Recycling		
	- Practical Tips		
	- Demonstration		
12.30	Lessons in Debris Management: [UNEP]		
	- Examples from Iraq (Mosul, Ramadi) and Syria		
	- Progress on debris removal, recycling and disposal in Iraq		
13:00	Lunch		
14:00	Debris Management Research by Anbar and Mosul University		
15:00	Debris Planning [UNEP]		
	- Key Parameters (Logistics, UXO, Recycling, Debris Sites, etc)		
	- Selection of Debris Options		
	- First steps in debris management planning		

Thursday, 28 March 2019				
Time	Theme			
09.30	Debris Risks: [UNM.			
	- Remnants of War			
	- Unexploded Ordnances & Improvised Explosive Devices			
	- Demining			
	- Logistics			
	- Hazardous Materials			
	- Health and Safety			
	- Quality Assurance			
11.00	Coffee Break			
11:30 Presentations by representatives from Debas, Hawiga, Kirkuk and				
	- Current Debris Activities			
	- Debris quantity estimates			
	- Overview of debris recovery and disposal activities;			
	- Define key debris challenges and needs (financial, technical, legal); and,			
	- Municipality vision, objectives and action plan to deal with the debris.			
13:00	Lunch			
14:00	Next Steps for Debris Management: [UNEP]			
	Discussion and adoption of workshop recommendations			
15:00	Awarding of Certificates [UNEP]			
	- By UNAMI\DCO and UNEP			
15:30	Close of Day			

Appendix D: Workshop Participants List

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