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GUIDANCE NOTE
DEBRIS MANAGEMENT

CRISIS PREVENTION AND RECOVERY

United Nations Development Programme

Table of Contents

Cover photo: Haitian men and women work in tandem in Fort National, Port-au-Prince, in order to complete the arduous task of shifting debris generated by the 2010 earthquake, sometimes one piece at time, to a temporary collection site, before the debris is transported to recycling or dumping sites. Photo credit: UNDP Haiti.

OVERVIEW

Focussing on urgent post-crisis and post-disaster assistance, this guidance note provides practical advice to United Nations Development Programme (UNDP) Country Offices (COs) on how to plan, design and implement a short-term project that swiftly links governments and communities in the assessment, clearance, recycling and management of debris following a significant national catastrophe.

When governments and communities are supported by well-designed and timely interventions, both nations and communities are assisted to 'build back better.' The UNDP post-crisis approach aims to build capacities within national and local institutions and facilitate partnerships between government, civil society, the private sector and local communities. This enables local social, economic, institutional and physical assets to be strengthened and made more resilient in the future.

To help countries and communities meet these challenges, Bureau for Crisis Prevention and Recovery (BCPR) has developed a range of guidance notes to help UNDP COs develop and implement recovery activities rapidly in the immediate aftermath of a disaster or conflict. Each guidance note focuses on a UNDP 'signature product', or niche area of programming, in which UNDP has the mandate, comparative advantage, competencies and skills in place to be able to rapidly design and implement a project of assistance to support crisis-affected governments and communities. The guidance notes in the 'signature product' series are principally intended as an internal resource that will strengthen and accelerate UNDP's programmatic response in crisis and post-crisis settings.

This guidance note forms one of six practically oriented documents. Others in the series include 'Emergency Employment and Enterprise Recovery', Community Infrastructure Rehabilitation', 'Restoration of Local Governance Functions', 'National Recovery Planning and Coordination' and 'Aid Management'. These notes can be used as tools to guide the development of individual projects targeted towards specific needs, and/or provide a basis for the design of a more integrated and comprehensive programme of early recovery measures.

Formulation of this Guidance Note

In formulating this guidance note UNDP's recent experiences in the design and implementation of post-crisis debris management projects has been reviewed in Haiti, Indonesia, Lebanon, the Occupied Palestinian Territory (oPt), and Pakistan. Based on those countries, case studies and comparative experience papers formed the core material for the preparation of this document. Further interviews were conducted with the practitioners involved in these projects, including technical experts at CO, regional, and headquarters levels to obtain the lessons learned and contributions to best practice. It was then subject to consultation throughout UNDP, for internal and external peer review, and finally validation.

These Guidance Notes are 'living' documents. They have been written in such a manner as to be easy to update with technical and operational lessons that emerge in the light of ongoing experience. To share examples, make a contribution to the note or submit questions please email UNDP at signature.products@undp.org.

Practitioner's Guide

The table below provides an overview of the content in this note:

TABLE 1. CONTENT OVERVIEW

CONCEPTUAL FRAMEWORK	Defines the conceptual framework for debris management as a UNDP 'signature product'.
PLANNING	This section presents the main considerations when planning a debris management intervention, following a structure that closely resembles the standard UNDP project document template.
IMPLEMENTATION	Presents the main issues and challenges that arise, as well as some of the approaches and techniques to employ when implementation a debris management project.
LESSONS LEARNED	Highlights the key lessons learned from recent UNDP engagement in debris management programming.
ANNEXES	General annexes include a glossary of key terms and list of acronyms and abbreviations. Additional resources are hyperlinked throughout the document; most can be accessed by UNDP CO staff on the Debris Management page of the UNDP intranet site for Signature Products.

1. THE CONCEPTUAL FRAMEWORK

UNDP's multiple debris management initiatives in Lebanon have all centered on the principle of community ownership and engagement. As part of the Nahr-El-Bared Camp (NBC) project, shown here, community members shown are engaged in the process of sorting and crushing some 500,000 cubic meters of debris, for further treatment and reuse. Photo credit: UNDP Lebanon.

1.1. DEBRIS MANAGEMENT - A UNDP SIGNATURE PRODUCT

Natural disasters and man-made conflicts often generate huge volumes of debris. Destruction of houses and public infrastructure due to a flood, earthquake or conflict can contribute to insecurity, displacement of populations, and the interruption of public services. Clearing away crisis-generated debris is a critical part of relief and recovery efforts. It is an area of work that normally commences once search and rescue operations have ended. Experience shows that rubble removal is often a painfully slow and tedious process, which can seriously hamper economic and social recovery.

Although waste and debris management is essentially a government responsibility, authorities may be overwhelmed in the immediate aftermath of a major disaster. The long-standing strategic partnership that UNDP has with government agencies is a strong advantage and frequently leads to national authorities calling on UNDP on the basis of its experience in debris removal and waste management to assist in a range of ways. This may cover planning or coordination functions, the provision of technical assistance, strengthening institutional policies and systems, or the practical clearance and recycling of debris – or a combination of all of these activities. In country, UNDP is usually able to draw on its extensive experience of working with local communities and its deep understanding of existing economic and social conditions and norms, leading to the development of sustainable and culturally-appropriate solutions.

By providing rapid and responsive support, UNDP assists governments to reach out and support the participation of local communities in the clearance of and management of rubble and debris in the immediate aftermath of a disaster. Taking local context, needs and circumstances as the starting point, the overall goal is to improve the social and economic conditions required for long-term human development.

Debris management projects directly support affected citizens to rebuild their communities, reflecting their own priorities, and links their engagement to recovery and development planning. New knowledge and skills are learned that empower them to expand their opportunities and choices. Within this framework, UNDP highlights the importance of deepening resilience by 'building back better', through swift and effective initiatives. The most effective and sustainable projects exhibit a strong adherence to the following principles which are referred to in more detail throughout the guidance note:

1. **Maximizing the engagement and skills development of local people and communities** – significant sections of this guidance note focus attention on the ways in which this can be best achieved, for instance, by incorporating into project design a training and job creation element with emphasis on the most vulnerable, internally displaced people (IDPs), former-combatants and young people. Labour-intensive methods can be used to help generate short-term employment opportunities, providing people with new skills in the process. Ensuring that employment is provided for the most vulnerable after a disaster offers a temporary solace, especially in light of the fact that it is most frequently the poorest members of the community that are hardest hit (see the Guidance Note on Emergency Employment and Enterprise Recovery).

2. **Empowerment of women and promotion of gender equality** – increasing the participation of women through consultation, prioritization and in the training, employment and planning aspects of debris management initiatives.

3. **Building capacity and social capital through effective coordination, communications and partnerships** – this entails cultivating and maintaining extensive relationships with local non-governmental organizations (NGOs), community based organizations (CBOs), local authorities and the private sector. Their collective engagement is essential to ensure the rapid clearance of rubble, promote social cohesion and facilitate the quick return of the community to normal. In support to the United Nations Country Team (UNCT), led by the Resident Coordinator or Humanitarian Coordinator (when the Humanitarian Country Team is activated), UNDP also engages as the cluster lead on early recovery and plays an important role in the socio-economic reintegration of IDPs and ex-combatants. To all of these roles, UNDP brings a wealth of experience in partnering with a wide range of agencies to implement debris management activities on a large scale;

4. **Environmental protection** – requires a commitment to not only conserve natural resources but to innovate at all levels across the environmental and energy spectrum. Maximizing the recycling of debris forms an important aspect in this regard.

5. **Conflict sensitivity** – the cases studied in the preparation of this guidance note (as well as others in the signature products series) point to the prospect that debris management projects can support both community cohesion and conflict resolution.

6. **Investing in disaster risk reduction (DRR)** – as national and local authorities and local communities pick up the pieces, more systematic, tried and tested principles and strategies of DRR can be integrated into recovery projects and processes.

Hence, despite their overwhelmingly devastating impact, disasters also provide opportunities for constructive change. Apart from quickly getting the community back on its feet, rapid recovery, including debris management projects, can make a contribution towards strengthening resilience in future.

1.2. WHAT CONSTITUTES DEBRIS MANAGEMENT?

First, it is necessary to distinguish between "debris" and the broader category of "disaster waste." UNDP follows the disaster waste management guidelines developed by the Office for Coordination of Humanitarian Affairs (OCHA), the United Nations Environment Programme (UNEP) and the Swedish Civil Contingencies Agency (MSB), which define debris as "a mixture of building waste and rubble typically arising from damaged buildings and their demolition. This waste stream can include natural materials such as clay and mud, trees, branches, bushes, etc."

The broader term of disaster waste refers to "all solid and liquid waste generated from a disaster, not limited to debris: concrete, steel, wood, clay, tar elements from damaged buildings, infrastructure, household furnishings, parts from power and telephone grids such as electrical poles, wire, electronic equipment, transformers, parts from water and sewerage distribution centres, natural debris such as trees, mud and plants, chemicals, dyes and other raw materials from industries and workshops, waste from relief operations, damaged boats, cars, buses, bicycles, unexploded ordnances (UX, packaging materials, pesticides and fertilizers, paint, varnish and solvents and healthcare waste." Some types of non-hazardous debris can be reused by crisis-affected communities for community infrastructure rehabilitation or development, for example, to reinforce river or canal embankments, rebuild containment walls, etc. and can represent an asset towards recovery.

At this stage is also important to differentiate between debris/rubble removal and debris management: debris removal is an immediate after-crisis humanitarian activity while debris management is a medium to long-term activity focused on development (skills building, planning, legal aspects, capacity building, etc.). Therefore, the guidance note uses the term debris management, which includes debris removal in its definition.

UNDP/PAPP and its partners ensured that sorting of debris was performed on-site through labour-intensive methods before it was sent on to crushing or dumping sites, which gave local home owners the opportunity to reclaim personal belongings and recyclable materials. Of 480,000 tons of debris removed through the project, the majority was crushed and eventually reused in road rehabilitation initiatives by UNDP, NGOs, and local institutions. Photo credit: UNDP PAPP

2. THE PLANNING PHASE: DEVELOPING THE PROJECT DOCUMENT

These photos illustrate two different ways in which UNDP's debris management work is benefiting the rehabilitation of the Carrefour Feuilles neighborhood in Haiti's capital, Port-au-Prince. The left-hand photo shows an alley cleared of debris. The right-hand photo shows the rehabilitation of the same alley through the return of the same debris after being recycled into 'adoquins' (interlocks). Photo credit: UNDP Haiti

This section focuses on a number of key issues to take into account when developing a project document for debris management. The related stages of the UNDP project management cycle, as detailed in the UNDP Programme and Operations Policies and Procedures (POPP) are the 'Justifying a project' and 'Defining a project' stages. The main sub-sections fall under the familiar titles of: 1) Situation Analysis (including Needs Assessment); 2) Programme Strategy; 3) Results Framework; 4) Risk Assessment; 5) Management Arrangements; 6) Operational Support; 7) Partnerships; 8) Monitoring and Evaluation; 9) Resource Mobilization; and 10) Communications Strategy. A quick checklist for the planning phase concludes the section.

2.1. THE SITUATION ANALYSIS (INCLUDING NEEDS ASSESSMENT)

The first step in formulating a debris management project is undertaking the situation analysis. The situation analysis scopes out the general political, institutional, economic and social context, and then, within a post crisis/post disaster setting, moves directly into a more penetrating initial analysis of the impact. The situation analysis introduces the urgent recovery needs which the project will seek to address. The rationale for UNDP assistance in the area of debris management is set out alongside its comparative advantages and fit within a more comprehensive early recovery and development framework. One section should be dedicated to the strategic business case for engagement of UNDP under the United Nations Development Assistance Framework (UNDAF), as a member of the UNCT and/or as coordinator of the Cluster Working Group for Early Recovery (CWGER) at the country level. The situation analysis may be informed by a review of primary and secondary data, reports of trusted third-party organizations, government statistics or other relevant local survey information.

Undertaking the Needs Assessment

In the aftermath of a major disaster an assessment of damages will need to be carried out, and information from that can serve to elaborate the situation analysis section of the project document. More often than not, full information arising from a detailed needs assessment may not be available in the first instance. One of the key challenges is to involve communities, enabling them to add their own perspectives, insights and local wisdom. The aim is to 'build back better' so that the affected communities are more resilient to natural disasters in the future.

In order to determine the appropriate implementation strategy for debris management, a rapid assessment should take place which considers a range of core issues, including those listed in the table below. For each issue, a number of questions are provided which may be helpful when designing the assessment.

TABLE 2. KEY QUESTIONS FOR RAPID ASSESSMENT

Issue	Questions	Objective of the questions
Legal situation in the country/ territory	• Who will be legally responsible for debris management? (e.g. in the oPt there were two governments) • Who will be the final owner of the collected rubble and recycled material? • Is there a need to have a legal local definition, laws, or regulation for waste and debris handling? • Are there coordination mechanisms in place among the various actors? • What permits exist and who issues the permits (Mayor or Ministry)? • What to do with abandoned houses for which no owner can be found? • Is there a cadastre? Are there maps, GPS coordinates?	• Update or establish criteria and procedures for debris management; and • Consider any waiver of the current laws and regulations
Projection of debris quantity and quality (types)	• What is the estimated total quantity or volume of rubble? • Is the debris dispersed or geographically concentrated? • What are some key characteristics of the geographical areas where debris is to be removed (including security)? • What is to be done with debris in ravines? • Are there inventories being done by others? How can UNDP use those? • How many houses need to be demolished (red houses)? • What are the criteria for demolition? Who establishes these criteria? • How many houses need to be repaired (yellow houses)? • Which buildings have priority? • Are there any multi-storeyed unsafe (beyond repair) buildings? • How many children, women are affected? • Is the debris mixed with other waste? What is the quality of debris in specific zones of intervention? • Does the debris contain private belongings? • Are there hazardous, poisonous of harmful materials such as uranium, white phosphorus, asbestos, mines or other UXO present? • What is the best course of action for dealing with corpses (if any) under the rubble? • What is the expected timeframe for debris removal and other activities per selected zone of intervention, given that timing can vary greatly due to geography and other factors? • Are there mechanisms in place to manage supply and demand for crushed debris? (i.e. a debris market place?)	• Prioritise debris removal actions; • Determine different strategies for rubble and hazardous waste collection and recycling; • Estimate the length of time that rubble removal will take; • Prioritize those areas where people are worst affected by debris and where houses are more difficult to reach and might be left out by interventions of other actors; • Review government priorities and find out what happens to areas left out of the prioritisation process; • Assess the expected timeframe needed for debris removal and other activities; and • Assess each structure (e.g. label red, yellow and green houses) and determine a baseline for understanding the quantity of debris.

TABLE 2. KEY QUESTIONS FOR RAPID ASSESSMENT (CONT.)		
Issue	**Questions**	**Objective of the questions**
State of public infrastructure, including landfills and dumping sites	• Are there access roads to the affected areas, and from affected areas to a dump site? • Is security infrastructure intact? • Are there landfills? What is their capacity? • Specific disposal sites for toxic waste or other?	• Determine feasibility of central storage areas or various staging areas (taking into consideration environmental concerns), and transportation routes to/from the major affected areas; • Determine feasibility of disposal options and need for specialised expertise; and
Capacity for removal, sorting and recycling	• How much importance/resources are allocated by the national government for debris management initiatives? • How much technical capacity do the authorities have to remove/ recycle rubble? What kind of equipment is available? What type of trucks is being used? (Roll on roll off or dump trucks?) • Are NGOs/UN agencies present in-country who has rubble removal experience? • Are loaders and crushers available? (e.g. macro, micro and mini crushers) • Are there local private contractors? Is there potential for public/ private partnerships? • Which type/location of debris should be handled first? (High risk buildings, debris that is blocking watersheds and roads, UXO, etc.)? • Which temporary facilities are needed? • Have there been environmental impact assessments done for debris disposal in rivers/ocean? • Are there official debris recycling criteria? • Are there norms for construction materials made out of debris?	• Determine implementation modalities and identify potential partners.
Institutional capacity, policy and legislation	• Is there a debris management strategy? • Have responsibilities for debris management been defined? • Is there national or local legislation with respect to debris or environmental regulations to guide debris management?	• Determine the need for institutional support.

Debris from earthquakes produces large volumes of rubble compared to other types of waste. Flooding (as occurred in Pakistan and Indonesia), on the other hand, leads to less rubble but to larger amounts of household waste, mixed with mud, clay and gravel and sometimes with hazardous materials. In certain cases, where areas are infected with landmines, flood may wash away mines and become a serious threat to lives. Conflict-related debris (for example, in the oPt and Lebanon) can cause widespread damage to buildings and infrastructure and an increased risk of accidents from UXO. Local engineers, building contractors or experienced debris removal organizations can help in providing an accurate estimate of the quantity and volume of debris as they may have developed tables of quantities per type of building in a crisis-affected area, based on a break-down of average size and type of building elements (floor, walls, foundation, roof etc.).

Based on the assessment, the appropriate scope and components of the debris management strategy can be determined. UNDP should work closely with the national government and local authorities to compare and discuss priorities for debris management and cultivate buy-in and leadership at an early stage. Consultations and engagement of the affected communities can take time. For a more detailed explanation of the benefits of full community participation, please refer to the Guidance Note on Community Infrastructure Rehabilitation.

2.2. PROGRAMME STRATEGY

The programme strategy should outline briefly the main aims of the debris management project, including its purpose within the early recovery framework. It should attempt to summarise the over-arching outcome and effect that the project is striving towards and how each of the outputs which it will deliver contribute to the attainment of the outcome. For example, it should be clear how the project will work with and help build sustainable national and local capacities and how the project will integrate within national development plans and priorities. It should make reference to other UN and UNDP projects, how it seeks to complement them and incorporate cross-cutting issues, for example, the six points outlined in section 1.1 above.

Debris management projects also link directly to UNDP's portfolios for strengthened governance capacity, environmental sustainability and poverty reduction outcomes. For these reasons it is critical that all UNDP CO programme units are engaged in the development of the project and how it contributes to the work of the early recovery sector/cluster. The empowerment of women, community participation and a focus on the poor are core features of the UNDP's approach and need to be prominently reflected throughout the planning phase.

Both programmatically and operationally, UNDP's support to debris management and recycling is usually part of a wider recovery framework that most likely goes well beyond the removal and recycling of debris. The approach favours a labour-intensive and community-driven debris removal process that provides short-term employment to the local crisis-affected population, in particular, to the poorest households.

In terms of debris management, the most common approach that UNDP has used is community-focussed with small disposal sites and temporary storage sites, where the sorting or processing of debris takes place locally. However, this should take place as much as possible at the demolition site itself to avoid incurring high transportation costs. From smaller sites, debris is then sent to final processing or disposal sites/landfills. In Haiti, rubble storage and large-scale recycling was established in urban areas under the UN joint programme. Finally, the community approach has the benefit that the volume of unrecyclable waste is minimized and the reuse of recovered materials is maximized on-site, close to the market where there is demand for recycled materials. Often, on-site processing is combined with labour-intensive working activities that make use of the recovered material, for example undamaged and good quality bricks to be reused for rebuilding a market site.

Use of local debris staging and recycling sites that favour local enterprise can reduce the initial burden on central storage sites or landfills (which require a different selection process, including an environmental impact assessment), as well as on transport routes. It can also avoid uncontrolled debris removal and illegal disposal. Large-scale crises tend to create population displacement and proper debris management can be the entry point for a structured return to the neighborhoods. In addition, as most governments tend to focus on the largest debris concentrations, particularly if these are located in or near city centres and block main arteries, UNDP can help ensure that needs of poor neighborhoods with difficult access to city centres, or agricultural land on which the rural poor depend, are addressed, since they generally receive little attention, at least initially. In the context of its inclusiveness and poverty alleviation mandate, UNDP focuses primarily on such priorities while at the same time working closely with the local authorities and communities. For example in Haiti, in order to avoid any collateral damage to human lives, UNDP conducted basic training on self-demolition to families who were eager to commence the demolition themselves without any external support.

Disaster risk reduction, including risk mapping, should ideally be a standard component of the strategy from the beginning of project implementation, to ensure that people return to safe areas. This comprehensive developmental approach, allied to emergency employment creation, enterprise recovery, and community infrastructure rehabilitation, reaches well beyond debris removal.

Experiences from Haiti, Indonesia, Lebanon and the oPt have also shown that most of the material that has been collected is recyclable or reusable. Recyclers can crush rubble and convert it into sub-base material for roads and other non-structural purposes.

In Haiti, on average, 30 percent of debris collected has been reused as construction material. UNDP's support initially starts with the clearance of main roads and public spaces, often through emergency employment work schemes in the early stages of the post-crisis response, and then moves onto the demolition and clearance of damaged private property, which requires a needs assessment of the zones and the collection of demolition permits, as well as supporting the establishment of disposal and recycling sites.

Unfortunately, this can result in initially slow progress of debris removal. In some instances, mechanical removal strategies through private contractors or government entities may be quicker and allow for faster rebuilding. However this might be problematic in areas with high levels of poverty and slum dwellings or historical areas as there is a lack of space for heavy machinery to enter, so cash for work /production might be more suitable. In many cases, a combination of both methods might be used.

2.3. RESULTS FRAMEWORK

The table below provides an indicative results framework for a debris management project based on an example of outcomes, outputs and activities. Local circumstances should determine if these outcomes, outputs or activities are appropriate, or alternative ones need to be developed to better suit the situation and context.

TABLE 3. INDICATIVE RESULTS FRAMEWORK
OUTCOME: REVIVAL AND STABILIZATION OF CRISIS AFFECTED COMMUNITIES

Outputs	Indicators	Objective of the questions
Effective assessment management	• Assessment phase initiated; • Recruitment of relevant expertise; • Partnership structures emerge; and • Community and stakeholder consultations	• Set up the project team: local engineers, community workers, communication and reporting officers; • Set up monitoring mechanisms, including emergency employment database; • Select and contract service providers; • Regular status updates for donors to inform them about implementation; and • Organize regular (joint) site visit for Ambassadors, members of Government, etc.
Safe removal and re-use of debris	• Quantity of rubble removed; • Quantity of recycled or re-used debris • Number of red houses demolished • Number of removed UXO; • Quantity of removed hazardous materials (asbestos, heavy metals, etc.); and • Number of community infrastructure sites rehabilitated with products made out of debris (i.e. pavement stones).	• Delineate affected geographical areas (neighborhoods, other administrative boundaries) including prioritisation discussions; • Removal and transport of rubble to operating site; • Developing Request for Proposals for construction of landfill or large storage and recycling site that meets environmental standards, with government approval; • Develop guidelines for site management; • Provide assessment and mapping of UXO, • Explosive Remnants of War or toxic waste; • Assess structural integrity of buildings and develop guidelines for demolition; • Launch a communication strategy to inform the public on the safe removal and reuse of debris as one key activity of the project; • Set health and safety standards for workers; • Provide crushers (these can be either rented or procured); and • Engage in community planning to identify community infrastructure rehabilitation projects for which products made of debris can be used (i.e. corridors with pavement stones).

TABLE 3. INDICATIVE RESULTS FRAMEWORK (CONT.) OUTCOME: REVIVAL AND STABILIZATION OF CRISIS AFFECTED COMMUNITIES		
Outputs	**Indicators**	**Objective of the questions**
Economic revitalization	• Number of short-term emergency jobs created (men and women); • Number of people trained in debris recycling and enterprise management; • Number of micro-enterprises created in the removal and recycling of debris; and • Gender: disaggregation of data is required to determine the number of women who benefited from emergency employment, training in debris recycling and training in micro-entrepreneurship.	• Develop guidelines for labour intensive debris collection and recycling; • Undertake environmental assessment for safe use /reuse and disposal of debris; and • Develop livelihoods projects in affected zones, in particular viable recycling business start-ups or projects in solid waste management • Work with members of the community to rehabilitate community infrastructure.
Institutional strengthening	• Improved coordination and information management by government; • Policy framework on debris; and Number of trained staff: men and women; and • National systems and partnership arrangements.	• Support nationally owned debris management plans; • Deploy technical expertise to strengthen government capacity on key aspects: debris assessment, material testing and management; • Support government in organising roundtable stakeholder coordination meetings for discussions on key aspects; and • Organize knowledge exchange events where Ministry of Public Works can exchange experiences on debris recycling and re-use. (e.g. in Chile, Lebanon and Haiti).

2.4. IDENTIFYING AND MITIGATING RISKS

Risk, as defined in UNDP policy, is the possibility that an event would occur and affect the achievement of outputs. As such, it can represent a threat or a missed opportunity. Risk is a major factor to be considered in designing any project: detailed guidance is available in the Enterprise Risk Management section of the UNDP POPP, which should be reviewed thoroughly.

A careful appreciation of the risks and strategies to mitigate against them should be worked through systematically by the CO before embarking on the project. The table below outlines some of the common risks that might be expected to arise in the course of a debris management project as well as some measures aimed at their mitigation. It is important to note that these are not exhaustive, and particular circumstances will doubtlessly exist within each new context.

TABLE 4. COMMON RISKS AND ASSOCIATED MITIGATION MEASURES

Risk classification	Nature of risk	Risk mitigation
Reputational	• Slow UNDP delivery; • Maintaining adequate quality control while delivering large scale programme; • Lack of UNDP in-country experience in debris management; • Low business case (or 'development case') for UNDP to work on debris management; • Low or untested implementation capacity of local partners; • Perceptions within local private sector that UNDP will distort the market when engaging NGOs; • Perceptions within local private sector that they are better placed to perform debris management activities; and • Different partners working in the same zone/ duplication.	• Using UNDP SURGE capacity support and UNDP fast track operational procedures; • Applying robust monitoring system for capacity building of local NGOs/CBOs; • Referring to past institutional experiences; • Pre-qualification of NGOs; • Communications strategy to manage expectations and to explain concept/ approach; and • Set-up a Debris Management Working Group which coordinates all efforts & ensures clear demarcation of zones (e.g. through use of KMZ file format for displaying geographic data on Google Earth).
Political	• Absence of clear government policy for debris management leading to random depositing of rubble on the road; • Lack of a coordinated and structured recovery strategy; • Lack of guidelines and norms on how to re-use debris in construction materials; and • Absence of legal clarity or common legal framework on how to deal with demolition permits (e.g. political authority/level, documentation, variation in rules/norms across communities).	• Institutional support to the government to strengthen capacity (including quick establishment of an early recovery cluster or government-led debris management working group) and/or using a community based approach; and • Support to Government policy framework.
Security	• Lack of access to targeted areas by UNDP due to insecurity and violence (mainly for conflict countries).	• Delivering through intermediaries such as local government bodies, local NGOs, CBOs, or private sector organizations.
Financial and Transparency	• In the case of emergency employment mechanisms for debris removal: risk of resource diversion, fraud, cash not reaching targeted populations, or slow processing of cash payments to contractors; • Defining value for money in debris management: what will UNDP pay for?; and • Maintaining focus during selection of structures for demolition: e.g. implementing partners may look for large(r) buildings to scale up quantity of debris collected per building and meet their targets more easily instead of focussing on the small houses pertaining to the poor population.	• Using strong monitoring mechanisms and innovative payment modalities (e.g. through mobile phones/better than cash alliance, if the context allows); and • Using Cash for Production modality (e.g. paying per output/quantity produced/ collected instead of for time spent on the working site), which ensures that UNDP only pays for debris removed and is not giving hand-outs for a service not provided.

TABLE 4. COMMON RISKS AND ASSOCIATED MITIGATION MEASURES (CONT.)		
Risk classification	**Nature of risk**	**Risk Mitigation**
Environmental	• Due to illegal dumping, health risks of toxic waste such as medical waste, asbestos exposure; • Contamination of storage sites; and • Lack of solid waste collection in a disaster situation.	• Partnering with specialized organizations (e.g. UNEP or MSB); • Defining/disseminating Standard Operating ; • Procedures, using coordination mechanisms; and • Carrying out environmental impact assessments.
Disaster	• In cases where disaster victims may be exposed to another disaster before recovering from the previous one, will the re-use of debris mitigate disaster risk or not? (e.g. using debris in retaining walls/gabions); and • Doing debris removal during the rainy/ cyclonic season.	• Establish an early warning, preparedness, early action system; • Building codes, policies and strategies sensitive to disaster risk reduction; • Issue studies on risks, testing of debris in national laboratories, etc.; and • Contingency plans are put in place.
Gender	• Potential for ignoring gender issues.	• Policies, strategies, and targets should be inclusive and gender responsive. For examples, see the Comparative Experience Paper on Debris Management.

2.5. MANAGEMENT ARRANGEMENTS

The oversight of debris management projects requires skills that are not always available within a UNDP CO unless there is already a project in operation directly supporting public works and institutional capacity building of national and municipal authorities. Short-term capacity support to bolster expertise in the area of debris management can be readily provided through the UNDP SURGE and CPR Experts (consultants) deployment mechanisms, housed within BCPR, which are designed to provide an injection of temporary but experienced capacity to jump-start the process. The UNDP SURGE job profile (i.e. Terms of Reference) for a debris management expert, able to help start up or lead an immediate recovery project, is available here. Should short-term support be mobilized through the SURGE mechanism, the CO would need to simultaneously make strenuous recruitment efforts to ensure succession of the temporary SURGE Advisor with the permanent appointment of a Project Manager, if the removal, recycling and management of rubble and debris is likely to be a prolonged undertaking.

Whilst the coordination of debris removal should be led by the Government, UNDP is often requested to play a facilitating or lead support role via the early recovery cluster. A debris removal sub-committee or rubble management task force of key ministries and partners may be established. UNDP coordination and engineering experts may be seconded or embedded within the lead ministry for the entire period that it takes to implement the project (typically between 6 – 24 months, depending on the scale of destruction). The UNDP PAPP office has developed a more detailed chart which outlines key activities to be undertaken in the planning and development of debris management projects, which may be accessed by UNDP staff in the Debris Management section of the UNDP Signature Products page.

Regardless of whether the project is DIM or NIM, as soon as the project fully designed and cleared by the Local Project Appraisal Committee (LPAC), it is an imperative for implementation to commence immediately. The clearance of debris and the establishment of local storage sites represent one of the most critical early decisions alongside those of close consultation with the community, identifying areas of greatest need, and determining very quickly whether it is possible to undertake an emergency employment project and/or engage the community in other ways. The pursuit of various options also entails decision making concerning how to engage 'responsible parties', often from local or international NGOs, with the capability to undertake debris management activities.

In addition to a project board for the governance and oversight of the project, as per the normal project requirement, implementation will be led by a project team empowered to undertake a number of core functions, for example: 1) for the day to day implementation of activities; 2) monitoring capacity, with quality assurance provided by the CO; iii) operational support (finance, human resources, procurement, security, data-base and administrative expertise). The structure and composition of the debris management team will also need to reflect the aspirations of the CO and Government counterparts' intended method of delivery (see section on 'Implementing Modality and Responsible Parties' below relating to the various forms of modality and partner arrangements that exist). However, common to all projects is the need to appoint a competent Project Manager. This is the first step in the swift mobilisation of a core team of experts with specialised skills, technical knowledge, prior experience and understanding of debris management in a post-crisis context.

Depending on the scale of operations required, the full project team might consist of: 1) A Project Manager; 2) Deputy Project Manager; 3) Community Empowerment Team (the size of the community based team also depends on the scale of the disaster); 4) Engineering/transport/logistics/recycling expertise (as needed); 5) Data-base Manager; 6) Communications Officer; 7) Procurement/Contracts Officer/s; 8) Finance Officer/s; 9) Human Resources assistant; and 10) Office and Administrative Support. While support staff are often mobilised internally by UNDP and/or the National Authority, several specialised positions may be required to be filled through emergency recruitment or via the SURGE ExpRes rosters. Local circumstances will determine the requirements of the full team that needs to be assembled.

Determining the Implementing Modality and Responsible Parties

The CO has a number of options available on how the project is implemented. In the planning phase of the project the CO should review carefully the requirements and available instruments for selecting and engaging potential partners, detailed in the 'Defining the Project' section of the UNDP POPP.

For any project, in consultation with the Government Coordinating Agency, UNDP will select a single implementing partner who is accountable to UNDP and the Government Coordinating Agency. The selection of the implementing partner is based on an assessment of the partner's capacity to effectively manage the project and deliver the intended outputs. The implementing partner may be a government entity ('national implementation'), UNDP ('direct implementation'), a UN agency, a civil society organization (CSO), or an approved inter-governmental organization that is not part of the UN system. The most commonly used implementing modalities in an immediate post-crisis environment are DIM (Direct Implementation) or NIM (National Implementation):

1. **DIM** – where UNDP assumes full responsibility for the implementation of the project and directly recruits all staff on UNDP contracts for these purposes. In many crisis environments there is a call by the host government and/or donors for UNDP to directly manage a programme or project (DIM).

2. **NIM** – in many programme countries, UNDP opts to provide its support in a NIM environment, whereby a government entity is engaged as the implementing partner for the given project. This enables the project to be fully embedded into national institutions, structures and systems.

Once the implementing partner is selected, it may enter into agreements with other organizations, known as "responsible parties," who provide goods and services to the project, carry out project activities, and/or produce project outputs. Responsible parties are accountable directly to the implementing partner. If UNDP is not the implementing partner, for example in a NIM environment, UNDP can still support vital processes including recruitment and procurement, as a responsible party. Responsible parties may also include government entities, private sector firms, UN agencies, or civil society organizations (CSOs). (For all the possible configurations of implementing partners and responsible parties, and the associated procedures and instruments for engaging responsible parties, click here.) CSOs, such as NGOs or CBOs, are often engaged as responsible parties for debris management projects. For all the options and modalities for CSO engagement, refer to this page of the POPP.

The CO should budget ample time during the planning phase to carry out the processes involved in assessing, selecting and formalizing engagement with partners, including contracting and procurement actions, and consider time-saving measures that may be applied, such as the UNDP fast-track procedures. Agreements with the implementing partner and responsible parties should be developed with well-defined roles and responsibilities, including those of UNDP.

An example of the implementation arrangements for a debris management intervention, taken from the UNDP Haiti experience, is outlined in the 2 diagrams below:

Project Implementation Arrangements - UNDP HAITI

Diagram 1. Debris I (October 2010 – December 2012)

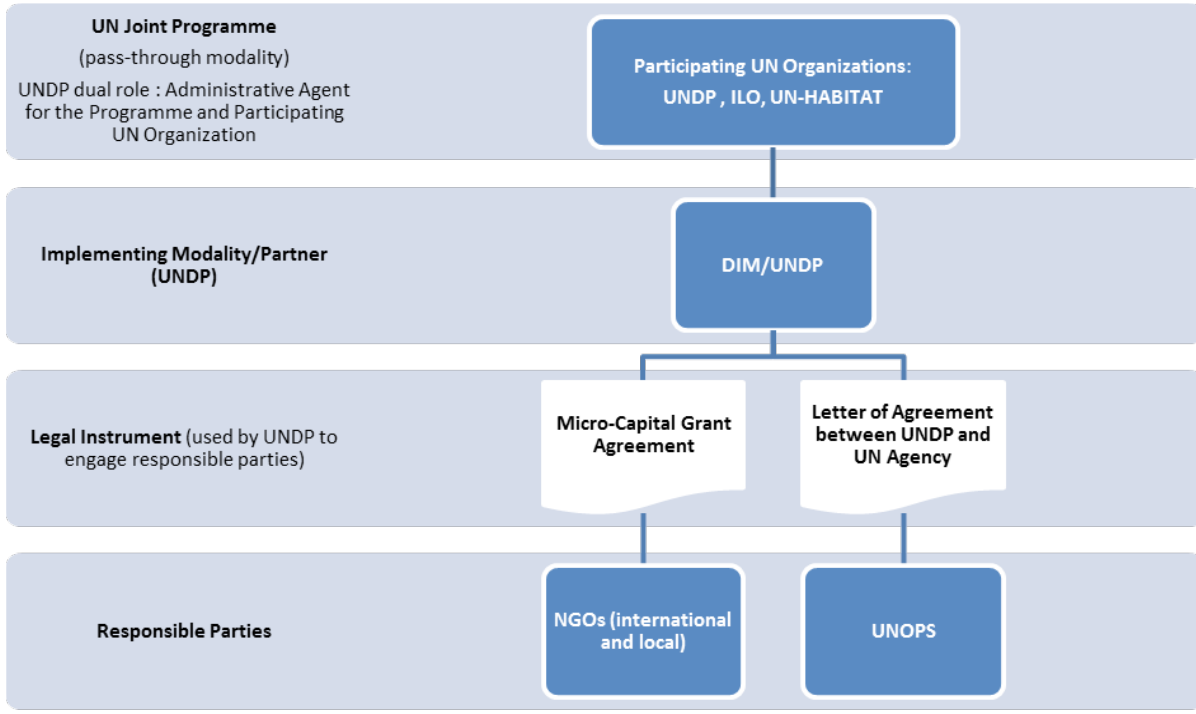
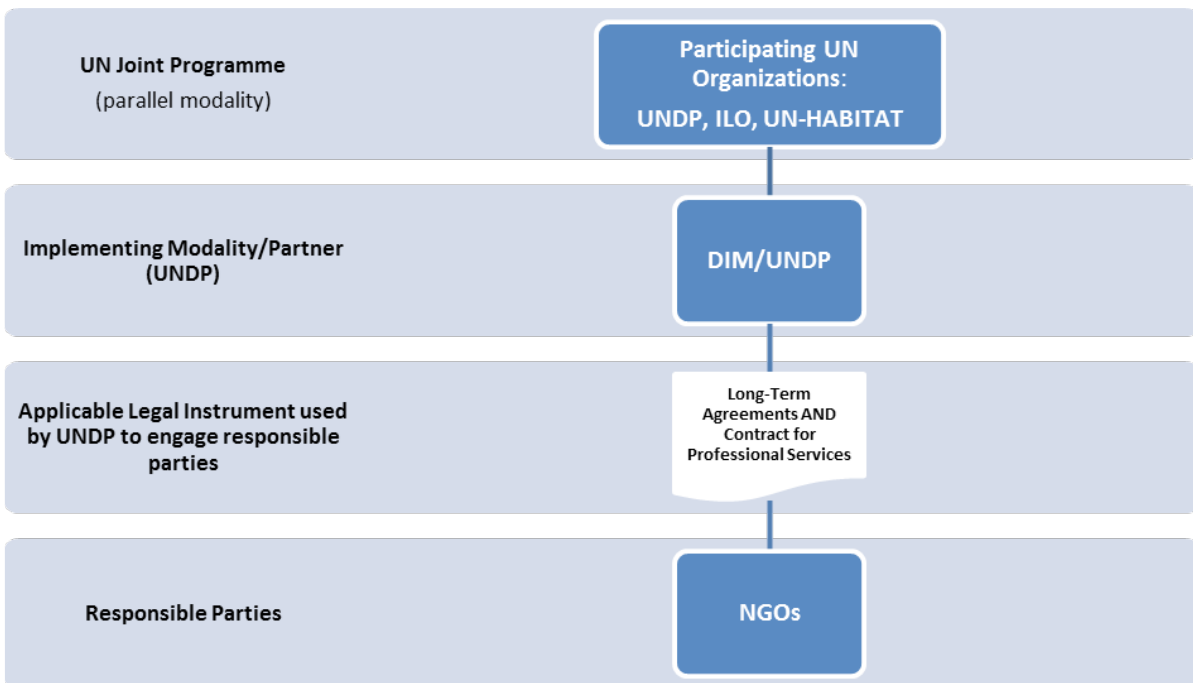


Diagram 2. Debris II (June 2011 – December 2012)



On the basis of an initial pilot project in Leogane, a UN joint programme for debris management for the Haitian capital of Port-au-Prince (referred to in Diagram 1, above, as Debris I) was jointly developed and signed by UNDP, UN Human Settlements Programme (UN-HABITAT), and the International Labour Organization (ILO) in October 2010. UNDP had a dual role: under the pass-through modality, UNDP served as the administrative agent of the funds for the programme, and also was a Participating UN Organization. The UN Office for Project Services (UNOPS) was engaged as a responsible party for the component of the programme implemented by UNDP. In April 2011, an additional joint programme (referred to in Diagram 2, above, as Debris II) was signed in order to extend the initiative to additional areas of Port-au-Prince. Debris II uses the parallel modality whereby funding is transferred directly to each Participating UN Organization, instead of being administered for all the UN agencies by UNDP.

The two joint programmes, Debris I and II, were distinct but complementary. Up until early 2012, they were implemented in parallel, but after that they were managed by a single project implementation team. UNDP was the designated lead agency for both programmes and as such is responsible for all coordination of activities. Differences in the design and approach of the second joint programme, Debris II, were based on lessons learned in the course of implementing Debris I.

For both programmes, UN-HABITAT led on cadastral issues, social mobilization, and community planning. ILO led on market analysis, professional empowerment, and the creation of micro-enterprises around the debris recycling value chain. In addition to leading on overall programme coordination, UNDP led on emergency employment, and debris demolition, removal, transport and community infrastructure rehabilitation. NGOs (national and international) have been critical partners for UNDP throughout Debris I and II. For Debris I, UNOPS also led on debris demolition, removal, and transport.

An important difference in UNDP's approach to Debris II versus that of Debris I was a change in the modality used for engaging responsible parties, which in both cases are CSOs (international and national NGOs). For Debris I, the micro-capital grant modality was primarily used in order to allow small local NGOs to play a significant role in implementing debris removal activities and to build their capacities in the long-term to facilitate community-based development in their neighborhoods. This method does not require a competitive process but the amount of each grant agreement is limited to 150,000 USD, with a maximum of 2 grants to the same organization. For Debris II, the imperative to increase the scale, pace, and scope of debris demolition, transport, and removal activities led to the decision to engage NGO partners as contractors. Under Debris II, a competitive procurement process was used to select a single international or national NGO to obtain demolition permits and perform demolition, removal, and transport for each pre-defined zone of intervention (zones correspond to neighborhoods/communes).

In engaging the NGO partners for Debris II, UNDP Haiti used an innovative contracting arrangement. In order to fix the rate charged by each selected NGO to remove debris in a particular zone, UNDP has negotiated a Long-Term Agreement (LTA) with each NGO, which defines a maximum amount of debris to be removed by zone and fixes a unit price per cubic metre of debris that is removed. The fixed rate is established by taking into consideration the following four elements of the process: community mobilization, mechanical demolition, and manual transport. On the basis of the signed LTA, which is a non-committal agreement, UNDP and each NGO partner have also signed the usual legal instrument used by UNDP to engage a responsible party as a contractor, the Model Contract for Professional Services, on the basis of the identified amount of debris to be removed by the NGO partner, work plan, and performance indicators. As part of the LTA, multiple professional services contracts could be issued until the debris was fully cleared.

2.6. OPERATIONAL SUPPORT

Operational support encompasses finance, human resources, procurement, security, IT/data-base and administrative aspects. In a post-disaster/post crisis setting, the most commonly reported operational challenges relate to issues of physical access, procurement and transport. Dedicated fast-track procedures can be sought in a post-crisis environment. These serve to increase the operational and financial agility of county offices and enable rapid staffing and procurement of essential goods and services. To access information on the UNDP fast-track procedures, click here.

In addition to organizational measures to accelerate and simplify administrative processes, UNDP COs will need to prime local committees for the review and approval of bidding documents, as there will be considerable pressure placed on the procurement and contracting teams.

Fast-track procedures do not erase responsibilities and accountabilities for proper utilisation, oversight, monitoring, and reporting. The CO will need to ensure sufficient procurement, human resources, and administrative capacity to cope in the crisis, as it may also be affected by the crisis.

2.7. PARTNERSHIPS

The following agencies are among UNDP's potential partners in recent debris management projects:

TABLE 5. KEY DEBRIS MANAGEMENT PARTNERS

Prospective Partner Agency	Area of Partnership	Country where partnership was utilized
UNEP	Expertise in disposal of environmental hazardous disaster waste such as healthcare waste or asbestos.	Pakistan
UN HABITAT	Land issues, participatory enumeration and urban community planning, with links to shelter provision.	Indonesia, Haiti
ILO	Expertise in labour market analysis, skill development training and enterprise development. In Haiti ILO has been a key partner in debris recycling and setting up the value chain for debris recycling.	Haiti
UNOPS	May be able to provide additional services to large scale operations. They have been contracted by UNDP in Haiti to do demolition and debris removal activities. They have also been engaged by UNDP in the rehabilitation of community infrastructure projects.	Haiti, Pakistan
UN Mine Action Service (UNMAS)	In post-conflict areas.	oPt
World Food Programme (WFP)	May prove useful in areas where emergency employment schemes are linked to cash/food for work in the immediate aftermath of a crisis.	Haiti
Food and Agriculture Organization (FAO)	Involvement in debris/waste management in agricultural land and related economic recovery opportunities in the immediate aftermath of a crisis.	Haiti
Office of the UN High Commissioner for Refugees (UNHCR)	UNHCR has worked with UNDP on protection issues during and after rubble removal.	Pakistan, Haiti
UN Entity for Gender Equality and the Empowerment of Women (UN Women)	UN Women has worked with UNDP and UNHCR on the protection of property rights, particularly for women, during and after rubble removal.	Pakistan, Haiti
Peacekeeping missions	For some countries, peace keeping forces will have technical expertise for evaluations and engineering services for construction management.	oPt
US Army Corps of Engineers (USACE)	For some countries, the US Army Corps of Engineers (USACE) is present with extensive experience in debris assessment and management.	Haiti, Pakistan
MSB	The Swedish Civil Contingency Agency can be a good partner with proven track record in disaster waste management.	Haiti, Pakistan, oPt
Oxfam	Oxfam GB has worked in various countries on disaster waste management.	Haiti, oPt
Othe NGOs	A number of environmental NGOs (e.g. Palestinian Hydrology, Palestinian Agricultural Relief Committees, the Palestinian Environmental NGO network, CHF International, JPHRO group), can be of assistance in advising on safe and environmentally sound disposal.	Haiti, oPt

2.8. MONITORING AND EVALUATION

A monitoring and evaluation (M&E) framework and system must be established during the design of any project and be in operation from the time that implementation begins in order to provide a basis for effective management and reporting of progress against planned results. Guidance is available in section 2.9 of the 'Defining a Project' section of the POPP and the UNDP Handbook on Planning, Monitoring and Evaluating for Development Results, available here. The project budget should include provision for adequate human and financial resources for M&E.

UNDP will need to monitor the effects of each project with particular vigilance, paying special attention to the impact that the project has in getting the community back to work, skills training and employing and paying local people in debris removal, recycling, reconstruction or repair activities. Formal structures and processes will need to be securely in place for the systematic performance monitoring of implementing partners. The rush to contract and visibly implement the project can create conditions for fraud, cronyism and corruption.

Monitoring that focuses on critical points in the procurement, implementation and payment processes can help to minimise this. Establishing a hotline for complaints through SMS or email is also advisable. Monitoring can be bolstered by recruiting independent agencies. Specialized NGOs, private sector companies or academic institutions can also be used. The distinction between implementers and monitors is important to maintain integrity, combat corruption and avoid low-quality reconstruction. Community oversight also has a key role to play.

It is essential that a proper baseline is established to provide a proper understanding of M&E data. For example, UNDP's major intervention in Pakistan has struggled to be fully accountable because both the baseline and M&E were not properly considered. UNDP debris management M&E systems have included narrative monthly reports, weekly work plans, weekly quantitative reports, monthly trackers (house demolition tracker, work days tracker and rubble removal tracker). The success of M&E rests on partnership between UNDP, the communities, and the implementing partner(s).

Specific tools that can facilitate the monitoring of debris projects include:

1. **Monitoring systems at the storage or staging site** – systems may include verification vouchers via a ticketing system to ensure dump trucks or roll off containers handling debris bring materials to an approved location and do not unload it in more convenient unauthorised places. For large debris management operations, a paperless debris tracking system is highly recommended through use of smart phones or hand-held computers to provide real-time information and data (for example refer to the oPt case);

2. **Geographical information management systems** – mapping of debris clearance activities can be coupled with a geographical information management system that details the debris removed, recycled and re-used;

3. **Use of 'Cash for Production' modality** – this modality bases payment of entities involved in debris management on outputs/production. This is a good method of accurately monitoring debris removal work, however, it is important to ensure that: arrangements for payment of daily workers (for instance through an emergency employment scheme) are based on the principle of equal pay for men and women, since women's productivity when it comes to debris removal may be lower; stringent criteria are used for measuring productivity; and that work norms are developed carefully, tested and agreed upon with beneficiaries and stakeholders. For more info on this refer to Comparative Experience Paper on Debris Management; and

4. **Community based monitoring structures** – it can be useful to establish local, community-based monitoring structures from the start of the project. Where community-based monitoring has its limitations, an alternative option is to hire an independent NGO for monitoring.

More generally, the principles below are meant to inform planning, monitoring and evaluation for conflict sensitivity:

- All programming needs to be sensitive to the tensions or to potential or actual conflicts, and be conducted in such a way as to at a minimum, not heighten tensions but to reduce them;
- The security of all involved (programme staff; beneficiaries; and evaluation staff) needs to be factored into all decisions; and
- Crisis settings are characteristically dynamic, and it is not unusual for changes to happen quickly. Therefore, flexibility needs to be built in and around the need to re-visit programming objectives to ensure they are still appropriate to the situation, as well as over the timing and appropriate methods of data collection.

Further guidelines for planning, monitoring and evaluation in conflict prevention and recovery situations can be found here.

2.9. COMMUNICATIONS STRATEGY

A communications strategy for debris management is a vital part of the project and should specifically target the following audiences:

- **Beneficiaries/participants** – need to be aware of the debris removal prioritization process and other critical information related to demolition, recovery of personal assets, short-term employment and training opportunities, rubble removal sites and transport corridors, registration procedure, geographical focus etc.;
- **Government and local authorities** – need to kept abreast of progress in order to promote their leadership and engagement in the formulation and coordination of the implementation of the debris management strategy; and
- **Media, donors, and the general public** – need to be kept informed of progress and sensitized to the myriad issues that occur in the determination, prioritisation and impact of the debris management programme. This also helps to mitigate against potential misinformation. Organizing site visits with relevant stakeholders can also help gather and disseminate accurate information.

The communications strategy should include a strong public information component that clearly articulates the areas of responsibilities between UNDP, the government and other stakeholders. This serves the dual purpose of mitigating the risks to the organization, as well as instilling a sense of ownership in the programme. The strategy should be backed up by a dedicated project budget line that can be used to finance a range of key tools and activities (e.g. videos, radio messages, flyers, website etc.).

Examples of practical and effective communication tools used in UNDP debris management projects include:

- Development of a public website that has the capability to map the location and track the progress of all debris clearance, demolition, routing, storage and recycling project. A website helps provides transparency and accountability and promotes visibility of the results achieved.
- Periodic radio and television broadcasting of progress can generate general public awareness.

2.10. RESOURCE MOBILIZATION

The UNDP Crisis Response website provides guidance to Country Offices for accessing common internal and external sources of funding in crisis and post-crisis settings, including emergency grants, seed funding for UNDP Early Recovery interventions, and non-UNDP administered funding options. The table below provides some guidance on entry points for resource mobilisation.

TABLE 6. RESOURCE MOBILIZATION OPPORTUNITIES

Entry point	Description
Portfolio restructuring	When starting a debris management project, UNDP offices should look at the possibility for restructuring their programme portfolio based on the needs of crisis affected communities. UNDP can involve donors in the portfolio review and request reallocation of funds for recovery programmes. TRAC resources could be used flexibly to respond quickly to the emergency.
Consolidated Appeal Process (CAP)	Debris management projects can be implemented in the immediate recovery phase directly after the disaster/crisis and this can form part of a flash appeal (FA) or a consolidated appeal process (CAP). The FA and CAP are multi-agency funding and advocacy tools that are common in humanitarian action contexts and are coordinated by OCHA. A FA is developed following a sudden-onset emergency and is a tool for structuring a coordinated humanitarian response for the first three to six months of an emergency. It is issued within one week of an emergency and is triggered by the UN Humanitarian Coordinator in consultation with all stakeholders. A consolidated appeal occurs on an annual basis in countries where there are humanitarian needs and is a tool for aid organizations in a country or region to raise funds and plan, implement and monitor their activities together. Guidelines, templates, and best practices examples on the FA and the CAP are available on the Policy and Guidance page of the OCHA CAP website.
Emergency Response Fund (ERF)	An un-earmarked pooled funding mechanism which funds priority needs and is managed by OCHA on behalf of the Humanitarian Coordinator. ERFs are in-country funding mechanisms which is accessible by NGOs and UN agencies. An ERF finances projects addressing immediate needs with positive spin-offs for the wider community. In the past, emergency employment projects linked to debris removal have been funded through ERFs. More information about ERFs can be found on the Humanitarian Financing page of the UN OCHA website.
Central Emergency Response Fund (CERF)	The CERF has also funded priority debris management projects in the past. The fund is managed by the Emergency Relief Coordinator/OCHA and provides rapid initial funding for life-saving assistance at the onset of humanitarian crises, and critical support for poorly funded, essential humanitarian response operations. The CERF grant component has two windows; one for rapid response and one for underfunded emergencies. More information is available on the OCHA CERF website.
Peacebuilding Fund (PBF)	The immediate response facility and the peacebuilding recovery facility – the two windows of the PBF – both offer funding opportunities for debris management projects in crisis situations. All proposals for funding from the PBF must be submitted through the office of the Senior UN Representative in-country. All PBF funding is disbursed to Recipient UN Organizations. NGOs and CBOs/CSOs cannot access the PBF directly; however they may implement projects through partnership arrangements with eligible agencies and organizations. For more information access the PBF website.
Crisis Prevention and Recovery Thematic Trust Fund (CPR TTF)	A fast and flexible corporate funding mechanism that can be used for immediate crisis response as well as for strategic investment into CPR programmes. The country window of the CPR TTF can be used as a fast way of channelling resources to COs. A signed project document is necessary at the stage of disbursement. Guidance on how to access CPR TTF funding is available on the UNDP POPP. Contact BCPR@undp.org for a focal point in BCPR NY for the CPR TTF.
Donors	Financing for large UNDP debris management projects have come from a diverse range of donors. Through a range of instruments, including the CPR TTF, as well as cost-sharing agreements signed at the country level, many traditional and non-traditional donors have funded debris management projects in response to specific requests from the UNDP Administrator.

2.11 QUICK CHECKLIST - PLANNING A DEBRIS MANAGEMENT PROJECT

The following tool has been devised to assist COs to quickly review the main planning stages of the project.

CHECKLIST FOR THE PLANNING PHASE: DEVELOPING THE PROJECT DOCUMENT	
Key Steps	Questions
Assess needs and available capacity	• Are there disaster impacts and/or needs assessments available to inform the Debris Management project design? • Has the debris been sufficiently well mapped to enable geographic prioritization? • Review of the strengths, weaknesses and implementing capacity of the prospective partners.
Consult with partners	• Has the government and other partners, including beneficiary communities, been consulted on the design of the project?
Assessment of risks	• Are the intended results attainable considering the context, constraints, resources and timescales? • Have overarching and specific risks and mitigation measures been identified? • Has a conflict and a gender lens been applied in the strategy? • How will the project be fully sustained after it ends?
Communications and ICT	• Has the project approach been sufficiently communicated and consulted with communities? • Is there a budget for communications plan for reaching out to all stakeholders? • Has the project maximised ICT and web-based tools, including for monitoring?
Mobilize resources	• Immediately adjust the ongoing programme portfolio, especially any area-based type programme, towards crisis needs in consultation with Government and Development Partners. • Have humanitarian funding sources been approached? • Have donors been approached directly? • Has HQ support been rallied for funds?
Coordination	• Has a coordination mechanism been established to define roles within the ER Cluster?
Monitoring results	• Have realistic outputs with clear indicators been defined and is a monitoring system designed at output and impact level?
Management arrangements	• Has the CO hosted the LPAC and assembled key project partners to act as the Project Board? • Have the correct modalities been put place (including procurement) for selecting responsible parties?
CO and project human resources	• Has the CO capacity been assessed and the need for additional capacity at office and project level? • Review the staff profiles needed to implement the project.

3. PROJECT IMPLEMENTATION

The Nahr El Bared Palestinian Camp project was UNDP's largest-ever debris management intervention in Lebanon, with a project budget of 15 million USD. Photo credit: UNDP Lebanon

This section looks at the implementation challenges that will need to be addressed if UNDP is to turn the objectives outlined in the previous two sections into practical actions as quickly as possible. Project implementation is framed within three main phases over a period of up to two years.

This section covers: 1) ways to accelerate project implementation, 2) phases of implementation, 3) the government's strategy for debris management, 4) ensuring a community driven and guided approach to implementation, 5) coordination, information management and effective communications, 6) maintaining quality relationships with national and local counterparts, 7) the participation and empowerment of women, 8) environmental management, 9) disaster risk reduction measures, 10) health and safety of workers, 11) guiding principles for building back better, and 12) a quick checklist for the implementation phase. The section ends with a quick summary of some of the results achieved through implementation of past debris management projects.

3.1. WAYS TO ACCELERATE PROJECT IMPLEMENTATION?

In order to operate effectively in the immediate aftermath of crises, it is important to engage quickly. Table 7 below outlines a series of actions that can help accelerate project implementation.

TABLE 7. TOOLS AND APPROACHES FOR ENGAGING QUICKLY IN CRISIS AND POST CRISIS SETTINGS	
Pre-position potential partners	The fastest way to commence a project is through contracting or agreement with responsible parties. The CO can prepare drafted standard agreements at the ready with government counterparts, UN agencies and CBO partners based on their roles, responsibilities and comparative advantages. In high risk countries such contingency planning is definitely prudent and recommended.
Provide guidance and support to potential project partners	Support local NGOs or CBOs who are potential partners. This is important when working with community groups and when there is a capacity building component to the project. Develop a simple manual of how the project will work, including a format for sub-project submissions, registration and criteria for the selection of sub-projects, beneficiaries and including monitoring and reporting arrangements. An example can be accessed on this page of the UNDP Signature Products space on the corporate intranet. UNDP should also keep an updated list of private sector companies that can be contracted in the implementation of early recovery projects.
One funding mechanism	Channel resources through one fund, where possible. UNDP CPR TTF has country windows and very simple donor contribution formats. Involving UNDP headquarters in all administrative steps of signing donor agreements, with harmonized reporting cycles can save the Country Office a lot of time in the midst of a crisis.
Capacity injection	Request a temporary boost of capacity support through the UNDP SURGE or ExpRes (consultants) deployment mechanisms. The SURGE and ExpRes rosters contain experienced staff and consultants available for instant deployment to UNDP COs in a range of profiles.
UNDP Fast Track procedures	Submit a request for application of UNDP Fast Track Policies and Procedures. More information can be found here.
Standard templates	Templates and examples on the UNDP intranet/SharePoint site for Signature Products can save precious time in project design. Speed up the recruitment by using the pre-classified project job descriptions etc.
Coordination	As early as possible, establish an effective coordination structure with other organizations operating in the same area, e.g. within, or as a sub-component of the Early Recovery Cluster and/or within government, in order to ensure leadership and coherence of interventions.
Procurement and financial transfers	Prepare a procurement plan. The selection of a financial intermediary for cash payments, or via the 'better than cash alliance' has to happen at the design stage of the project.
Cash-flow planning	In parallel, a quick cash-flow plan is needed to determine when payments are to be made and how much is available during the implementation stage.

3.2. PHASES OF IMPLEMENTING A DEBRIS MANAGEMENT PROJECT

Once the initial assessment has identified the quantity, nature and possible re-uses of debris, the mapping of partners can inform the implementation strategy can be put in place. This should give particular consideration to the five phases of debris management below.

TABLE 8. KEY CONSIDERATIONS BY PHASE OF IMPLEMENTATION

Phase	Key considerations
Determining the area of intervention	• Mapping of on-going/planned debris removal initiatives; • Liaise with authorities and coordinate with partners; • Geographical/physical conditions and socio-economic factors and the feasibility of longer term engagement; and • Classification of structures.
Removal of debris	• Cash for work/ cash for production, government or contractors; • Selection of sites with both the sites and the transport routes cleared of risk for Explosive Remnants of War; • Demolition of damaged buildings; • Removal of human remains – see Management of Dead Bodies in Disaster Situations by the World Health Organization (WHO) and the Pan American Health Organization (PAHO); • Refer to the Removal of Solid Waste –Disaster Waste Management Guidelines; • Removal of re-usable material (steel etc.); • Approval process from government for collecting and transporting the rubble; • Determine the cost of removal and partnership development with the private sector, especially concerning transport activities; • Need for legal documents; and • Definition of a transportation programme, that needs to take into account traffic limitations in the specific context (critical in Haiti) as well as the impact of transportation in roads (maintenance). Security of the trucks and drivers is another important component that needs to be taken into account.
Staging, sorting and storage sites	• Identify, assess and select potential storage and/or dumping sites, determine if they will be temporary or definite sites; • Develop operations guides and disposal site guidelines for the sorting and treatment of rubble • Assess disposal options and environmental impact; • Establish dumping sites for rubble and for non-recyclable and hazardous waste; • Select small community driven or central treatment facility prepared by contractors; • Determine safety measures for the treatment facility; • Link debris management with solid waste management, particularly in dump sites. Particular efforts are required to define a sustainable strategy to combine both; and • Identify community rehab infrastructure projects that can be implemented with labour from community members.
Recycling and re-use	• Establish technical requirements for the purchase or hire of crushers; • Commission a scoping study for potential re-use of rubble; • Dispose of unusable rubble; and • Develop an exit strategy for temporary storage and recycling sites.
Exit plan	• Plan can include transition to existing government or private sector-led solid waste management and/or also a housing strategy for the return of the displaced population back to their neighborhoods.

3.3. GOVERNMENT DEBRIS MANAGEMENT STRATEGY

Government leadership in debris management is critical to the success of a debris management programme. It is not always clear who manages debris within the government although in general, the Ministry of Public Works or Ministry of Planning often has a lead role. Cities or municipalities which are often hit by floods, hurricanes or earthquakes have often developed emergency debris management plans, since they are already cognizant of the fact that careful planning can speed up recovery, reduce cost and prevent mistakes. These plans can foresee the use of sites in the event of a natural disaster and establish reporting and management arrangements. In the case of a disaster, some of the issues which are to be addressed by the government in debris management (collection, recycling and disposal) include:

TABLE 9. KEY GOVERNMENT RESPONSIBILITIES IN DEBRIS MANAGEMENT

Responsibility	Description
Strategy for debris collection and storage	On-site management of smaller debris storage or recycling has cheaper logistics cost but a higher management cost. A central off-site location may provide efficiency gains. The government should also designate debris dumping/storage/recycling areas. UNDP often employs on-site management techniques coupled with labour intensive methods. In addition UNDP should play an instrumental role in the coordination of the sector through direct support to the national authorities and/or facilitating the debris management working group/early recovery cluster. The Haiti case-study, available here, contains further details about issues related to government strategy.
Procedures for unsound structures	Procedures are required to determine if buildings can be rehabilitated or if demolition is warranted and this should be communicated to the population. See the oPt example for more information. Haiti also offers a good example of classification of structures after the earthquake (into green, yellow, red structures).
Procedures for demolition	Some disaster debris will still have value after the disaster and owners of damaged/destroyed buildings may want to agree to their demolition. Addressing ownership and value issues are important to avoid conflicts and require consultations and guidelines. Accessing property where previous owners may have been killed or where ownership is not clear also requires clear guidelines. Local and national government population should be consulted on the steps to obtaining and validating demolition permits by the affected community to and accessing private properties when the owners cannot be found before debris clearance starts. Reference should also be made to abandoned houses and how to deal with them.
Guidelines for emergency employment wage levels	A standard wage structure for transportation and removal of debris to off-site locations needs to be established (see the Guidance Note on Emergency Employment and Enterprise Recovery for more information).
Setting quality for crushed debris	Crushed or recycled materials are often used for low-base infrastructure but not for structural construction.
Environmental standards	Environmental, health and safety standards need to be established and a means for ensuring they are complied with needs to be implemented during the removal and recycling of debris.

3.4. ENSURING COMMUNITY-DRIVEN AND GUIDED IMPLEMENTATION

It is essential to ensure that within the initial assessment phase and throughout implementation of the debris management project that its direction is guided by the participation and insights of affected communities themselves. The training and employment benefits and the social cohesion and community solidarity that full participation generates are important intangible benefits arising from the project. Community empowerment is an incremental, evolving and perpetual process, but a critical window of opportunity is provided through the planning processes to build community capacity and ownership of the debris management project. The implementation of a community approach, although more complex and time-consuming, greatly enriches the process and contributes to the wider aims of the project. Such endeavours are very worthwhile to ensure that affected communities remain at the heart of debris management and which lead into longer term economic and social recovery activities.

Capacity building and training for communities and local government institutions should include specialised training for local engineers, masons, carpenters and other locally skilled personnel on safe debris management and disaster resilient construction techniques and methods. The capacity building process should offer opportunities for local officials and community leaders to be exposed to disaster resilient technologies.

3.5. COORDINATION, INFORMATION MANAGEMENT AND EFFECTIVE COMMUNICATIONS

Coordination, information management and communications are relevant in any project setting, but their importance for successful implementation of the project is heightened in a disaster response situation. Because communities themselves often lack coordination and communications capacity, the onus is therefore placed on the assessment and implementation teams to initiate and sustain regular coordination meetings as well as clear and systematic communication activities. It is vitally important to ensure that sufficient professional and financial resources are assigned to these functions. A well-coordinated and communicated project ensures that the project is viewed in a good light and well represented. On the other hand, a project that fails to coordinate or communicate its activities can often struggle to recover once a tainted image has befallen it. A measured communications campaign can help to disseminate important information at the various stages of the project, help secure a favourable local appeal and acknowledge key milestones in the projects' progress.

Box 1. Effective use of ICT - UNDP Haiti

In Haiti in order to register community members who were interested in receiving support from community centers, UNDP has teamed up with World Vision International to implement a hi-tech PDA beneficiary registration system which allowed all beneficiaries to receive an on the spot ID card and project specific ID number. From then on, the beneficiaries were able to register for the different services offered by the centre using this ID card. This provided an excellent monitoring and evaluation tool as it was possible to track what kind of beneficiaries used what services and how frequently. This beneficiary info included the GPS coordinates of their damaged house, allowing the project to provide feedback to the Municipal Office on the advances made in terms of house repairs.

3.6. MAINTAINING QUALITY RELATIONSHIPS WITH NATIONAL AND LOCAL COUNTERPARTS

Maintaining high-quality relationships throughout the implementation of the project with national and local government counterparts including local departments remains a vital function of the UNDP CO leadership as well as the Debris Management Project Manager and team. Periodical bilateral meetings should be scheduled, possibly before quarterly Board meetings to provide briefings at the Minister/Deputy Minister level. This will help to ensure ownership, leadership and an open conduit of strategic consultation between UNDP and the host Government. Ideally, national and local focal points will be appointed in order to support day to day operations and information exchange to ensure that projects are implemented both through and with the full endorsement of the host authorities and that capacity building and institutional strengthening is systematically pursued and reviewed at key stages.

In addition, the focal point is also required to ensure that the debris management project is fully integrated within the national policy and strategy context. For example, there should be a good fit between the debris management project and the Government's National Debris Management Strategy, as well as within the broader disaster response strategy in accordance with national and local development frameworks. While the selection of the national focal point might be out of the control of UNDP and reside with the government, considerable efforts will need to be made to ensure an open and professional relationship is maintained at all times. The periodical hosting of strategic consultations with national partners and the principal donors, alongside the calling of board meetings to ensure the smooth running of the project should be a feature within the project implementation plan.

3.7. WOMEN'S PARTICIPATION AND EMPOWERMENT

Gender-based divisions and inequalities place a heavier burden on girls and women in comparison to boys and men in most developing countries. The common vulnerabilities of women in post-crisis situations include lack of access to early warning messages, restriction in their mobility due to socio-cultural barriers, dependence on male partners for decision making, higher risk of sexual abuse and attack, and special needs during pregnancy and breast feeding, etc. Yet the full participation and empowerment of women in the planning, prioritization and recycling of debris can have a positive and transformative effect.

Hence, assessment and implementation teams should create opportunities to discuss and validate gender-based information during community consultations throughout the life of the project. It is recommended to initiate a consultative process at the local level or to organize focused group discussions to determine key issues and barriers that create gender inequalities and to explore opportunities and options for reducing gender gaps and maximising the participation of women in the recovery process. For example, on, or near-to-site crèches were set up in Haiti. Gender training should be undertaken to promote community understanding and appreciation of gender equality and issues of diversity. Men's and women's roles in the recovery phase are guided by context-specific gender relations, and their coping skills and capacities to recover are different.

Box 2. Partnerships - UNDP Pakistan

In Pakistan UNDP supported the Government's efforts to promote effective volunteerism in the wake of the 2005 earthquake, both by assisting the National Volunteer Movement (NVM) established by the Government, and through UNDP's own UN Volunteers (UNVs). The former comprised of technical support to assess NVM's capacity needs, design its organizational structure, partnership strategy and provision of human and capital resources. UNDP helped NVM organize the first consultative meeting with civil society on 16 November 2005. It was officially launched by President Musharraf and Prime Minister Shaukat Aziz. By March 2006 NVM had 4,000 registered volunteers, who were being provided training and subsequently rendering services in areas such as mountain rescue operations and trauma counselling.

Engaging women in decision making and their equal participation in the committee structures of the project at all levels enables the gender perspective to inform all aspects of the project. Women often manage household resources, are aware of changes in their environment and hold knowledge that can help create effective adaptation plans. It is therefore crucial to involve women in decision-making at all levels, for example, especially where it is necessary to include temporary emergency resettlement plans for affected families and personnel. Therefore, debris management is not just for the men in the community - women can and should be involved fully in all aspects of rubble removal and recycling, including planning for neighborhood reconstruction and revitalization and future sustainable livelihoods planning.

Financial and economic opportunities can also be extended to women in debris removal projects in equal measure. For example, in Haiti, 40% of those employed were women. Manual demolition has been mostly carried out by men, but clearance activities have been often carried out by women, who also benefitted from employment through positions such as team leaders or superintendents. In such cases, it is advisable that teams be composed of both women and men and that remuneration be measured against the output of the team/group and not individual outputs. This ensures that women are not at a disadvantage compared to men in terms of their remuneration. In contexts where women are not directly involved in debris removal activities, creating parallel job opportunities to support the financial independence of women is essential. One successful example comes from the oPt where, during rubble removal, some NGOs engaged women in emergency work activities by allocating tasks such as training, monitoring, public awareness, cooking, administration, communications, logistics and other activities.

3.8. ENVIRONMENTAL MANAGEMENT

The reclamation, recycling and management of debris must integrate strategies that ensure (international/national) environmental standards. Often many developing countries do not have or do not comply with environmental rules or standards and in these cases a partnership with UNEP is particularly advantageous. Natural disasters may destroy, in addition to human lives, ecological resources and the potential risk exists that this may be exacerbated during the recovery phase, which may in turn lead to further increased risk of natural hazards. For example, using wood as construction material for recovery may lead to the unsustainable use of forest resources and cause decline in the forest coverage that earlier served as a protection against cyclones and storm surges.

As part of sound environmental practices, strategies should include recovering, reusing and recycling debris to use as building material where possible. Reclaimed and recycled materials represent an opportunity to promote eco-friendly approaches to the formulation, design and maintenance of local infrastructure and repairs to buildings etc.

3.9. DISASTER RISK REDUCTION MEASURES IN DEBRIS MANAGEMENT

When implementing debris management projects every effort should be made to look very carefully at structures that have been weakened by the crisis or disaster. Severely damaged buildings should either be partially or fully demolished and the maximum volume of debris salvaged for recycling. Those buildings that remain should be rendered structurally secure and efforts made to reinforce their ability to withstand a similar disaster event. Disaster risk reduction measures must drive the recovery process in a manner that effectively mitigates the risk of future disasters.

In many developing countries community-based risk reduction does not exist at the local level. Hence in the wake of a natural disaster a community needs assessment will determine risk and identify immediate, short and medium-term measures that reduce disaster risks and vulnerabilities, as well as how to enhance the capacity of communities to deal with the prospect of future disasters. Communities will need to be guided as to demolition criteria through the judicial advice of expert structural engineers drawn in by UNDP to assist with the project's implementation. Disaster risk reduction measures are therefore an intrinsic part of any debris management project and an action plan may be drawn up as a result of the initial assessment and consultative process which could then serve as the basis for integrating disaster risk reduction actions within the project.

3.10. HEALTH AND SAFETY FOR WORKERS

Debris clearance, storage and recycling involves health and safety hazards for workers. Debris management operations should therefore ensure that workers and bystanders are not at risk. These include:

- Local health and safety regulations are to be followed. If not existent, the environmental, health and safety guidelines of the International Finance Cooperation (IFC) can be used as a reference;
- Proper tools and safety equipment for workers such as dust suppression tools, breathing apparatus, noise/vibration reduction mechanisms etc.;
- Proper regulations for the safety of workers such as one-way traffic systems and limited cross over between vehicles and humans at treatment or storage sites;
- First-aid kits available on-site;
- Standard operating procedures for the containment and disposal of hazardous materials by qualified contractors; and
- If there is a risk of UXO, these munitions are to be removed before rubble clearance starts.

3.11. BUILDING BACK BETTER – 10 GUIDING PRINCIPLES FOR IMPLEMENTING A DEBRIS MANAGEMENT PROJECT

1. Support communities to play a lead role at all stages in the project design and implementation in order to reflect their values, needs and expectations;
2. Strengthen institutions, partnerships, coordination and understanding between all agencies and the community;
3. Integrate gender considerations that maximize the participation, empowerment, training and employment of women, whilst ensuring sensitivity to cultural and social norms;
4. Maximize the provision of training for skills development, combined with labor-intensive technologies and an appropriate use of machinery;
5. Maximize the use of local resources, materials, tools, equipment, knowledge and ensure that maintenance arrangements are community-led and sustainable;
6. Effective coordination and communications help manage expectations and key relationships;
7. Commitment to a high level of transparency and accountability in decision-making and resource allocation;
8. Integration of disaster risk reduction practices and community coping mechanisms, including adherence to engineering standards, building codes and construction materials and compliance with local legal and planning provisions;
9. Ensure a strategic fit between the short-term project goals and longer term early recovery and economic development policies; and
10. Support national leadership, capacity building and institutional development throughout the project.

3.12. QUICK CHECKLIST - IMPLEMENTING A DEBRIS MANAGEMENT PROJECT

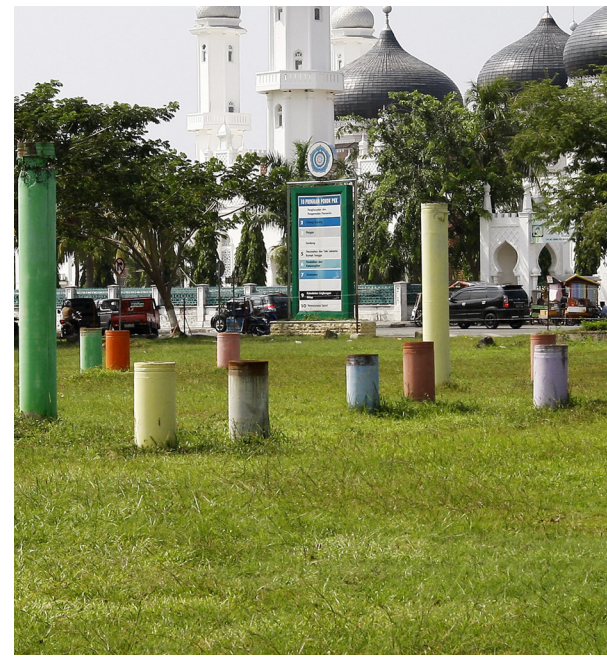
CHECKLIST FOR PROJECT IMPLEMENTATION
• Ensure early operational planning and apply for needed operational support (e.g. UNDP fast track procedures, temporary personnel through the SURGE and ExpRes deployment mechanisms)
• Consultation with communities
• Cash-flow and procurement planning
• Develop guidelines for community project selection criteria
• Develop guidelines for site management
• Develop guidelines for demolition of buildings
• Selection of priority areas
• Request for proposals
• Implement communication strategy and coordination strategy if relevant
• Implement resource mobilization strategy, working closely with UNDP Bureau for External Relations and Advocacy (BERA) and focal points in BCPR

Box 3. What results did project implementation achieve?

Some of the main results of the most recent large scale rubble removal and recycling initiatives undertaken by UNDP, and the contexts in which those accomplishments were achieved, are summarized below:

- In **Indonesia**, the 2004 earthquake and tsunamis caused an unprecedented loss of life and produced more than one million cubic metres of tsunami waste in that country alone. UNDP's programme supported a broad-based waste management initiative that expanded rapidly to absorb the earthquake and tsunami rubble clear up operations.
- In **Lebanon**, UNDP's largest debris management project facilitated the return process for 40,000 people who were displaced as a result of the 2007 Nahr El Bared conflict. Around 2000 damaged housing units were demolished; 500,000 m3 of rubble was transported, crushed, sorted and treated for re-use; and 12,000 UXOs and 5 air bombs were cleared and evacuated.
- In **oPt**, UNDP was on hand to assist the clearance of debris following the Israeli offensive of December 2008/January 2009 that witnessed the destruction of over 3,500 homes, including many public buildings. UNDP in cooperation with UNEP, UNMAS and other NGOs removed rubble from 1681 private and public buildings including more than 300 UXOs from different places along Gaza Strip. It was estimated at around 600,000 tons of concrete rubble was generated in the conflict, much of it hazardous, contaminated with asbestos and the explosive remnants of war. It is worth referring also to UNDP/Gaza rubble removal experience after Israeli disengagement from Israeli settlements in the Gaza Strip in 2005, when UNDP removed and cleared around 800, 000 tons of rubble including hazardous materials (asbestos) from these settlements /during this project, UNDP constructed a relatively big crushing site with a capacity of 5,000 tons per day.
- In **Pakistan**, the October 2005 earthquake created formidable environmental challenges, with widespread debris and large areas denuded of vegetation. UNDP was quick to respond to the earthquake of 8 October 2005. Over 200,000 were injured or killed (more precisely 73,338 killed and 128,309 injured) and 3.5 million people were rendered homeless while health care facilities destroyed. Muzzaffarabad, the capital of Pakistan Administered Kashmir was virtually destroyed. Over 70% of healthcare facilities in the area were destroyed. UNDP, in partnership with UNOPS implemented a project that removed rubble from 1,448 public sites, shifting 554,030 cubic meters of rubble in the process, generating 178,758 labor days.
- In **Haiti**, UNDP played a major role in the huge rubble management endeavour that followed the earthquake of January 2010 killing over 200,000 people, and displacing a further 1.5 million. It also created around ten million cubic metres of rubble.
- Rubble and debris removal and recycling was also a prominent feature of the early recovery programmes in Bam, **Iran**, following the earthquake there of 26 December 2003, which claimed over 30,000 lives, and the catastrophic floods that struck **Pakistan** in 2010 which affected more than 20.5 million people, left 2,000 people dead, and 1.9 million houses damaged or destroyed.

4. KEY LESSONS LEARNED



Masjid Raya, the Grand Mosque, pictured in these photos, is an iconic symbol of Banda Aceh as well as the entire province. During the tsunami, the mosque served as a refuge for many residents fleeing the rushing waters, but Taman Sari, the adjacent park shown in the foreground, was buried under thousands of tonnes of curled metal, vehicles, shattered glass, wood and bodies. Through UNDP's Tsunami Recovery Waste Management Programme, all the debris in the park was cleared and reused to help rebuild Aceh within a matter of months. The programme has now cleared over 1,300,000 cubic metres of debris in Banda Aceh and other affected areas, including Meulaboh, Calang and Bireuen. Photo credit: Faisal Ridwan, UNDP Indonesia

Based on UNDP's experience in a large number of post conflict/post disaster recovery situations, the following key lessons should be taken into account before engaging in any debris management project:

1. Taking the initiative - take the initiative and start clearance immediately whilst supporting the government coordinate its strategic response. Whilst a comprehensive debris management plan may take several months to formulate and adopt, the principal recommendation is to start implementation fast in support of some of the hardest impacted communities. Working with local communities helps to begin a local knowledge base and achieves some quick wins such as the clearing key streets and access points, opening up roads to neighbourhoods and the demolition of highly unstable structures which are a threat to public safety. These initial activities could start 1-2 weeks after the disaster has hit, once the search and rescue phase has ended. During this stage, it is important to maintain close contact with government authorities, and to support and inform their longer term institutional mandates, responses and strategies where required. For example, it might take a number of weeks for the Government to determine which institution/s will lead the development of the debris management strategy. In the meantime, a more detailed assessment and mapping exercise can be undertaken, leading to a fully detailed debris master plan.

2. Transforming victims into beneficiaries and producers helps restore the local economy - debris removal and recycling is inextricably linked to getting the community back onto its feet in the often slow and painstaking job of returning to normalcy. Rubble removal projects work best when they are linked with training and emergency employment offering cash for work (or the more efficient 'cash for production') in support of the affected communities.

This instantly transforms beneficiaries into producers and injects much needed cash directly back into the local economy. Funds are used by the communities themselves to repair and restock, which helps local markets bounce back. Training that accompanies short term employment programmes is especially useful where it is carefully tailored and targeted to helping the poorest and most vulnerable learn new skills and find a source of sustainable livelihoods.

3. Approaching assessments in the aftermath of the disaster - This should be led, or coordinated by government institutions, which often requires full technical support from UNDP. Assessment of affected structures will identify buildings that pose a risk to the population. A parallel assessment can also provide crucial information in terms of volume of debris to inform planning as well as resource mobilisation. A geographic sub-division of the territory between the main surveyors and operators is critical to achieve a sensible division of labour and to avoid confusion, competition and duplication. Harmonization of assessment methodology and technical standards should be accomplished. Door to door surveys with community representatives will be required and working through local neighbourhood committees, while time consuming, generates goodwill and enables community engagement. The use of ICT, satellite/GIS mapping and remote hand held devices can prove indispensable for obtaining, storing, managing and exchanging information.

4. Partnerships to deal with hazardous materials - Partnerships with specialised experts are essential for handling hazardous materials, as well as certain engineering capacity for debris removal. For example, UNEP has experts in dealing with hazardous materials such as asbestos; the Mines Advisory Group (MAG) and other NGOs have specialised knowledge in UXO removal that cannot be carried out by the community (without training and specialist equipment). Also is important to have the Government agree on the norms and standards for recycled products, including the structural re-use of the debris. In addition, it is essential to communicate to donors the complexity of debris management activities.

5. Personal belongings - A sensitive but clear communications strategy targeting the residents of disaster affected areas is extremely important. Citizens view the debris of their private houses as personal property. Often debris is mixed with re-usable materials with commercial value such as steel, larger blocks, window frames, doors, wiring, roofing materials, tiles, fixtures and furniture. Amidst this, personal belongings remain within the debris. It is therefore vital to establish and communicate guidelines as quickly as possible for how to collect mixed debris, for access to and/or demolition of private properties. Also, it is important to record formally the beneficiaries who refuse the collection and recycling of their rubble in order to avoid future legal challenges. Similarly, links between demolition, debris management operations and the shelter cluster emerge as important where a number of the owners of unsafe buildings will not allow the demolition of their premises without a guarantee that some sort of shelter will be built or provided. This is particularly true for poor households who may prefer living in their unsafe building to other options.

6. Health and safety - Social benefits such as health, safety and environmental issues become liabilities for UNDP if they are not properly addressed by the responsible party. A group health insurance scheme for workers is recommended. However a balance needs to be struck between the social benefits of labour-intensive rubble removal involving local communities, which may take a long time, versus a contract with the private sector, who may utilize heavy machinery, for example, bulldozers, but get the job done much more quickly, albeit sometimes at the additional cost of causing further damage to local roads in the process.

7. Transport routes - Debris management operations need to take into account traffic constraints and transportation time. The use of alternative routes and night transportation could be considered to reduce the burden on day-time traffic and the inconvenience for the population.

ANNEXES

ANNEX 1. ACRONYMS AND ABBREVIATIONS

BCPR	Bureau for Crisis Prevention and Recovery
CAP	Consolidated Appeals Process
CBOs	Community Based Organization
CO	Country Office
CPR TTF	Crisis Prevention and Recovery Thematic Trust Fund
CSO	Civil Society Organization
CWGER	Cluster Working Group on Early Recovery
DIM	Direct Implementation Modality
DRR	Disaster Risk Reduction
FA	Flash Appeal
FAO	Food and Agriculture Organization
IDP	Internally Displaced People
IFC	International Finance Cooperation
ILO	International Labour Organization
LPAC	Local Project Appraisal Committee
LTA	Long-Term Agreement
M&E	Monitoring and Evaluation
MAG	Mines Advisory Group
MSB	Swedish Civil Contingencies Agency
MSE	Micro and Small Enterprises
NGOs	Non-governmental Organizations
oPt	occupied Palestinian territory
PBF	Peacebuilding Fund
POPP	Programme and Operations Policies and Procedures
SME	Small and Medium Enterprises
UN	United Nations
UNDP	United Nations Development Programme
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
UNEP	United Nations Environment Programme
UN HABITAT	United Nations Human Settlement Programme
UNHCR	Office of the United Nations High Commissioner for Refugees
UNMAS	United Nations Mine Action Service
UNOPS	United Nations Office for Project Services
UNV	United Nations Volunteers
USACE	United States Army Corps of Engineers
UXO	Unexploded ordnance
WFP	World Food Programme
UNV	United Nations Volunteers

ANNEX 2. RESOURCES AND FURTHER READING

OCHA/UNEP/MSB, Disaster Waste Management Guidelines, January 2011
US Environmental Protection Agency (EPA), Planning for Natural Disaster Debris, March 2008

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