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Integrating sanitation and environment assessments for use in emergencies

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WATER, SANITATION AND HYGIENE:
SUSTAINABLE DEVELOPMENT AND MULTISECTORAL APPROACHES

Integrating sanitation and environment assessments for use in emergencies

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REFEREED PAPER 264

Emergency response is characterised by the need for rapid and effective assessment of the existing situation to allow for informed decision making. It is within these constraints of limited time and resources that personnel are expected to implement life sustaining interventions. During this time the consideration of cross-cutting issues such as the environment are limited as they are not seen as an integral part of immediate emergency response. Environmental awareness needs to be improved during emergency response to avoid future implications for the population and the environment upon which they depend. This study therefore focused on determining the likelihood of successful integration of environmental considerations within an existing emergency sanitation assessment. It tested two assessment methods, one for environmental sanitation and one for environmental impacts in a refugee camp in Zambia and makes recommendations on the practical application of these frameworks.

The need for emergency assessments

Emergencies are dynamic situations where rapid but informed decisions and the prioritisation of interventions need to be made within the limited time and resources available. The environment is not seen as a priority in emergencies; whilst human life does need to take precedence, there also needs to be consideration of the environment to avoid future implications on human life.

The environment, human welfare and emergencies are interlinked because '*serious environmental problems generally pose serious immediate or long term risks to humans'* (Kelly, 2005). Thus, environmental considerations need to be integrated into relief programmes to provide more effective conditions in the short and long term for all concerned. The environment is not a core priority during an emergency; the focus of the humanitarian organizations is to preserve life and maintain dignity. The prerogative of many emergency organisations is to stop the situation worsening and to provide services equal to those pre-disaster. Eventually, relief activities move into more long term development initiatives and any damage to the environment may have future implications.

Good information is essential in emergencies but there are few existing assessments which are appropriate for use in situations where time, resources and personnel are limited. The existing assessments focus on a sector view such as the provision of water or food and subsequently there is a tendency to either ignore or tag-on the more cross cutting issues such as the environment. This is problematic due to the close relationship between a healthy environment and a healthy population. Emergency assessments should not only focus upon individual sector issues but also incorporate the environment to avoid unnecessary damage.

The research

The research focused on emergency sanitation and environmental assessments during the immediate stages in complex emergencies, when the focus is on sustaining human life with the objective of seeing if environmental considerations can be included in emergency sanitation assessments. The assessment focus was on 'environmental sanitation' issues within an emergency such as waste water management, excreta

disposal and drainage. Hygiene promotion is included in various definitions of environmental sanitation but was not included in research due to its longer-term focus and the difficulties in assessing it.

The research was concerned with the environmental impact of mass displaced populations, irrespective of the reasons for their movement, because humanitarian activities for the displaced population on typically unused and environmentally-fragile land will be similar for all displacement causes, yet are more visible during a complex emergency than a natural disaster.

Refugees, the environment and emergencies

The presence of refugees brings the environment to the forefront because a previously unused environmentally fragile area of land cannot support such a large influx of people without negative impacts on the environment and its biodiversity. '*It is very often the case that displaced populations are forced to rely on natural resources available to them locally in order to sustain themselves on the short term'* (Black, 1998: 15). If not controlled or coordinated, these actions may lead to problems of natural resource degradation and this is the main problem associated with the refugee operations due to the intense, sometimes unsustainable and/ or prolonged use of the resources. Other environment-related issues caused by refugees such as '*pollution caused by concentrated use of biomass fuels, the depletion or contamination of aquifers, and an altered pattern of transmission of certain diseases'* (UNHCR, 1998: 6) are also problematic but are not as visible as forest degradation and so may be overlooked by the authorities, even though these adverse impacts can be just as severe.

Emergencies and assessments

Davis & Lambert (1996: 60) state that when conducting any assessments in emergencies *'the principle should be to collect enough information to implement an effective response'*. The assessments are necessary to provide information to allow action to be taken in order to save lives, protect health and stabilise the situation and also to avoid making the emergency worse (Wisner & Adams, 2002: 42). The collection of unnecessary data is an ineffective use of time, money and resources. In contrast, if an inadequate assessment is conducted then an ineffective response may result and similarly time, effort and money will also have been wasted. This 'enough information to be effective' idea is a difficult balance to achieve and so it is better that tried and tested methods are used in the field so that information is collected effectively.

Methodology

After an extensive literature review and discussions with field staff from a relief agency, two existing assessment frameworks were identified. Both frameworks had been field tested during their development, but at the time of the research, neither had a significant record of practical implementation. The assessment methodology was to trial both methods under field conditions, to assess and compare them and to discuss the process and results with relief agency staff. Additional field information was gathered using transect walks, observations and key informant interviews.

The field research took place in Kala refugee camp, Zambia, established in 2000 and located in the Luapula province in north-west of Zambia. It is adjacent to the Democratic Republic of Congo (DRC) border and hosts just over 18, 000 Congolese refugees who fled the conflict there. Kala camp was chosen as alternative less established refugee camps had security issues and the UNHCR Sub-office in Kawambwa was willing to host the visit.

The two standard assessments selected were successfully carried out in the camp in 2007. The research techniques applied were flexible and opportunistic in nature due to the unknown conditions, field constraints and the author's inexperience in emergency, sanitation and environment situations. Household observations, transects, purposive sampling, stakeholder analysis and semi-structured interviews with key informants were all conducted to gather the necessary data and also to allow for triangulation. Constraints did exist in terms of time, transport, language and a lack of a true representative map of the camp, however, these were indicative of problems faced within the field and even more so of those faced during an emergency situation. These consequently assisted in providing more realistic conclusions and recommendations.

Overall the fieldwork proved successful because despite the challenges faced, the research objectives were, in the main, achieved and this bodes well for the use of both assessments in the field.

Standard assessments

The overall view of Kala Camp was one of a well planned and ordered settlement. The provision of water was extensive and accessible to all and sanitation facilities were present throughout the camp. There was

evidence of drainage channels and soak away pits. However, there was also evidence of standing water especially around water and laundry points, with a high potential of mosquito breeding. Although it was not ideal for the research of an *emergency* assessment, it did provide a representation of the challenges faced.

Due to the distinct limitation of emergency assessments available in the literature reviewed there was a definite choice for use in the research.

'Emergency sanitation' assessment

The 'Emergency Sanitation' assessment book (Harvey et. al. 2002), based upon the Sphere Standards, provided complete guidance for the assessment of sanitation; this research contributes to its testing. The 'Emergency Sanitation' assessment book is divided into three sections.

1. The 'manual' section provides information concerning the selection of an appropriate style and level of intervention, including operation, maintenance, design and construction information as well as associated risks and constraints of interventions as well as options for immediate and long term measures. It also provides information on the minimum standards to define the levels of appropriateness and numerical values when completing the assessment tables.
2. The 'guidelines' are used for the completion of the assessment tables. The 'manual' and 'guidelines' both provide a clear, format for the collection and presentation of data
3. The checklist information and assessment tables are extremely good at providing a summarised overview of a sector situation whilst the summary tables are useful in compiling the tabulated information together for comparison. The box provides an example of a checklist used.

The assessment covers background information (A) and six issues within the definition 'environmental sanitation'; 'B: Excreta Disposal, C: Solid Waste Management, D: Waste Management at Medical Centres, E: Disposal of Dead Bodies (see completed checklist for this issue below), F: Waste Water Management and G: Hygiene Promotion. (For more information see Harvey et. al, 2002).

Checklist E: Disposal of dead bodies

General Description July 2007

The camp burial site is approximately 2.6 ha (26, 000 m²) and is located 150 m from the nearest habitable building. It is the second burial ground due to the extremely close proximity of the original one to surface water sources. The refugees carry out the burials and provide everything (cleansing, transport, money) as is traditional for themselves. However, organisations do provide the cloth necessary for burial. All refugees, from all tribes and religions, can be buried in the cemetery. There have not been any epidemics to date and so the disinfection of bodies has not been necessary. No cremation occurs.

Quality
- Facilities are very appropriate, although transport and tools are generally provided by the refugees themselves.
- Potential hazards for disease transmission: minimal hazard. No epidemics to date but a cholera kit is available.
- Current facilities and systems are socially and culturally acceptable.
- Current facilities and systems can continue to be used for years.

Quantity
- Space available for burial sites: approx 14, 000 m²/ 10, 000 population
- There are no cremations and so fuel is not needed.
- Distance to burial site from nearest habitable building: 150m.
- Proportion of bodies properly disposed of in an appropriate time: > 95%.

Usage
- Proportion of the affected population with access to and willing to use the designated facilities: >95%.

(based on Harvey, et. al. 2002: 231)

Environmental indicator framework

Prior to the research, discussions with Médecins Sans Frontières (MSF) field personnel allowed an information gap to be highlighted from their perspective. It was stated several times that the field staff felt they did not consider the environment enough in an emergency due to the short term response nature of their work. Further reviews and searches of existing emergency assessments highlighted an apparent gap in the lack of Rapid Environmental Assessments (REA) in complex emergencies. However, the REA process had recently been adapted for use in refugee situations and this was called the 'FRAME Project' (piloted in 2005). The FRAME Project is a joint initiative between CARE International and UNHCR and consists of environmental assessments of varying detail and duration for use within refugee and returnee situations. The FRAME Project (UNHCR & CARE International, 2005) had only limited case studies available and this led to the trialling of the process.

The completion of the entire FRAME Project was unrealistic in terms of time, resources and experience for the scope of this emergency-focussed research, so only one of the seven modules were chosen. Modules which required more time and personnel which could not be guaranteed within the camp were discounted. In addition, those modules which have already been tested were not used. The selected module (Environmental Indicator Framework) can be conducted by one person within 72 hours. This is a collection of score cards which provide guidance to the 'ideal' situation and suggested methods for data collection and allow for the rapid identification of relief interventions which have environmental impacts. The summarising tables allow for comparisons which in turn provide a focus for the limited personnel, time and resources within an emergency situation. The score cards chosen were those which related to 'environmental sanitation'.

Results

The research was focussing on the "assessment process" rather than the specific sanitation or environmental status of the camp.

'Emergency sanitation' assessment

The individual sector assessments (A- F) were completed by consulting the checklists to determine the data needed and the data collected and transferred onto the checklists and tables using the definitions provided (Harvey et. al, 2002) to provide an overview and further details respectively. The individual assessment totals were then transferred onto the sector analysis tables to allow prioritisation of issues to take place.

The 'Emergency Sanitation' assessment was completed with few problems using the textbook checklists and definitions for order data collection. The 'background information' was readily available. The household observations were the most time-consuming aspect of the assessment, but did corroborate the (seemingly) little variation in household and sanitation throughout the camp. Information for three different issues (excreta disposal, solid waste management and waste water management) was gathered simultaneously due to the need to observe a selection of households concerning their disposal and management techniques. This allowed a structured but extensive view of the camp to be obtained. 28 households and 3 institutions were surveyed.

Environmental indicator framework

The Environmental Indicator Framework score cards were completed relatively quickly due to the nature of data collection chosen. A key informant was located and the questions within the score cards were asked. Individual answers were recorded on the score card and these were then totalled and the sector total transferred onto the results cards which compiled individual score card information for comparison. There were very few problems faced as the format was clear and easy to understand with good guidelines for assessment. The Score Card information was in the main gathered through semi-structured interviews with camp key informants although one required observations and so this was carried out when the information required from the 'Emergency Sanitation' assessment was gathered throughout the camp. The biggest constraint faced was that of locating and accessing the key informants desired to obtain the required information.

Both the assessments reflected the situation which was observed throughout the camp. The Environmental Indicator Framework was a straightforward assessment which clearly highlighted the existing good points of each section assessed as well as areas which needed improvements. The largest query posed by the completion of the 'Environmental Sanitation' assessment tables was concerning the interpretation of different words, the word 'appropriate' did cause a few uncertainties, despite its being defined in the textbook. This is because it was evident throughout the camp that the burial of waste as a disposal method

was being sustained by the refugees, yet this did not fall under the textbook definition within its entirety, thus this then posed the question which is more appropriate; 'an ideal situation which is not sustainable because refugees are dependent on organisations or alternatively, a not so ideal situation which is sustainable because refugees are responsible for themselves and it is an improvement on previous practices?'. The fore mentioned issues meant that it was sometimes difficult to enter data and numerical values for data into the table format as the answers and information gathered were not always as distinct as the options provided in the table.

Comparing assessments

The 'Emergency Sanitation' assessment is based on the Sphere Standards and this is advantageous because emergency personnel will already have knowledge of the content and so will simply have to be made aware of the assessment process. The content will be similar to the information already gathered as recommended by the Sphere Project during an emergency, thus creating no further unnecessary work for personnel, but instead assisting the process of compiling and ordering gathered information during emergencies. The 'Emergency Sanitation' assessment (Harvey et. al. 2002) is also ideal because the 'manual' section of the text book provides information about a wide range of practical issues. It provides information about interventions and issues which may or may not be known or which may be forgotten in such a stressful time and could assist with more effective decision making. In contrast, it is solely up to the Environmental Indicator Framework user to determine available options to achieve the ideal situation as illustrated within the score card and although in some cases this is straightforward, the details of how to achieve it may require more environment knowledge than the user may have, particularly if a non-environmental specialist is using it.

The language used throughout both the assessments was easy to understand. However, for those with lower levels of English, prior knowledge of environment/ sanitation issues and interventions may assist with their understanding upon translation. The author has prior knowledge and understanding about the issues involved and the data collection methods but no emergency experience, yet the assessment was still completed correctly (pers com Harvey, 2007). However, in a different situation it may be that those with the knowledge and experience may need to direct and explain the assessment to those without experience, focusing on information concerning a few specific issues to be collected instead of a non-specialist being overwhelmed by the entire assessment.

The Environmental Indicator Framework score cards were the quicker of the two assessments to complete and this is partially due to the amount and level of information and observations needed to complete the 'Emergency Sanitation' assessment. The Environmental Indicator Framework proved simple to use and this was reflected in one simple table with distinct 'yes' or 'no' answers, which were then totalled for that sector. The 'Emergency Sanitation' assessment proved slightly more time consuming due to the information required from different sections of the book as well as different recommended minimum standards and definitions of the terms. This could prove time consuming and problematic when locating definitions and when calculating and transferring the data collected but it resulted in a greater overview being obtained.

Both of the assessments were completed within the three days stated by the FRAME Literature (UNHCR & CARE International, 2005), thus collecting sufficient data to make informed decisions. The information required for both assessments was accessible although not necessarily at the required time or rate due to constraints in the camp. Both of the assessments were conducted by one person, although support was needed in locating key informants in specific interest areas as well as for translation.

Both assessments rely on the input of qualitative data to derive a numerical value for the comparison of different issues and sectors to take place. The 'Emergency Sanitation' assessment in particular, results in a numerical value being derived from qualitative data and means that the question, information and tables are open to interpretation. This makes the textbook descriptions and definitions of 'technical appropriateness' for example, a strength and an integral part of the assessment to ensure that the margin of error is kept within one or two values instead of being much larger. The intervention levels table accounts for any minor margins of error as the determined numerical score is placed within a range of figures. The 'Environmental Sanitation' table format does allow data to fall between definitions and this is beneficial because the real situation will not reflect an entire definition. A determined value which is between two definitions but closer to one can therefore be entered into the table in a more accurate manner. This again, reduces the margin of error when qualitative data becomes a numerical value and is in contrast to the 'yes/ no' in the score cards which do not always allow for less than definite answers.

The score cards only provide space for additional comments within the results tables at the end of the assessment and not the individual table.

Despite these comments, both assessments are useful in their entirety to assess the individual sectors relative to one another. They also allow priorities to be ordered so that those sanitation and environmental interventions with the lowest acceptable level or alternatively with the highest negative environmental impact can be targeted with the time and resources available.

In summary, both assessments provided a means to obtain the intended information using the intended processes. The inputs were certainly reflected in the outputs as the 'Emergency Sanitation' assessment provided an all round view of the sanitation practices and beliefs, whereas the score cards provided a quick comparison to show which areas within specified issues require the most focus in order to reduce their environmental impact. It is the author's opinion that the 'Emergency Sanitation' assessment, provides a framework which is ideal for the ordered collection of baseline data necessary to respond to an emergency and that the environmental considerations will come in later stages once some interventions and plans have been made. It is also the opinion that this is where the Environmental Indicator Framework score cards are ideal for use, in determining the level of environmental impact of projects and subsequently to allow measures to be taken to minimise any negative impacts.

Can environmental considerations be included in an emergency sanitation assessment for use during an emergency?'

Environmental degradation is becoming more of a concern for organisations such as UNHCR and also for those already present in the field such as MSF. This research therefore, attempted to determine if indeed it was possible to integrate the environment into the sanitation assessment in order to allow consideration of the environment whilst planning and implementing any interventions. The conclusion reached from the research was that both assessments were suitable for their purpose; an ordered collection of baseline data and subsequent assessment to obtain an overview of the situation and, a quick checklist concerned with environmental impacts to allow for rapid identification of any problem areas. However, the short answer to the question is that 'no', the environmental considerations in the format conducted cannot be added onto the emergency sanitation assessment which was completed. The 'Emergency Sanitation' assessment and the Environmental Indicator Framework are not compatible enough in their focus and issues covered to merge completely. A total integration of the two would not be realistic due to the different formats and ideal levels of knowledge necessary to carry them out.

However, despite the decreased likelihood for integration, it is still deemed necessary to include environmental considerations within the sanitation assessment. This is because the issue of the environment solely as a cross-cutting issue (Sphere Project, 2004), means that it is everyone's responsibility. Yet at the same time, it is no ones and this further increases its marginalisation from the core priority issues within an emergency. Once 'the environment' is mainstreamed it will then become someone's responsibility and will therefore not need to be tagged onto any other assessments.

Recommendations for improving the assessments

'Emergency sanitation' assessment

Despite the conclusion that these two assessments cannot be integrated, it is also concluded that presence of the environmental considerations in the 'Emergency Sanitation' assessment (Harvey, et al, 2002) would be possible and successful. However, it is also concluded that minor changes should be made to the 'Emergency Sanitation' assessment (Harvey et al, 2002) itself as the assessment will be conducted by sanitation, not environmental personnel. The environment is mentioned in the 'Emergency Sanitation' assessment but with respect to other areas of concern such as human health and disease transmission. The concern with water resources within the 'Emergency Sanitation' assessment mean that parts of the environment are already being considered and therefore, the assessment simply needs to include the wider environment with specific reference to sanitation and its impacts. This change involves the inclusion of an extra section into the textbook with the heading 'The Environment'. This in itself will draw attention to the environment and further information, explanations and examples which detail environmental impacts within the textbook will therefore provide an overview to assist with increased awareness and understanding. If personnel clearly understand the future implications of environmental degradation for the health of the environment as well as the population then this may mean that more consideration of impacts upon the environmental will take place.

A strength of the 'Emergency Sanitation' assessment is that it is based on the Sphere Project (2004) and is therefore relative to emergencies and recognisable to those working within them. However, the issue of the environment as a cross cutting factor within the Sphere Project was translated into the content of the 'Emergency Sanitation' assessment and therefore there was little explicit reference to the environment within it. The recommendation made for the 'Emergency Sanitation' assessment amendment would also be recommended for the Sphere Project in order to increase environmental understanding and awareness amongst those who use it. A similar comment could be made for other cross-cutting issues, such as gender, which is "mainstreamed" in the 'Emergency sanitation' document, but this makes it difficult to pull out some social aspects out of the assessment process.

It is recommended that the 'Emergency Sanitation' assessments maintain the same format and that the checklist use for ordered data collection is encouraged but with some slight adaptations. For example, the expansion of the initial question to include the key criteria which determine what 'technically appropriate' is could prove useful (see below).

Are facilities and systems technically appropriate? Including:

- Keyhole size and shape?
- Foot rests present?
- Inside latrine dimension
- Superstructure for privacy and weather protection?
- Drainage around facilities?
- Access path present?
- Appropriate for use in all seasons?
- Accessible and easy to use by all vulnerable groups (children, women, especially pregnant women, disabled and the elderly)
- Lit at night?
- Personal security for vulnerable groups especially women?

If information such as this was added to the checklist information then it would be easier for camp personnel to check off the information to allow transferral of complete information to the checklist and table. This would also make it easy to encourage the use of the assessment as non-specialist personnel would be more likely to be able to answer the questions without having to read the book first.

The promotion of the existence of the assessment itself is also recommended because it is a straightforward assessment which provides a clear overview of environmental sanitation issues, and its promotion would make people aware of it and would allow them to become familiar with it for future use.

Environmental indicator framework

There were a few problems with definitions and interpretations of both the questions themselves and terms used within them. The score cards completed were in the main easy to use and there is the need to maintain the simple format so that overall scores can be obtained. However, if the questions and format are too simple then the likelihood of misunderstandings and misinterpretations are increased, thus resulting in an incorrect overview. Therefore, it may be beneficial to have explanations and/ or pictures attached to them in order to give the user a clearer idea of what the actual question emphasis is.

One of the recommendations in Stone et al (2006) stated that 'additional training workshops should be envisaged by UNHCR and CARE International to further extend the reach of the FRAME Project to intended users'. This is a worthwhile recommendation so that in the longer term, development agencies can benefit from the use of other modules when considering the environment. It is felt that increasing the knowledge of emergency personnel with regard to the checklists in Module V Environmental Indicator Framework would also be worthwhile as these are easily and quickly completed and result in clear prioritisation of intervention needs.

Lessons learnt

It would be unrealistic to advocate placing "the environment" at the forefront of all interventions including emergency sanitation. It would be much more realistic and effective to increase the awareness and understanding of field personnel in order to prevent avoidable negative environmental impacts being made

initially. Whilst the assessment of environmental sanitation cannot be used as a substitute for environmental assessment, it can be adjusted to reduce adverse environmental impacts in the first place.

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Note/s

This study was carried out as a thesis for an MSc in Water and Environmental Management at WEDC, with project supervision by Brian Reed.

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