

Challenge Candidate List – Solid Waste Management in Emergencies

This working document is a summary of the key challenges presented in the WASH Problem Exploration Report on Solid Waste Management in Emergencies.

Topic	The Challenge	Innovation Needed	Type of intervention	Who will use it?	Existing Work
Disposal methods					
	Improve plastic bottle reuse/disposal in different phases of emergency situations.	Effective disposal methods for water bottles. Such methods are currently missing in emergency settings and often lead to significant challenges such as the blockage of water ways and latrines.	Research and development of guidelines on best practice for plastic bottle disposal/reuse/ recycling in different emergency situations.	Aid agencies and NGOs	Some research has been undertaken on the challenge of water bottles blocking waterways and latrines, but there are not yet guidelines on the most appropriate ways to dispose of bottles in emergency situations.
	Redefining the normative ideal of recycling. Recycling is often seen as best practice, yet may not be practical in all emergency contexts, and often requires significant infrastructure.	Guidelines outlining when to recycle and when to use alternative waste management methods.	Field research to understand the costs and benefits of recycling in emergency situations. This should focus on the principle of BATNEEC.	Aid agencies and NGOs	There is existing research on recycling plastic bottles, and the infrastructure requirements for this. However these have not yet been translated into guidelines for recycling and alternatives in emergency settings.
	Reduce the incidence of water bottle disposal in latrines. Currently water bottles are often used to carry water to latrines for anal cleaning purposes. They are regularly thrown into latrines following use, blocking drainage systems and leading to latrines filling up more rapidly and requiring more regular emptying.	Strategies to encourage use of reusable cleaning water carrying methods, and to discourage disposal of water bottles in latrines.	Trials of existing alternative methods for providing water for cleaning, and development of new methods.	Aid agencies, NGOs and local people	Reusable water jugs that are monitored by a latrine caretaker during daytime have been trialled in South Sudan. However during the night, water bottles were still used and thrown in the pit.
Provision of drinking water					
	Increase trust in the safety of alternative sources of drinking water than bottled water. Bottled water is regularly seen as a safer option than other sources of water. This perception often extends to aid agency workers, resulting in a high demand for bottled water.	Better communication on the safety of alternative mechanisms for producing and distributing drinking water, to both local populations and aid workers. Guidelines for the use of bottled water by aid agency workers.	Communication of understanding between aid agencies on guidelines for use of bottled water. Research into methods to promote the use of alternative safe drinking water.	Aid agencies, NGOs and local people	
	Reduce over-reliance on bottled water in emergency situations. Plastic water bottles are imported in huge numbers to emergency situations. They are rarely disposed of properly.	Alternative use of aid funds to provide drinking water in emergency situations. For example it would be possible to spend money on distributing water filters rather than bottled water.	Workshop between aid agencies to develop a common understanding of situations in which alternatives to water bottles can be used.	Aid agencies and NGOs	The Humanitarian Research Group conducted research into the distribution of water bottles in Haiti in 2010.
Better packaging					
	Reduce the volume, weight and re-usability of packaging. Waste packaging of aid products and the containers that they are transported in represent a huge burden on waste management teams. It would be extremely desirable to reduce the amount of packaging, and to increase its re-usability.	Lightweight, low volume and dual purpose packaging and containers for supplies sent to emergency situations. In particular, alternative designs for plastic bottles that have additional utility outside of carrying water, or are biodegradable, are needed.	Product/packaging innovation.	Aid agencies, NGOs and local people	Similar concepts for packaging include: Aqua box S(P)EED KITS However these are not yet widespread, and do not cover all packaging materials.
Altering perceptions of waste					
	Creating a feeling of ownership of waste. Currently in many emergency situations, those affected lack a feeling of ownership of public spaces. This leads to an accumulation of solid waste.	Research into and development of methods of encouraging behaviour change in affected populations to reduce the incidence of littering.	Research, development and testing of promotional messages and advice to encourage ownership of public spaces.	Aid agencies, NGOs and local people	There has been research studying how Syrian refugee communities have taken ownership of waste by establishing internal community WASH committees. However more research is needed to understand how this type of ownership could be extended to other situations and emergency types.
	Improve Aid Agency Solid Waste management. Currently aid agencies produce significant amounts of solid waste during an emergency situation. There is concern over the image of waste produced by aid agencies (e.g. beer bottles).	Better understanding of the most appropriate management of different types of aid agency waste. Possible innovation in processes to allow for reuse of materials by local populations.	Research into most appropriate practices, and workshop to bring together aid agencies to develop guidelines for all types of aid agency waste disposal.	Aid agencies and NGOs	There is existing research into the problems of aid agency waste.
Opportunities for local populations in SWM					
	Investigate the potential of scavenging. High value solid waste is regularly recovered and reused by local communities through scavenging. This is often viewed negatively, yet it offers income and useful materials to local people.	Guidelines to indicate the extent to which scavenging can be a part of a safe and appropriate waste management solution.	Field research on the advantages and disadvantages of scavenging in different contexts. This should focus on safety.	Aid agencies and NGOs	

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	<p>Increasing opportunities for employment in the aftermath of emergency situations through aid agencies employing members of local populations as Solid Waste Management workers.</p>	<p>Research and guidelines developed to understand where and when this form of employment can be appropriate and sustainable in an emergency setting.</p>	<p>Development and trials of employment schemes, in collaboration with local governments.</p>	<p>Aid agencies, NGOs and local people</p>	<p>This has been trialled in at least one existing camp, however more work is required to understand environmental, societal and institutional challenges.</p>