HUMANITARIAN INNOVATION FUND

Interim Report

Organisation Name	GOAL Kenya

Project Title	Integrating social enterprises into emergency faecal sludge management
Problem Addressed / Thematic Focus	Improving Faecal Sludge Management (FSM) in emergency responses through upgradeable bag based sanitation and an integrated sanitation value chain
Location	Kenya
Start Date	1 September 2014
Duration	8 months (ends 30 April 2015)
Total Funding Requested	162,219 GBP

Partner(s)	Sanergy
Total Funding	162,219 GBP

Innovation Stage	Phase 1-2
Type of Innovation	Faecal sludge management in emergencies
Project Impact Summary	The first six months of the project have been completed with a number of key milestones achieved. The stakeholder forum has been formed, three meetings held and there is an overall acceptance that the project is aiming to address an unmet need. Key design drivers for the development of a faecal sludge transfer station have been developed and design direction has been approved by external stakeholders.

Reporting Period	**1 September 2014 – 28 February 2015**
Total Spent	**31,345 GBP**

PROJECT ACTIVITIES AND OUTPUTS

What have been the key achievements of the project?

What were the major activities and outputs of the project (this may include a description of the activities conducted and how they related to the work plan)?

What adjustments and adaptations were made through the course of the project? Why were these needed and how were these made?

Please explain any budget variations greater than 15% of the original budget headlines

---

In order to respond to sanitation needs in urban rapid-onset emergencies where only limited space is available, GOAL and Sanergy partnered with the Humanitarian Innovation Fund (HIF) to develop a Faecal Sludge Management (FSM) kit that can be quickly and easily deployed in such situations. Beyond the mere technical aspects, linkages between non-governmental organisations (NGOs) and social enterprises (SEs) would also be explored in order to create mechanisms for the gradual transition and handover from a humanitarian response towards a social enterprise model as a reliable exit strategy. The project will go through four phases to achieve these objectives over an expected period of 18 months.

For the time being, GOAL and Sanergy have secured funding from HIF for the first two phases that started in September 2014 and will end April 2015.

- Phase 1: Research, partnership identification and development of specifications for the technology
- Phase 2: Development and testing of the prototype and building humanitarian / social enterprise linkages and preparedness planning

In the first six months of the project, a stakeholder group was initiated and three meetings were convened. These covered the following topics:

- Project introduction and clarification of group aims – stakeholder feedback has been strongly positive, particularly from social enterprises, and cases of poor consistency in attendance at stakeholder meetings has been put down to scheduling as opposed to lack of interest
- Identification of additional stakeholders (some of whom are being brought into the conversation remotely)
- Discussion of initial design parameters by Sanergy product development team
- Humanitarian responder incentive systems for bag-based sanitation
- Initial discussions on establishing joint humanitarian agency and social enterprise contingency plans
- Discussions held about potential field testing locations, considering that the location needs to have used or is currently using bag-based sanitation systems in an on-going emergency response
- Feedback from stakeholders on initial design report

Detailed minutes have been taken for all meetings and these are located in Appendix 1.

The modalities of communication with members of the stakeholder group had to be adjusted, as while quarterly meetings in Nairobi are very useful, with so many regional advisor members it can be difficult to find a suitable date. Therefore GOAL has taken on the role of communicating individually with stakeholders outside of the formal meetings. This also includes the regular updating of information on the Dropbox folder to ensure information is shared equally.

On the design aspects of the project, the following are the key achievements:

- Development of initial design drivers and specifications (with input from stakeholder group), including:
  - Shipping/transport
  - Site constraints
  - Installation
  - User interface
  - Safety and integrity
  - Enterprise transition
  - Enterprise operation
- A design visit was carried out to Kakuma refugee camp in Kenya, for which a visit summary is included in Appendix 3 (more details below)
- Finalisation of initial design report (Appendix 2)

The design scope has changed based on the inputs given by humanitarian agencies and social enterprise stakeholders, both regarding the design drivers and feedback on the design report. For example, there was initially an intention to ensure the whole product could be imported as one unit to the emergency location; however stakeholder feedback suggested that storage tanks were relatively easy to obtain in most countries. Furthermore it was suggested that limiting the importation requirements for the product would avoid timely delays with customs. Also it was stated the system should have sufficient storage to hold waste for one week, as this will enable responding agencies to put in place the necessary logistics to enable the emptying of the transfer station. Numerous other suggestions were mentioned by stakeholders, further details are included in the first meeting minutes (Appendix 1).

There have been no spends exceeding the initial budget by 15%.

INNOVATION OUTCOMES

What were the outcomes of the project (positive or negative) and how did these follow from activities and outputs described above?

Has the project demonstrated the success of the innovation?

If yes, what evidence is there for the performance of the innovation?

If no, what are the key lessons about the innovation or area of practice?

Do the outcomes support the initial rationale for the innovation?

How has your understanding of the innovation changed through the project period?

Did the innovation lead to any unexpected outcomes or results? How were these identified and managed?

What are the key lessons learnt relating to the innovation (this should relate to the innovation itself, rather than project implementation)?

The project is still in its early phases (6 months report of the planned 18 month project design) and therefore overall project outcomes are yet to be achieved. Table 1 below summarises the progress against agreed project milestones.

The project has had to ensure that the views of a variety of stakeholders have been incorporated, and that the Sanergy product development team had chance to visit humanitarian contexts. As a result of competing schedules of external stakeholders and time taken to arrange suitable field visits, this essential component of building consensus around design parameters and understanding project scale means prototyping has been delayed. This is now anticipated to be complete by end of August. Implications of this delay will be discussed with manager of the Humanitarian Innovation Fund in due course.

Table 1 – Progress report against Phase 1 & 2 milestones

Milestone	Progress
Phase 1 Research, partnership identification and development of specifications for the technology	
Partner identification, partner inception meeting, and solidification of aim of partnership, including a solid understanding of operating conditions (between humanitarian agencies and social enterprises) *Indicators:* *- three formal partners* *- eight or more wider stakeholders* *- partner inception meeting report*	GOAL and Sanergy are partnering formally for this project, with active support from UNHCR and UNICEF for field visits. Further stakeholders have also been identified and an inception meeting was held in September. This meeting was also an opportunity to identify additional stakeholders. The project aims were clearly explained and agreed upon with stakeholders. Understanding of operating conditions between humanitarian responders and social enterprises was discussed; however this understanding will progress more during the project period. The minutes for this first meeting are included in Appendix 1.
Desk study and field research into current operations and initial concept development	Desk study has been completed by the Sanergy product development team and is included in the Design report (Appendix 2). A field visit to Kakuma

Indicator: *- Desk study report*	refugee camp has been carried out in November. Details of this visit can be found in Appendix 3.
Design drivers and specifications completed for Waste Transfer Kit - including target scale of inputs, appropriate processing technologies, and adaptive needs throughout the transition to sustainable enterprise operations *Indicator:* *- Specifications documented and agreed*	This has been completed with the design driver areas mentioned above. This has resulted in the identification of the problems that relate to managing waste at a large scale, and that the solution will have to be a trade-off between number of units deployed and the volume of these units. The units will also need to be able to receive a variety of inputs, including anal cleansing materials such as stones. The needs of social enterprises have been integrated into the design as many of the design constraints are similar. These specifications have been document in the Design report.
Documentation of usage and case definitions, assumptions, broad design specifications and functional requirements *Indicator:* *- Quality documentation*	The design report is in Appendix 2. One significant assumption is that the input to the system is only bag-based waste, as the system design would vary greatly if the waste input is to include pit latrine and septic tank waste, as the solids content will affect the pumping systems required.
Initial development of deployment scenarios, outline attributes of testing settings, with relative merits and possible detriments *Indicator:* *- Scoping document outlining scenarios*	It was determined that a deployment scenario would preferably already use bag-based sanitation systems, as this is the particular design criteria the project is working with (see above). There are limited contexts where this is currently the case. The Protection of Civilians (PoC) sites in South Sudan are an on-going humanitarian context that is likely to use bag-based sanitation again in the future. Following discussions held between GOAL and the WASH Cluster Coordinator in Juba, it was determined to proceed with plans for testing in South Sudan. Initial functional testing will be achieved in Nairobi by the Sanergy product development team prior to testing in any humanitarian site. Priority here is on functionality and not on business/service modelling.
Phase 2 **Development and testing of the prototype and building humanitarian / social enterprise linkages and preparedness planning.**	
Development of the benefits of increased linkages between humanitarian agencies	Linkages between humanitarian agencies and social enterprises have been

Comment [GR1]: Indicator:
- scoping document outlining scenarios

Do we have this? Or do you mean above that our ONLY scenario here will be bag-based sanitation?

NBoot: Yes, our only scenario is bag-based sanitation, as per our initial brief. It would also support container based sanitation solutions in the future.

If yes, are there any scenario variations within that? For example based on:
- geography
- type of emergency
- number of people
- topography of settlement
- cultural aspects
- timeframe (say short displacements caused by floods as opposed to continuous arrivals caused by ongoing conflict)

NBoot: Anything with bag-based sanitation being used is fine. However, the point is we need to find a humanitarian context that already exists i.e. we are not able to wait for one to happen. Juba presents the most suitable testing environment.

and social enterprises through partnership meetings and case studies *Indicators:* *- Regular partner meetings* *- Attendance at networking or CoP events* *- Production of case studies*	consistently developed during partnership meetings through examining relevant problems both from a humanitarian and social enterprise perspective. Some case studies have also been discussed, in particular the use of Pee Poo bags by Oxfam in Port-au-Prince and more recently the Philippines. Documenting new case studies will be completed by the end of Phase 2.
Development of preparedness/ contingency plans by social enterprises and NGOs operating in the same city. *Indicator:* *- Plans developed that iterate links between SE and NGO actors*	The development of various contingency plans is beyond the scope of the current voluntary stakeholder group model. For this reason only GOAL and Sanergy will work in collaboration to develop a contingency plan for Nairobi by the end of Phase 2. This will provide the blueprint on which further joint contingency plans can be based.
Quarterly partner meetings focus on appropriate incentive systems for early emergency response that ensure safe FSM but limit damage to future viability of market-based approaches *Indicators:* *- Attendance and meetings*	Incentive systems have been discussed in-depth during the second stakeholder meeting (minutes in Appendix 1). This has resulted in some agreement that incentives for primary disposal should be further investigated during the initial response, as this is something that has the potential to negatively impact future social enterprise approaches if not suitably selected. NGO responders should also quantify the costs required to complete transportation, disposal and treatment of the waste. This will assist future social enterprise model development.
Further development of deployment scenarios, with costing and partner agreement for support where needed *Indicator:* *- Production of viable costed scenarios*	Costing will be achieved by end of Phase 2. Broad partner agreement with South Sudan WASH Cluster Coordinator is already in place.
Production of functional Waste Transfer Kit prototypes to test in diverse usage contexts, integrating design drivers set by partner organisations *Indicator:* *- Prototype developed*	Prototype development process to start soon. Completion by end of Phase 2.
Component testing of potentially integrated technologies (de-watering, smell elimination, bag dissolving rate,	Completion by end of phase 2. Initial findings suggest that de-watering and disinfection are not necessary for this

disinfection, etc.) and results report on respective safety/complexity/cost/etc. *Indicator:* *- Activity documentation, results report*	technology. See Appendix 2 for details.
Short-term testing of Waste Transfer Kit in different usage cases (identifying frequency of deliver/pick-up, volume of inputs, range of kit sites, etc.) *Indicator:* *- Test results*	This will follow prototype development and be tested locally within the context of Sanergy.
Prototype refinement and secondary testing based on findings *Indicator:* *- Activity documentation*	Estimated to be completed in June.
'At-volume' testing pf prototype with regular collection and disposal	To be completed in August.
Research and development findings report developed and disseminated to consortium members *Indicator:* *- Report produced and disseminated*	To be completed in August.
Documentation of design direction as a result of product testing and consortium feedback *Indicator:* *- Report with feedback*	To be completed in August.

Comment [GR2]: I am not sure what are plan is here. Phase 2 is supposed to end April 30 and at this stage we do not know if we will get any other funding. Even if we do, that would be for Phases 3 and 4 and NOT to finish Phase 2. So are we going to ask for an NCE here? If not, what is the way forward?

Comment [NB3]: Yes. I anticipate a NCE request is needed. I have asked Sanergy to verify, but cannot see another option. This will give us more time to develop and for HIF/peer review to decide on the future of the project.

Comment [GR4]: See comment above

Comment [GR5]: See comment above

Comment [GR6]: See comment above

In order to demonstrate success in the future, the project identified Juba, South Sudan, as a potential field-testing location (with possibly testing in field sites further north of Juba if sufficient logistical support can be mobilised to reach these locations). This has been agreed with the WASH Cluster Coordinator in Juba by GOAL in bi-lateral discussions that were reported back to the wider stakeholder group at the third meeting. The reason for selection is that bag-based sanitation has been used in Protection of Civilians (PoC)[1] sites across South Sudan and it could be used again, particularly during flood response work that is required on an annual basis in some PoC

[1] PoC sites refer to situations where civilians seek protection and refuge at existing United Nations bases when fighting starts. http://www.odihpn.org/humanitarian-exchange-magazine/issue-62/protection-of-civilians-sites-a-new-type-of-displacement-settlement

sites. From the field visit to Kakuma refugee camp it was identified that the use of bag-based sanitation was a pre-requisite for a testing location. It is also relatively easy to access from Nairobi, although exact funding requirements for testing need to be assessed before moving into Phase 3. It is important to acknowledge that at this stage testing is only about the technical running of the product and the logistical aspects of set-up, the aim is not to test the social enterprise management model which is outside the scope of this project.

In terms of rationale for the intervention, although much work remains to be completed, the feedback from stakeholders is that this is a crucial gap within the WASH sector, therefore the project is very relevant and generated much interest. The discussions also demonstrated that there has been a clear gap in understanding between humanitarian actors and social enterprises of each other's business and how they might better work together in the future. Via the stakeholder meetings this has already improved somewhat, by increasing the opportunity for dialogue between the two groups. Via future meetings (in both Nairobi and London), online discussions and production of learning notes by GOAL on behalf of stakeholders information will continue to be shared between groups.

With initial design work completed, it is obvious that the volume of waste being considered is the primary constraint on the solution. With a module being designed to respond to the requirement of 5,000 people there will need to be a trade-off between the number of units deployed and the volume of these units, which effectively translates to a trade-off between the logistics required to operate and maintain the system, and the cost/complexity of the system. More details on this can be found in Appendix 2. This was probably not fully understood at the project inception stage.

The initial concept of the stakeholder group was to produce joint guidance notes, however, with membership to this group being voluntary and limited time available during meetings, the realistic approach going forward is for GOAL and Sanergy to develop guidance and later gather individual inputs from stakeholders.

METHODOLOGY

Was the methodology successful in producing credible evidence on the performance of the innovation?

What adjustments were made to the methodology during the course of the project? Why were these needed and how were they made?

To this point the methodology being followed is that proposed in the initial proposal document. The project is still not complete.

PARTNERSHIPS AND COLLABORATION

Describe the partnership arrangements and how these may have changed during the course of the project.

The project partnership between GOAL and Sanergy works under the following roles:

Comment [GR7]: Proposal states:

The project will be consistently and scientifically monitored to ensure it is tested in a quality manner. Prototypes will be developed and tested in Nairobi, using GOAL and Sanergy's current areas of intervention in the informal settlements as locations that are similar enough to the expected geographic targets (urban rapid on-set emergencies that require access to sanitation quickly, often using bags or buckets as a first option) to allow for reasonable evidence to its functionality.

Since we are now moving testing location to Juba, instead of Nairobi slums, I think that there IS a change. I am still unclear why Juba was deemed better than NBO slums.

Comment [NB8]: We are not moving to South Sudan instead of Nairobi. Phase 2 testing will be done in Nairobi. Phase 3 testing will be in a humanitarian context.

- **GOAL**:
  - Manages the overall grant and relations with HIF and the peer review group.
  - Convenes, minutes and reports on stakeholder meetings.
  - Communicates externally with stakeholders on action points agreed in meetings.
- **Sanergy**:
  - Leads the product development with inputs from stakeholder meeting and communicating with external stakeholders as agreed at meetings.
  - Completes field visits and advises on appropriate testing conditions.

Via the stakeholder engagement (meetings and direct communication with GOAL) the following organisations have been involved in the project so far:

- GOAL
- Sanergy
- Oxfam
- Norwegian Refugee Council
- International Federation of the Red Cross
- UNHCR
- UNICEF (remotely, have not attended a meeting)
- Sanivation
- PeePoo people
- LooWatt (remotely, have not attended a meeting)
- SOIL (remotely, have not attended a meeting)
- Pivotworks
- International Rescue Committee
- Davis & Shirtliff

The initial stakeholders were selected by GOAL and Sanergy, with input from HIF peer review group members.

The problem has been consistency in attendance of partners at the meetings, with only GOAL, Sanergy and UNHCR being consistently represented at all meetings. This was highlighted as an issue at the most recent meeting (March 2015), and it was agreed to continue the meetings, but also increase efforts to gather information from stakeholders between meetings.

DISSEMINATION

Indicate the steps taken to disseminate the outcomes of the project.

What dissemination activities have or will be conducted (whether or not included in the budget)?

What publications have resulted from the project, or are forthcoming (i.e. research and policy reports, journal articles, case studies, evaluations etc.)?

Has the project received any third party coverage during the project (from news media, third party blogs, researchers or academics etc.)?

Amongst stakeholders the documents from meetings and other relevant documents have been shared on a Dropbox folder that is being managed by GOAL.

During a workshop on decentralised faecal sludge management (FSM) infrastructure at the recent FSM3 conference in Hanoi, Vietnam this project was included as a case study of work on transfer stations. This workshop was attended and facilitated by both GOAL and Sanergy. Details can be found on the SuSanA website[2].

No publications have been written to date. Publications will be considered for future conferences, particularly the Water, Engineering and Development Centre (WEDC) Conference (2016) and FSM4 (2016).

TRANSFERABILITY

Please indicate if there is any potential to replicate the project and how.

What are the plans for scale-up beyond the pilot?

Are any other organisations planning to use or adapt the innovation?

What steps have been taken to ensure the transfer of the innovation and the learning from the project?

The product development itself is a one-off. However, the potential to repeat the methodology of using stakeholder groups in product design will be evaluated at project end.

The product will be available for use by humanitarian actors. The product will also likely be used by Sanergy in their operations in Nairobi and will also be available for use by other similar FSM social enterprises.

Learning is being captured by the stakeholder group in the form of meeting minutes and learning notes, however there is also a plan to post project documents on the Sustainable Sanitation Alliance (SuSanA) website, under their working group 8 on Emergency and Reconstruction Situations. This will expose the project to the global sanitation sector.

[2] http://www.susana.org/en/resources/conference-materials-2/2015/262-fsm3-ws-2