Humanitarian Supply-Chain Management:
Great Lakes and East Africa Inter-Agency Research Project

The East Africa and Great Lakes Region Inter-Agency Emergency Preparedness & Response Working Group

The University of Washington Interdisciplinary Program in Humanitarian Relief

The Fritz Institute

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I. INTRODUCTION

Recent developments in the humanitarian relief and development sector have put greater emphasis on issues such as security, logistic efficiencies, and information infrastructure that are best addressed through increased inter-agency cooperation. In the Great Lakes and East Africa region, a recently formed inter-agency working group involving sixteen major humanitarian organizations and four sub-working groups offers an exciting opportunity to explore and hopefully realize the potential benefits of this cooperation. The Great Lakes and East Africa Inter-Agency Supply Chain Management Project (hereafter referred to as the East Africa Inter-Agency Project) lays the foundation for and takes initial steps toward achieving these benefits.

This document is a guide and action plan for the East Africa Inter-Agency Research Project. It clarifies the project’s objectives and approach to enhancing the effectiveness of the region’s humanitarian supply chain, including a clear plan of action and specific research instruments. This online, evolving document also enables project partners to review current plans and provide input that can help refine project details and encourage partner buy-in and participation.

The primary foci of this project plan are:

1. A multi-disciplinary humanitarian supply-chain model, demonstrating the value of metrics, that will facilitate analysis of supply chain operations and support exploration of system improvements prior to expending the human, economic and political costs of actually implementing those changes

2. An assessment of information and supporting systems that will provide a greater understanding of the infrastructure that supports the supply chain, as well as of the complex environment within which the supply chain operates.

These two project foci are interrelated, since the supply chain and its environment are interdependent.

There are three phases to the East Africa Inter-Agency Project. Phase 1 (March – June) covers project definition, establishment of partnerships, and project planning. This handbook is the outcome of Phase 1. Phase 2 (July – September) covers field study in Kenya and Uganda. Phase 2 is described in detail below under sections V, VI and VII. Phase 3 (October – December) covers final analysis, deliverables and dissemination (see section II below).

II. DELIVERABLES AND DISSEMINATION

The primary deliverables of the East Africa Inter-Agency Project are:

1. A logistics model that incorporates supply chain, informational, and environmental factors, that can be used as a tool for optimizing material flow through the regional humanitarian supply chain;

2. An assessment of the nature, use and environment of information and information infrastructure as used by organizations engaged in regional humanitarian supply efforts;
3. Contributions to a structured body of knowledge on regional supply systems that incorporates different disciplinary perspectives and can serve as a foundation for future projects in this area;

4. Recommendations for future collaborative humanitarian supply-chain research in this area and for immediate measures that could be taken by the IAG to improve the management and effectiveness of their supply-chain functions.

The logistics model will consist of both a working software tool and accompanying descriptive text in the project report. This project report will also contain the results of the informational and environmental assessment, plus recommendations for future work. The model and report will be shared with all project partners.

In addition to receiving the software model and final report, all partners will also be invited to a workshop to be held in December at the University of Washington (UW) to share the results of this project plus three other concurrent, related projects. While the East Africa Inter-Agency Project is occurring, the UW will also be conducting projects in Ethiopia with USAID, DELIVER/John Snow Inc., and the Fritz Institute, as well as in Mozambique with VillageReach. The third concurrent project is a background thematic survey of information technology challenges facing humanitarian supply organizations. At the December workshop, the results of these four projects will be shared, integrated and discussed. (More information on the Ethiopia and Mozambique projects can be found at http://faculty.washington.edu/markh/IPHR.html.)

III. BACKGROUND AND OVERVIEW

International disasters have a huge impact on the world’s population, increasing the need for aid organizations to improve their logistics capability and capacity. In 1998, for example, there were 400 natural disasters reported in the International Federation of the Red Cross World Disasters Report (1999). These natural disasters affected more than 144 million people, resulting in 90,000 deaths and 5 million temporarily displaced persons. In 1998, the governmental donor community spent more than $3 billion responding to the immediate effects of natural disasters and man-made emergencies.¹

Throughout Africa and particularly in East Africa and the Great Lakes Region, the frequency and magnitude of emergencies has increased. The East Africa and Great Lakes Region may be the most inflicted region in the world in terms of wars, diseases, and natural disasters, especially floods. There are over 8 million displaced persons in the region and epidemics account for over 90% of deaths.² In response to this great need, a foundation for inter-agency cooperation has been established through the formation of the East Africa and Great Lakes Region Inter-Agency Emergency Preparedness & Response Working Group (see section III below). The timing is right for increased efforts to understand and improve the regional capacity for delivering humanitarian relief.

In the corporate sector, well-founded research exists in the area of commercial supply chain and logistic analysis, and strategic inter-corporation collaboration has demonstrated significant improvement in effectiveness and efficiency. However, the applicability of these commercial supply chain methods and other corporate logistics and related research to humanitarian operations is not fully understood.

This project attempts to improve humanitarian supply operations by exploring and better understanding the potential benefits of adopting improved supply-chain management systems, supporting information systems, and inter-agency collaboration. We will accomplish this goal by applying commercial modelling methods to the work of agencies that participate in the Cross-Border Logistics/Supply Chain Sub-Group chaired by George Fenton of World Vision, which is part of a broader group on emergency preparedness and response. In support of the modelling effort, we will administer a survey which will provide insight into the larger scope of interagency collaboration (see section VIII below). Key areas of focus will include information use and infrastructure, organizational issues, standardization, types of supplies, transportation, warehousing, regulations, and outsourcing. We will explore the hypothesis that the use of metrics and inter-agency coordination is as potentially beneficial for humanitarian organizations as it is for the supply chain operations of the commercial world.

IV. PARTNERS

The East Africa Inter-Agency Project is a project of the East Africa and Great Lakes Region Inter-Agency Emergency Preparedness & Response Working Group, performed by the University of Washington’s Interdisciplinary Program in Humanitarian Supply with facilitation by the Fritz Institute.

1. The East Africa and Great Lakes Region Inter-Agency Emergency Preparedness & Response Working Group (The Inter-Agency Working Group)

The Inter-Agency Working Group was established following discussion during the Office for the Coordination of Humanitarian Affairs (OCHA) Regional Contingency Planning exercise in June 2002 and regional (consolidated appeals process) CAP process for 2003. Chairied jointly by World Vision International (WVI) and the International Federation of the Red Cross (IFRC), participation in the group has grown steadily. The group’s members focus not only on the Great Lakes, but also the East and Horn of Africa, reflecting the expanded coverage of many of the regional structures.

The Inter-Agency Working Group is very much in line with the CAP Regional Strategy 2003, which emphasizes inter-agency information exchange and coordination as a means to respond in a more cost and time-efficient manner and better support country counterparts. The main objectives of the group have been to develop technical information sharing, recognizing the added value of personal contact in the groups, the increased understanding of partner organizations, and the benefit of sharing knowledge and experience on the use of field equipment and supplies. The group also helps foster better coordination between organizations, acknowledging that there should be better

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Participants include: WVI, IFRC, CRS, Merlin, SCF-UK, CARE, FAO, IOM, Oxfam GB, VSFB, MSF-H, RedR, IRC, UNICEF (including OLS), UNHCR, OCHA

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collaboration during emergencies in order to complement existing structures rather than 'reinventing the wheel'.

The following four Sub-Working Groups have also been established in order to allow a more in-depth discussion and practical development.

**1.1 Logistics/Supply Chain Management**
The objectives and proposed outputs include sharing logistics/supply-chain resources, such as the use of charter flights, stocks, human resources and expertise, as well as to explore joint agreements for procurement (including vetting and establishing a database of regional suppliers, and developing framework agreements - although it is recognized that joint framework agreements may not be appropriate for all organizations given differing legal status); to reach agreement on common specifications for emergency equipment and common supply items; to develop cross-border contacts that might facilitate the deployment of stocks and staff in an emergency and to enhance the compatibility of logistics systems, and to pool information on other cross-border issues such as customs procedures, freight-forwarding and transport options.

**1.2 Joint Training**
The objectives and proposed outputs include developing a collaborative and coordinated approach to training. This includes the sharing of information on forthcoming training events in order to promote an efficient use of funds. A recent training needs assessment has been undertaken in relation to this. The Group will promote the effective use of training organizations, and has been working with RedR (an organization specializing in the training of aid workers) on several initiatives, including training on Sphere Standards. It will also explore the potential for joint projects for scheduled training events - and related proposals to donors.

**1.3 IT and Telecommunications**
The key objectives of the group are to develop means to standardize equipment and utilization and to share information on experiences with commonly used equipment, licensing and frequencies, new products and potential suppliers. Currently, group members are testing new and recent messaging solutions. The Group has been looking at sharing satellite systems and pre-positioning V-Sat for emergencies, exploring both portable solutions for emergency deployment and alternatives for longer-term deployment. There has also been some exploration of how regional databases and websites might be used. VSF-B is, for example, currently testing a system for supplies/assets tracking initially written for United Nations Children’s Fund (UNICEF), while International Organization for Migration (IOM) and Merlin (organization specializing in medical emergency response) are developing software for following migrants and refugees. This group may soon merge with a similar group hosted by AMREF.

**1.4 Contingency Planning/Emergency Preparedness**
This group is in the early stages of development. It is intended that the group will help to determine the feasibility of using joint assessment and response teams, further develop initiatives and mechanisms for information sharing in emergency preparedness and response and look at early warning systems.

With the establishment of these Sub-Groups, the regional humanitarian community has been exploring areas that have potential for inter-agency collaboration. The first meetings have been fundamental in laying the groundwork, and some of the practical
and potential outputs are now becoming discernable and have to be realized. As the process moves forward, the members are eager to explore further innovative ways in which existing resources and the groups can be used, and to look at reaching out to other organizations to develop cooperative approaches. This project is an important step in this direction.

2. The Interdisciplinary Program in Humanitarian Relief and Development

The University of Washington has established an Interdisciplinary Program in Humanitarian Relief (IPHR). This program integrates educational (both for university students and for humanitarian professionals on the job) and research components, including the support of graduate student international interns to conduct field study of humanitarian relief operations throughout the world. The IPHR was proposed jointly by the College of Engineering and the Daniel Evans School of Public Affairs (which houses the Marc Lindenberg Center for Humanitarian Action, International Development and Global Citizenship), but it also draws on considerable relevant strength across the university from units such as the Medical School and the School of Public Health and Community Medicine (AIDS medicines distribution programs and refugee medicine programs), Civil Engineering (water, sanitation and transportation), and the Global Trade, Transportation and Logistics Program.

The primary goals of IPHR are to (1) combine the very different perspectives of public management and engineering to teach about and do research on the challenges faced by international relief organizations; and (2) establish an international reputation as a resource for applied knowledge at the intersection of logistics, information technology and organizational management in humanitarian relief operations.

This summer as part of research projects led by experienced faculty and in partnership with local supply agencies, teams of IPHR graduate students will be conducting field research in Kenya, Ethiopia and Mozambique. In addition to their other training, each of these research interns has just completed a new IPHR course in “Humanitarian Logistics, Electronic Information and Supporting Systems.” Next year, two additional new IPHR courses will come on line, “Managing Supply and Development” and “Humanitarian Logistics.” In addition, IPHR will be working with advisors from humanitarian relief organizations (HROs) to design and deliver continuing education courses to humanitarian relief professionals.

3. Fritz Institute

Fritz Institute strengthens the infrastructures of HROs by mobilizing logistics and technology expertise and resources from the corporate and academic communities. Fritz Institute achieves its mission by developing solutions and convening stakeholders.

The Fritz Institute philosophy of collaboration and sharing knowledge is supported by a systematic process. This process starts with research to identify common challenges across HROs. Next, academics, corporate experts and professionals from humanitarian organizations are convened to develop solutions and record learnings. These solutions are then implemented organization-by-organization using resources from the private sector. The impacts are tracked so that both the solutions and the knowledge gained from the process are disseminated to other humanitarian organizations that might
benefit. Over time this process yields a network of knowledge that contributes to the institutional memory of the humanitarian relief community.

V. PROJECT PHASES

The East Africa Inter-Agency Project is progressing in three distinct phases: (1) a planning, analysis, partnering, preparation phase; (2) a data gathering/field study phase; and (3) an analysis, reporting, sharing, looking forward phase.

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<td>Analyze data, complete model, draft report, share key findings.</td>
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<tr>
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<td>Deliverable: Compilation of data, enhanced model</td>
<td>Deliverable: Final report (including model), workshop</td>
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<td>Final Written/oral report</td>
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Phase 1
This phase occurred in conjunction with an IPHR graduate seminar on humanitarian logistics, electronic information and supporting systems. After five weeks of background study, the students were divided into three teams to further develop the research projects in Kenya, Ethiopia, and Mozambique. The teams of five included a two-person intern team who were selected for the 2nd (field study) phase of the project, a team leader (not on the intern team) and other graduate students with interest and expertise relevant to the project. The course website can be viewed at http://faculty.washington.edu/markh/TC498/TC498.html. Phase 1 concluded on June 11, with each team presenting their deliverable--a "handbook" for the project that includes information such as background on the problems to be addressed, organizations involved, and current situation; definitions of the project purposes and deliverables; methodological and logistical details. This document is the evolving version of that handbook and will be shared with current and potential project participants to elicit comment and facilitate buy in.

Phase 2
The second phase occurs during the summer of 2004 and centers on the field study conducted by the research interns in Kenya. The field study component of the project will be approximately 10 weeks, during July through September. The primary focus of

4 The Kenya Team consisted of Sharon Walker (team leader), Cara Johnson, Steve Kotleba, Christina Maiers, and Chris Wilson.
this phase is to gather both the quantitative and qualitative data necessary to accurately reflect HROs supply chain logistics. The information gathered will be used to populate the supply chain logistics model currently being developed, and investigate potentially beneficial opportunities for HRO collaboration.

Two University of Washington interns have been selected to form an interdisciplinary team to conduct the data gathering process. Christina Maiers is a graduate student in the Evans School of Public Affairs and Steve Kotleba is a graduate student in the College of Engineering’s Industrial Engineering department.

The data collection process will occur in three stages. These stages coincide with the time each intern is in Kenya. Each intern is scheduled for a six-week internship program, however the time of each internship will be staggered. A two-week overlap is scheduled during the fifth and sixth week of the internship schedule. Maiers will begin the first stage of the internship schedule in early July. During this phase several components will be addressed, including:

- Contact HRO representatives
- Develop open lines of communication with Working Group representatives
- Begin data collection: focus on qualitative aspects

The second stage of the internship schedule is a two-week period of overlap occurring in early August. During this phase of the internship the following points will be addressed:

- Bring Kotleba up to speed
- Share information
- Introduce Kotleba to Working Group representatives
- Finalize a plan of action for the remainder of the internship

The third stage of the internship schedule will focus on the more quantitative aspects of the logistics HRO supply chain. The objectives of the third phase include:

- Use the qualitative information from phase 1 complete the remaining gaps of the supply chain model
- Begin method of quantifying the qualitative aspects of phase 1
- Verify that results are accurate

The field study phase will conclude in September; however the study does not end when the interns return home. Upon the completion of the internships a debriefing or information sharing session will take place among the interns and the IPHR team. This session will develop a better, more complete understanding of the environment in which HROs operate and identify opportunities for potential collaboration among various Working Group members.

The figure below graphically represents the various stages of the field study phase schedule.
Phase 3
The third phase of the project will occur after the interns return from their field study. The IPHR team\(^5\) will take the lead in compiling results and making them available to all project partners so that they can contribute to analysis and compilation of findings and drafting of results. This phase will culminate with a final project report and a December workshop where we share and integrate the results from the three African projects (Kenya, Ethiopia and Mozambique) and one background study of HRO information use and technology. At this workshop, we will discuss what we have learned, and, if appropriate, think about what might be done next to build on these efforts (the IPHR has funding for interns in the summer of 2005).

VI. METHODOLOGY

Developing a Multi-Disciplinary Model of the Humanitarian Supply Chain
Our methodology for developing a multi-disciplinary model of the humanitarian supply chain combines quantitative and qualitative approaches. By combining these approaches, the model will be able to integrate the qualitative landscape and environment in which HROs function with the quantitative aspects of the network in which they operate. The model will demonstrate the movement of materials from the source to demand, and expose areas of possible exploitation for improvement in supply and information flow. Examples of optimization include strategically innovative positioning and collaborative use of distribution centers or implementation of a regulated and integrated inventory control process. Our overall goal is a model that will provide greater understanding of new ways to optimize material and supporting information flow.

Quantitative and qualitative research will occur simultaneously and be integrated throughout the project. Section VII provides additional details of the logistics model and Figure 1 (below) provides a schematic overview of the methodology.

Environmental Factors
There are many factors and dynamics influencing the operations of a HRO. These can be either internal or external, with examples of external factors being funding requirements or operational time frames, while internal dynamics can be anything from organization specializations to the number of employees or volunteers. This project will classify environmental factors that impact the humanitarian supply chain and incorporate them into the logistical model.

To explore the landscape of the supply chain environment, we will employ a series of structured interviews, based on the pilot survey provided in section VIII. We will use the results of these structured interviews to create and define parameters that will be incorporated into the logistics system model.

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5 Prof. Mark Haselkorn, Department of Technical Communication; Prof. Benita Beamon, Industrial Engineering Department; Chris Coward, Director, Center for Internet Studies, Institute for International Policy; Elaine Chang, Assistant Dean, Evans School of Public Affairs.
Figure 1. Schematic Diagram of our Research Project.

Quantitative Logistics Model

Inputs:
- Attributes
- Variables
- Parameters
- Network Design

Combination of Qualitative and Quantitative Research Efforts

Qualitative Environmental Layout

Inputs:
- External Factors of HRO
- Internal Factors of HRO
- Crisis Needs
- HRO Objectives

Output: A documented Supply Chain model populated with information and material flow across the East-Africa Inter-Agency Working Group.
VII. THE LOGISTICS MODEL

The logistics model itself will serve as a proxy for the real system. It will take variables and environmental parameters as inputs to obtain a specific output objective. Output objectives may include maximizing the flow of materials through the system or minimizing the cost or time of delivering supplies. If we classify groups of HROs that deliver similar services or products as a ‘family,’ it may be beneficial to formulate a model that maps the supply chain for each ‘family.’ We could then observe possible overlaps or opportunities for optimization within the entire supply chain of these ‘families.’ This goal may be too ambitious given our team’s current time frame, but the work described here will also serve as a foundation for future endeavours. Our preliminary effort will focus on the modelling of a single ‘family’ with the possibility of later extensions.

The initial step to form the logistics model will be to define the problem and select performance measures. Many performance measures exist for traditional commercial supply chains, but the distinct characteristics of the humanitarian supply chain may cause many of these to be inapplicable (e.g. customer preference). Our research will unveil differences and adapt commonalities between the two. Model development itself will look for identification of the supply chain structure. This will be accomplished through the use of the data collected from the Inter-Agency Working Group members. The network structure can then be used to develop a distributed network configuration and model parameter values as obtained through our environment and landscape analysis. Ultimately we will be prepared to deal directly with issues of optimization of information and material flow. Our model will also provide the framework for further analysis into inventory control and feedback from the selected system performance metrics.

The uniqueness of the model arises from the fact that it incorporates the environment in which HROs function, which is a multi-disciplinary study, along with the logistic framework, which is primarily an Industrial Engineering or single discipline concern. Demands of the organizations, such as end products and services, can also be multi-dimensional or cover multiple sectors. Our end product will be capable of assessing variable levels of enabling technology, improving the reliability and completeness of the information used in the supply chain and ultimately improving the effectiveness and efficiency of humanitarian supply operations.

Systematic Methodology to Supply Chain Analysis

The opportunity to study supply chain management (SCM) within humanitarian organizations is unique and rewarding, but requires sufficient planning to be thorough and successful. Careful tactics must be considered when devising an approach with the intent of enhancing organization supply chain performance. A number of generic methodologies exist to ensure a consistent process is undertaken from problem formulation through the implementation and operation of a solution. A concise summary of these can be described as UDSO.\(^6\)

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• **Understand** – define the problem, realize system boundaries and identify performance metrics.

• **Document** – modelling existing operations, whether in written, verbal, diagrammatical, mathematical, software or combined format, is a vital prerequisite before any solution is implemented to allow cost-benefit analysis. Such models define current practices and highlight opportunities for solutions. Models also set the benchmark by which solutions may be judged.

• **Simplify** - utilizing the metrics and models developed above, all opportunities to eliminate waste in the form of wasted time, wasted resources, wasted information, and wasted capacity may be realized.

• **Optimize** – only after the process has been thoroughly identified and streamlined should optimal control methods be applied to ensure their consistency, reliability and transparency.

The field research team will be heavily involved in the Understand and Document phase of the UDSO process. The uniqueness of our approach in exploring SCM is the combination of traditional quantitative supply chain model characteristics with broader environmental qualitative factors. Analyzing the complexities and intricacies of any supply chain is aided by the development of a simulation model, which will be the methodology used by our team. Simulation is commonly utilized in the commercial sector as it is a time proven means of effectively demonstrating process and management efficiencies prior to the high cost of actually implementing them.

**Understanding the Process**

To create a verifiable simulation model of any procedure requires a thorough understanding of the operation. Without a well-founded understanding of the situation, it is not possible to validate the model, which is critical in fully accepting and trusting the outputs.

The most challenging part of our approach is to understand the qualitative aspects that will affect the model. Qualitative questions can be viewed as inquiries that are not answerable with numeric responses, but dramatically affect the way a supply chain functions. These questions are historically very difficult to model, as each response needs quantification to be integrated into a simulation model. Since our objective is to be as thorough as possible including the impact of these qualitative decisions, the understanding of the qualitative environment is a fundamental step in building the simulation model.

The critical step of exploring and understanding relevant qualitative factors will occur when Maiers spends the first six weeks on site. By interviewing and working side by side with experienced individuals within each organization, the important environmental factors will be better understood. Since qualitative data gathering benefits most from person to person contact, it will not be possible to incorporate qualitative factors into the model until field work in Africa has begun.

Understanding the quantitative factors in the supply chain of humanitarian organizations has already begun with interviews conducted under the concurrent background study of HRO information use and technology. The team will build on this solid beginning to understanding the quantitative requirements of the supply chain model.
**Documenting the Process**

Documenting the process cannot begin until the role of qualitative factors in the supply chain is better understood. Estimates of the affect of qualitative factors can be developed beforehand, but will lack realistic value until validation occurs in the field. Information gathered by Maiers will be used not only to help populate the model, but to help shape its formation.

The quantitative documentation is progressing rapidly. The team’s understanding of the current operations has led to the development of a rudimentary supply chain model. Information gathered through preliminary interviews has been used to map the movement of supplies from pre-positioned warehouses to a disaster location. Depending on the currently unknown environmental qualitative conditions, the logic of the model is subject to change.

A list of inputs have been created for the simulation model, and during Kotleba’s field work, he will be seeking both additional inputs and quantitative measures of those inputs.

**VIII. INTER-AGENCY GROUP MEMBERS SURVEY**

As discussed above, the central data gathering instrument is based on a broad survey, which will be used to guide interview sessions with appropriate organizational representatives of the Inter-Agency Logistics/Supply-Chain Sub Group. Research data will be gathered under the following headings:

- Organization
- Collaboration
- Information and Communication Systems
- Donors
- Procurement
- Industry and Federal Regulations
- Warehousing
- Direct Shipment
- Transportation
IX. APPENDICES

Appendix A. Stakeholders and Participants

Stakeholders:
- Fritz Institute
- World Vision International, Africa Relief Office
- University of Washington East Africa HRO Supply-Chain Management Team
- Inter-Agency Emergency Preparedness Working Group (East and Central Africa)
  - World Vision International (WVI)
  - International Federation of the Red Cross and Red Crescent Societies (IFRC)
  - Catholic Supply Services (CRS)
  - Merlin
  - Save the Children Fund-United Kingdom (SCF-UK)
  - Oxfam Great Britain

LIST OF FOCUS AGENCIES PARTICIPATING IN PROJECT

| CRS Emergency Response Team | Dane Fredenburg dfredenburg@crsert.org  
|                            | Kari Egge kegge@crsert.org  
|                            | Graham Eastmond geastmond@crsert.org  
| IFRC EA Regional Office    | John Mwangi – ifrcke40@ifrc.org  
| (To confirm full participation) | Steve Penny ifrcke78@ifrc.org  
| IRC Regional              | Dickson Musyimi 0733 344443 musyimi@irckenya.org  
|                            | Patty Swahn pattys@theirc.org  
|                            | Meghan O’Connor meghano@theirc.org  
| Merlin                    | Marc Blumet Logco.nbo@merlin.org.uk  
|                            | Gabrielle Appleford gabrielle@merlin.org.uk  
| Oxfam GB Regional         | Benoit Delsarte bdelsarte@oxfam.org.uk  
|                            | Phoebe Kung’u pkungu@oxfam.org.uk  
| SC-UK S. Sudan            | Eric Njiiri e.murigu@scfuk.or.ke  
|                            | Wendy Fenton w.fenton@scfuk.or.ke  
| UNHCR Regional Office     | Eskalem Bogale bogale@unhcr.ch  
| (To confirm full participation) | Vincent Chordi chordi@unhcr.ch  
| WVI Regional and S. Sudan | George Fenton – george_fenton@wvi.org  
|                            | Ayalew Teshome (WV S. Sudan) Ayalew_teshome@wvi.org  
|                            | Jane Muyundo Jane_muyundo@wvi.org  

Appendix B. PARTICIPATING AGENCIES

World Vision International (WVI)
World Vision International is a Christian relief and development organization with a presence on six continents. World Vision is one of the largest Christian relief and

7 All organization descriptions were compiled from information available on their web sites.
development organizations in the world, and functions as a partnership of interdependent national offices, overseen by their own boards or advisory councils. A mission statement and core values are shared by all national offices, agreeing to abide by common policies and standards. The Partnership Offices located in Geneva, Bangkok, Nairobi, Vienna, Los Angeles, and San Jose, Costa Rica, co-ordinate the strategic operations of the organization and represent World Vision in the international arena.

**International Federation of the Red Cross and Red Crescent Societies (IFRC)**
The International Federation of Red Cross and Red Crescent Societies is the world's largest humanitarian organization, focusing on four core areas: promoting humanitarian values, disaster response, disaster preparedness, and health and community care. The IFRC currently runs support programs in more than 150 countries.

**Catholic Relief Services (CRS)**
Catholic Relief Services works in over 90 countries and territories working directly with affected communities and local partners to help restore and strengthen pre-disaster capacities. CRS responds to both natural disasters and, complex emergencies such as intra-state conflict. CRS was founded in 1943 to assist war-affected populations in Europe. Through the years, CRS has spent an average of 30 percent of its overall budget on emergency programs and has been present during some of the largest emergencies of the last decade.

**Merlin**
A humanitarian organization focusing on health care during crises, Merlin provides medical relief in the first phase of international emergencies when the local infrastructure has broken down. Merlin’s field team is staffed by volunteers with expertise in medicine or logistics, and tries to work within existing local health structures.

**Save the Children Fund-United Kingdom (SCF-UK)**
SCF-UK is part of an international save the children alliance with presence in over 100 countries. SCF-UK, in emergency response, works specifically to prevent food shortages and protect children and refugees, prioritizing long-term recovery and development.

**Oxfam**
Oxfam is an independent British development and relief organization, registered as a charity, affiliated to Oxfam International, with partners, volunteers, supporters, and staff of many nationalities. Oxfam partners worldwide with other organizations as well.

**Office of the United Nations High commissioner for Refugees (UNHCR)**
The Office of the United Nations High Commissioner for Refugees was established on December 14, 1950 by the United Nations General Assembly. The agency is mandated to lead and co-ordinate international action to protect refugees and resolve refugee problems worldwide. Its primary purpose is to safeguard the rights and well-being of refugees. It strives to ensure that everyone can exercise the right to seek asylum and find safe refuge in another State, with the option to return home voluntarily, integrate locally or to resettle in a third country. In more than five decades, the agency has helped an estimated 50 million people restart their lives. Today, a staff of around 5,000 people in more than 120 countries continues to help over 20 million persons.
Appendix C. CONTACT LIST AND RESOURCES


International Federation of the Red Cross and Red Crescent Societies (IFRC). www.ifrc.org

International Committee of the Red Cross (ICRC). www.icrc.org

Catholic Relief Services (CRS). www.catholicrelief.org

Merlin. www.merlin.org.uk

Save the Children Fund-United Kingdom (SCF-UK). www.savethechildren.org.uk

CARE. www.care.org

Oxfam Great Britain. www.oxfam.org
