SUPPORTING STATEMENT PART B

For

Measuring the Psycho-Social Impact on Communities Affected by Landmines and
Unexploded Ordnance

Jennifer Leaning, M.D., S.M.H.
Professor of the Practice of International Health, Harvard School of Public Health
Co-Director, Harvard Humanitarian Initiative

Gregg Greenough, M.D., M.P.H.
Attending Physician, Brigham and Women's Hospital, Harvard Medical School
Research Director, Harvard Humanitarian Initiative

Hani Mowafi, MD, MPH
Affiliate Faculty, Harvard Humanitarian Initiative

Mark Anderson, M.D., M.P.H.
International Emergency and Refugee Health Branch
National Center for Environmental Health
Centers for Disease Control and Prevention
Email: mea6@cdc.gov
Phone: 770-488-0689
Fax: 770-488-3266

HARVARD HUMANITARIAN INITIATIVE

14 Story Street, 2nd floor
Cambridge, MA 02138

Revised submission November 21, 2008

Table of Contents

B. Collections of Information Employing Statistical Methods

B.1.   Respondent Universe and Sampling Methods

Areas in which the population has been relatively stable (no internally displaced or resettling groups over the last two years) will be considered for inclusion. Communities in the three South Lebanon governorates affected by cluster munitions during the Israeli-Hezbollah War (July-August, 2006) meet inclusion criteria and include South Lebanon, Nabateyeh, and Bakaa with a combined population of 1,094,200. Communities in the rest of Lebanon with a remote history of landmine exposure (during the Lebanese Civil War and Israeli occupation, 1975-2000) will be considered for inclusion in the control group.

Quantitative study: a stratified two-stage cluster design will be used. Stage one will be cluster selection, and stage two will be household surveys within each cluster. Stages are explained further in B2, page 3. We chose a cluster design for both analytic and practical reasons: analytically, we are interested in characterizing communities; and practically, no individual household lists are available for simple random sampling (the last complete census of Lebanon was done in 1932). Based on a feasibility study conducted in July 2008, we found that the densities of exposure to cluster munitions in Southern Lebanon varied from none to high density without regard to rural or urban areas. The entire three governorate area is highly dependent on agriculture and remittances from abroad regardless of urban or rural locale and not sufficiently different to warrant stratification either on locale or economies. Thirty clusters of 20 households will be randomly selected based on lists of villages with known levels of cluster munitions exposure; thirty clusters of 20 households will be similarly selected from village lists with remote exposure to landmines.

Sampling for each study site:

Stages	Cluster munitions	Remote landmine (Control)	Total
Stage 1 – Cluster selection	30 clusters	30 clusters	60
Stage 2 – Household surveys within each cluster	600 (30 clusters x 20 households)	600 (30 clusters x 20 households)	1200

Qualitative study: Focus groups with 8 members each will convene in each group. Four types of groups were chosen based on shared characteristics in experiences to exposure of ERW and their likely effects on livelihoods: community/civic leaders, mothers of small children, farmers, herders.

	Cluster munitions Comm/Mothers/Farmers/ Herders	Remote landmine (Control) Comm/Mothers/Farmers/ Herders	Total
# of Focus groups	4	4	8
# of Participants	8	8	8

per focus group			
Total	**32**	**32**	**64**

Statistical methods will be used to select respondents (see B2 below). We anticipate a high response rate (over 95%) based on previous household-based surveys done in Lebanon. This is likely given that respondents will be briefed on the broader value of the study for populations affected by ERW and will be keen to "tell their story".

B.2.   Procedures for the Collection of Information

a) Quantitative

In calculating the sample size for the household survey, we will assume a confidence interval of 1.96, type I error of 5%, and an estimated design effect of 2.0. Meaningful outcome measures of human security/insecurity are likely to occur frequently in this population so we do not require a large population size for this reason. Where able, we will calculate the degree of intra-cluster correlation. Grouping clusters by acute higher risk cluster munitions exposure and lower risk remote landmine exposure will allow us greater precision. We reason that larger numbers of clusters would be more beneficial than larger numbers of households per cluster given the higher degree of intra-cluster correlation we anticipate on outcome measures of human security. Thus, we aim for 30 households in each group (60 total) with 20 households per cluster resulting in 1200 households. (This figure is similar to calculating a simple random sample size for each group with the same power, confidence intervals, and error—roughly 300—and multiplying by a design effect of 2).

In the first stage, clusters in the cluster munitions exposed group will be randomly selected from communities enumerated in the Mine Action Group—South Lebanon (MAC-SL) database; clusters in the remote landmine exposed group will be randomly selected from communities enumerated in the Landmine Impact Survey (LIS) for Lebanon (completed in 2003) and verified by current existing census designations where available. Both MAC-SL and LIS have community population estimates. If there is significant variation in cluster sizes, selection will be made by a probability proportional to size method.

All communities in the three governorates of Southern Lebanon will be considered for inclusion in the cluster munitions exposed group; communities in the rest of Lebanon with the exception of the Beirut governorate (dense, urban metropolitan area with no significant ERW exposure) will be considered for inclusion in the remote landmine exposed group. No communities will be included that have recently repatriated or resettled populations within the last four years as these populations would have had differing experiences and more importantly would not have either the potential for ERW exposure or human security factors potentially associated with ERW. Historically, the population of Lebanon and the disaggregate populations of its governorates have remained numerically stable since the onset of the civil war in 1975.

In the second stage, 20 households will be chosen in each cluster using random systematic methods to minimize bias. It is anticipated that some clusters will have lists of households mapped to location within the cluster; clusters without lists will require consultation with the community *mukhtar* (lead civil authority) and with academic partners in Lebanon (American University of Beirut and Balamand University) and maps generated for these clusters. From these available lists we will randomly select 20 households in each cluster. Households will be defined as those individuals living in a single housing unit and sharing cooking facilities.

Information will be collected on demographic characteristics of the household, including age, gender, employment status, land ownership, livelihood and income-generating activities, and time spent in the community for each household member. Detailed information about the presence of ERW in and around the community, workplace, and home, as well as the degree of access to essential services (health facilities, schools) over time will be asked. Knowledge and awareness of de-mining activity (mine risk education, local de-mining efforts, recent death or injury) and identification of other personal risk will be quantified in order to determine exposure. Perceptions of human security, including sense of home, risk, sense of the future, belonging to the community and to the land will also be quantified. Data collectors will electronically enter responses as the respondent verbally responds to the data collector. Please see OMB Supporting Statement Part A, Section 3, page 6 for further information on the data collection process. There is no plan for continuing data collection or revisits for validation purposes.

The two senior field study coordinators will review each of their teams' data immediately following the household or focus group interview for completeness. Questionnaire forms will then be checked again by the other coordinator to identify discrepancies. Forms will be checked a third time at the point of data entry. The fourth level of QA will occur in Cambridge with regular reviews of the digital data. Any discrepancy identified at any level will be immediately addressed and may result in re-contacting the respondent and reviewing that data collection team's other questionnaires.

The investigators will insure the privacy of all respondents in both the quantitative and qualitative study. The household survey will be given only to those who verbally consent. The respondents will be told that no personal identifying questions will be asked or recorded.

The analysis will include descriptive statistics of the two groups (frequencies, proportions, and univariate analyses) as well as dose-response relationships of ERW exposure (which are the changes in effect on a household caused by different levels as a result of exposure to ERW and whether or not there is an observable effect) with outcome measures of human security and livelihoods and comparisons between the two groups. A multiple logistic regression analysis to examine the potential benefits of de-mining operations will be done. Comparisons across dose-response relationships for both groups can be analyzed.

b) Qualitative

The focus group participants will be recruited through the village and/or neighborhood leadership based on the criteria mentioned above. Lists of individuals with alternates will be identified through this network. The groups will be led by professional experienced qualitative (social science) researchers, fluent in Arabic and native to Lebanon. The group leader will facilitate discussion around a set of open-ended questions relevant to the outcome parameters. Responses will be coded for phrases and key words relating to outcome parameters on livelihoods, perceptions of risk and human security indicators as described above. Data will be coded from notes and transcripts and entered into a database. Observer notes will be checked in an on-line fashion against the transcript by the two field coordinators and the project manager in Cambridge prior to final data entry and analysis.

Data collectors in both the qualitative and quantitative studies will undergo specific training on the ethical responsibilities of data collection and handling provided by the Harvard School of Public Health Human Subjects Committee prior to deployment. At all times, completed hard and digital data copies will be kept locked with only the study coordinator and project manager having access. The data will be entered into a secure electronic database with password only access.

B.3. **Methods to Maximize Response Rates and Deal with Nonresponse**

Survey teams will contact the leadership of communities prior to arrival to ensure access and increase the likelihood of reaching respondents and thus, minimize non-response. In cases of non-response due to no eligible respondents at home, teams will return later in the day (i.e. when heads of households will arrive back from their fields or places of work). In the case of non-response, we will revisit the home three times before replacing it with another randomly generated home within the cluster. We do not anticipate more than a 5% non-response rate, especially since we will be alerting community leaders beforehand as to the nature and importance of the quantitative and qualitative studies. This rate is based on similar household studies in Lebanon which range from 0.5% to 8%.The sample size represents adequate inflation to cover a 5% non-response rate. For the focus group discussions, at least two alternate participants will be identified for each group prior to the discussion in case of non-response.

B.4. **Tests of Procedures or Methods to Be Undertaken**

We will pilot test our household questionnaire to less than 10 respondents to determine clarity of questions, clarity of translation, and time required per household only. We do not intend to make any major changes in the survey instrument.

B.5. **Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data**

Consultant for overall study design and analysis is Mark Anderson, MD, MPH (CDC); for consultation on sampling and statistical analysis for the quantitative study is Curtis Blanton, MS (CDC); for assistance on developing the qualitative focus group instrument and the analysis of qualitative data, Holly Williams, PhD (CDC); Alan Zaslovsky, PhD (Harvard Medical School) has offered to assist on the design and analysis for outcome variables in cluster sampling. The CDC will provide at least one Epidemic Intelligence Service officer (to be named) to assist in coordinating the field study. No contractors will be used in the study. One local mental health professional with experience in focus group discussions and coding qualitative data will be hired. This professional has not yet been hired.