

SUPPORTING STATEMENT PART A

For

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

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SUPPORTING STATEMENT

A. JUSTIFICATION

1. Circumstances Making the Collection of Information Necessary

Background

This is a new information classification request.

Explosive remnants of war (ERW) have for centuries threatened civilian populations with injury and death. The 20th century has seen widespread dispersal of these mines and munitions in the wake of conventional wars.¹ In the last 30 years, the high proportion of internal, intra-state wars, waged by informal militias and rebel groups, has led to an increasing reliance on landmines as an inexpensive and easily transportable means of displacing populations and defending territory.² The consequences of these trends over the last 100 years are that an estimated 100 million landmines and an unknown amount of unexploded ordnance now lie buried in the land and harbors of over 70 countries throughout the world.³

The human costs of ERW are not well understood. Good empirical work has been done to document the medical and rehabilitative needs of individual landmine survivors.⁴ A few studies have attempted to evaluate the impact of landmine injury and death on families and communities.⁵ Many studies that look at these issues have a number of methodological limitations, however, including short or non-specified recall time, small sample size, non-random means of identifying study participants, absence of controls, and no conceptual framework for assessing family and community psychosocial and economic well-being.

Gaining better understanding of the impact of landmines and other ERW on the short and longer term prospects for post-conflict reconstruction would aid the policy community and the demining, relief, and development field agencies in setting priorities for program and strategy in

¹ Westing AH. Environmental hazards of war: Releasing dangerous forces in an industrialized world. London, Sage Publications, 1990.

² Kaldor M. Introduction. In Kaldor M, Bashee B, eds. New wars. London, Pinter, 1997.

³ Giannou. C. Antipersonnel landmines: facts, fictions, and priorities. BMJ 1997;315:1453-4.

⁴ Coupland R. Assistance for victims of antipersonnel mines: needs, constraints and strategy. Geneva, ICRC, 1997.

Bilukha OO, Brennan M, Woodruff BA. Death and injury from landmines and unexploded ordnance in Afghanistan. JAMA 2003;290:650-3.

Stover E, Keller AS, Cobey J, Sopheap S. The medical and social consequences of landmines in Cambodia. JAMA 2994;272:331-6.

⁵ Lopes Cardozo B, Bilukha OO, Gotway CA, et al. Mental health of women in postwar Afghanistan. J O Women's Health 2005;14:285-293.

Andersson N, Palha da Sousa C, Paredes S. Social cost of land mines in four countries: Afghanistan, Bosnia, Cambodia, and Mozambique. BMJ 1995;311:718-721.

these complex settings. The many impediments to population return and re-engagement after a negotiated ceasefire include environmental devastation, widespread destruction of infrastructure, and depletion and fragmentation of community networks and essential records, and disputes and uncertainty over land claims and land tenure. It has been widely asserted that the presence of ERW contributes to these impediments by exerting a threat of possible explosion that constrains land use, travel, and transport and by maintaining a sense of tension and wariness in community dynamics. Yet the empirical grounds for these generalizations are lacking. The contributory role of ERW in retarding the economic and social trajectory of families and communities during the post-conflict period has not been clearly delineated.

This study, as proposed, would undertake in a randomized population-based survey to assess the impact of ERW on munitions-affected populations. Lebanon has been selected on the basis of the presence of extensive cluster munitions and de-mining activities since 2006. The survey and focus groups will use the human security framework to investigate the psychosocial and economic wellbeing of individuals, families, and communities. The human security framework employed in this study is based on the fundamental concept that human security exists only when human beings find that core psycho-social attachments to home, community, and a sense of the future can be preserved or recreated. A minimum set of inputs relating to food, water, shelter, and protection from violence are also needed, but the realm of psycho-social stability and resilience must be addressed and supported for people to feel really secure. This concept of human security derives from policy deliberations on the topic over the last twenty years as well as from a broad range of psychological, sociological, and political assessments of societies undergoing rapid change and transition.⁶

A specific focus on de-mining activities in Lebanon will introduce the independent variable in assessing return to land, income generation, and promotion of human security. (See section 18B for details on study design and methods).

The following authorizing legislation permits this data collection:

- 1) **Section 301 of the Public Health Service Act (42 USC 241)** (Appendix 1a) authorizes CDC or its grantee to conduct research relating to the prevention and control of disease.
- 2) **Section 391 of the Public Health Service Act (42 USC 280b)** (Appendix 1b) authorizes CDC or its grantee to conduct research relating to the causes and prevention of injuries and assist in activities for the prevention of injuries. This survey is intended to define the impact of ERW presence on civilian populations in post-conflict settings.

⁶ See UN Human Development Report 1994, UN Human Security Report 2003, and Leaning J, Arie S. Human Security: A Framework for Assessment in Conflict and Transition. Working Paper Series Vol 11, No. 18, Harvard Center for Population and Development Studies. Cambridge MA, September 2001. A shorter version of this working paper can be found in Leaning J, Arie S, Stites E. Human Security in Conflict and Transition. Praxis: The Fletcher Journal of Human Security vol XIX, 2004.

These data will help to identify populations and locations where the greatest benefit will obtain from de-mining interventions.

Privacy Impact Assessment

Overview of the Data Collection System

Quantitative information will be collected from 1200 households and qualitative information will come from focus groups with 64 individuals. Detailed descriptions of the data collection system and statistical methodology can be found in Part B.

Quantitative study: a stratified two-stage cluster design will be used. 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.

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.

Items of Information to be Collected

During the quantitative study, heads of household will be asked to provide information on how their household has been affected by ERW in terms of loss of life, injury, change in income, land use, and other impacts such as feelings of security and perceptions of home and the future.

During the qualitative study, focus group members will be asked to discuss and provide comments on perceptions of risk to specific community groups (agriculturalists, mothers with small children, community and business leaders, and herders) from ERW, behaviors based on these perceptions, and an assessment of security.

See survey instruments in Appendix 3 for specific list of items of information to be collected.

No Information in Identifiable Form is being collected.

Identification of Websites and Website content Directed at Children Under 13 Years of Age

This information collection does not involve web-based data collection methods and does not refer respondents to websites.

2. Purpose and Use of the Information Collection

The results of this study will document and quantify the extent to which living with ERW in the post-conflict setting has introduced psychosocial and economic barriers at the level of family and community well-being, and the extent to which de-mining efforts, over the same time frame, have mitigated these impacts. These anticipated findings will contribute to academic understanding of the wider and enduring effects of ERW on human populations. At the policy level, these findings will inform policy choices about the relative usefulness of de-mining activities in comparison with investments in more general aspects of post-conflict stabilization and reconstruction. These findings will also contribute information of use to relief and development agencies that seek to develop strategies and programs for families and communities living in or returning to munitions-affected areas.

There is little information to date regarding the longer-term impact of de-mining on settled communities. Qualitative reports suggest that de-mining efforts enhance the rate of return to mine-affected areas but the international community does not know whether populations who return derive any social or economic benefit from living in terrain that has been cleared. It is also not known whether the benefits, if they could be measured, begin to accrue at year one after mines have been cleared, or only after a longer period of time, (a longer time frame for inquiry would assume that only as people gain confidence would they begin to move about more freely for educational, economic, and social purposes).

Without quantitative information about the longer-term effects of de-mining on community parameters of psychological, social, and economic well-being it is very difficult to engage in valid or robust assessments of the cost-benefit profile of de-mining activities. In a period of ever-growing constraints on resources from the international community, it would be most helpful to be able to argue, based on data that might be obtained in this study, that the expense and effort of de-mining activities carry measurable positive consequences for people who are attempting to recover from war.

CDC currently receives funds to support the prevention of injuries due to ERW and the rehabilitation of victims of ERW injury. Data from this study will be used by CDC's International Emergency and Refugee Health Branch to develop priorities for the assistance of victims of ERW. In addition, these data will be useful in directing the humanitarian demining efforts coordinated by the Departments of State and Defense.

Privacy Impact Assessment Information

This information is being collected to assess the effectiveness of humanitarian mine action (landmine and unexploded ordnance clearance, also known as de-mining) upon the economic, social and mental well being of impacted communities. The general theory to be examined is that individuals and communities in these locations suffer when living in an area with landmines and unexploded ordnance since they cannot use all land resources and suffer the trauma of injured or killed family members. There are no statistics nor is there research that can accurately capture these alternative measures of impact. There now exists an opportunity for further research that will benefit the general public as well as the organizations and governments working with persons impacted by landmines and UXO.

Data will be used to advance and refine tools and systems to reduce the negative health impact posed by landmines and unexploded ordnance, both for U.S. and non-U.S.-based populations

No information in identifiable form is being collected.

3. Use of Information Technology and Burden Reduction

All responses (100%) will involve the use of automated electronic data collection techniques to reduce the burden on participants. The survey instrument (Attachment 3) will be loaded into hand-held personal digital assistants (PDAs) equipped with GPS systems. Data entry will be concurrent with administration of the survey. At the end of each day, the PDAs of the interviewers will be downloaded into the survey team laptop, copied to a USB storage device, and also sent via email to the team's desktop computer in the home office in Cambridge, MA. These methods will eliminate the need for keying responses from paper forms and reduce data entry errors.

The survey questionnaire has many skip patterns to avoid asking the respondent irrelevant questions, thus shortening interview time.

The focus groups will be led by two members of the study team, and will be recorded, with one team member keeping notes in English and the other, bilingual in the native language and English, leading the discussion. Once a week, a bilingual member of the study team will transcribe the recorded tapes into electronic format. Transcripts will be translated and back-translated prior to coding.

4. Efforts to Identify Duplication and Use of Similar Information

There is no study to date that has gathered this information. After an extensive literature review we did not find any study with similar objectives and found no evidence that similar data exists. In addition, our ongoing interactions with de-mining agencies and humanitarian NGOs and our

discussions with academic and government researchers indicate that there are no current or planned projects that intend to gather this information in the anticipated future.

Worldwide, the major effort relating to ERW data collection focuses on the Landmine Information Survey (LIS), which establishes a geographic mapping system that identifies landmines along transport and trading routes and in areas of local population concentration. This survey is now operational in 15 countries and provides essential baseline information relating to landmine proximity to population settlement, disruption of access to essential services due to landmines and resultant estimates of landmine risk, and progress in terms of ERW removal. Other studies have focused on quantifying the impact of ERW by documenting the rate of death and physical injury due to these devices. No study has assessed the longer-term consequences that the presence of ERW has imposed on families and communities, in terms of well-being, livelihoods, or sense of the future.

5. Impact on Small Businesses or Other Small Entities

No small businesses or other small non-profit organizations will be involved in this study.

6. Consequences of Collecting the Information Less Frequently

This is a one-time data collection effort that will take place in Lebanon. This information has not been collected in the past and will be used for planning and policy purposes once it has been gathered. There are no plans for an ongoing data collection process. There are no legal obstacles to reduce the burden.

7. Special circumstances relating to the Guidelines of 5 CFR 1320.5

This data collection complies fully with the regulation 5 CFR 1320.5.

8. Comments in Response to Federal Register Notice and Efforts to Consult Outside Agency

A. A revised 60 Day Federal Register Notice was published in Federal Register Vol. 72, No. 244 / Thursday, December 20, 2007, pages 72361 – 72363. A copy of the announcement is in Appendix 2. One public comment from Jean Public was received and the CDC OMB office sent a standardized response. No further response is needed.

B. The survey instrument and study design have been reviewed by the following individuals in 2008:

- a. Mark Anderson, MD MPH, International Emergency and Refugee Health Branch, National Center for Environmental Health, CDC, Atlanta, GA, 404-498-0821, mea6@cdc.gov. Consulted in September 2008.

- b. Alan Zaslavsky, PhD, Department of Health Care Policy, Harvard Medical School, Boston, MA , 617-432-2441, zaslavski@hcp.med.harvard.edu. Consulted June 2008.
- c. Barbara Lopez-Cardozo, MD MPH, International Emergency and Refugee Health Branch, National Center for Environmental Health, CDC, Atlanta, GA, 404.498.0905, blopescardozo@cdc.gov. Consulted June 2008.
- d. Curtis Blanton, MS, Division of Emergency and Environmental Health Services, National Center for Environmental Health, CDC, Atlanta, GA, 770.488.7114, cgb9@cdc.gov. Consulted June 2008.
- e. Holly Williams, PhD, International Emergency and Refugee Health Branch, National Center for Environmental Health, CDC, Atlanta, GA, 770.488.0693 hbw2@cdc.gov. Consulted June 2008.
- f. Benjamin Sklaver, MALD, International Emergency and Refugee Health Branch, National Center for Environmental Health, CDC, Atlanta, GA, 770.488.0683 bfu2@cdc.gov. Consulted in September 2008.

There were no major problems that could not be resolved during consultation.

9. Explanation of Any Payment or Gift to Respondents

Respondents to the survey will not be compensated for their participation. Members of focus groups may be reimbursed for time and effort at a rate corresponding to the hourly minimum wage rate prevailing in their local region, depending upon expectations of respondents.

10. Assurance of Confidentiality Provided to Respondents

Survey respondents are local residents who have been randomly selected to participate. Focus group members are local residents who have been identified by local organizations. The information obtained will be limited to the questions asked on the survey instrument and the focus group discussion guide.

The respondents, once identified, will be assigned a case identification number. All data gathered for the study will be maintained by the case ID number and any links to any information that could identify the name of the individual will be destroyed. Information relating to the location (village or city) of the individual will be kept in a separate password-protected file within a directory on the Harvard Humanitarian Initiative (HHI) Local Area Network (LAN). Location information may be required at a later date to quality-check or validate data. Only the principal investigator, Dr. Jennifer Leaning, the project manager, Dr. Gregg Greenough, and the study coordinator, Dr. Hani Mowafi, can access this directory.

No information in identifiable form will be collected.

The study was approved by the Harvard School of Public Health IRB (exemption in Attachment 4).

Privacy Impact Assessment Information

- A. It has been determined that the Privacy Act does not apply. The Privacy Act applies only to U.S. citizens and the study is being conducted in Lebanon. Furthermore respondents, when identified, will be assigned a case identification number and no link to information that could identify the name of the individual will be maintained. Therefore, no information in identifiable form will be collected.
- B. Survey team members and translators will be recruited from outside the local area and will be strictly safeguarded. During the study, the information collected each day will first be entered into hand-held Personal Digital Assistants (PDAs) and then each evening stored in a USB device as well as transferred by email to the HHI file on the HHI LAN in Cambridge, MA. The PDAs and USB devices will be kept under lock and key in the office of the survey team field director. Data analysis will be conducted using password protected data files. At the conclusion of the study, the data will be reported in aggregate, such that no individual case can be identified from the survey or focus groups. Once data collection is completed and fully analyzed, all records bearing location of the respondents will be removed from the HHI LAN and stored in the password-protected file in a different password protected directory in the personal computer files of the PI, at the HHI main office in Cambridge, MA.
- C. Respondents will be read and asked to sign a consent form. See Informed Consent form in all surveys in Appendix 3.
- D. Data will be treated in a secure manner and will not be disclosed, unless otherwise compelled by law.

11. Justification for Sensitive Questions

Justification for Collection of Sensitive Information

The survey questionnaire contains some questions that ask the respondents to speak about their feelings and attitudes towards past exposure to ERW (including injury to self or family member and/or death to family member), their current sense of safety and their plans for the future, ranging from education, to marriage, to re-settlement. The demographic questions are not sensitive (no questions are asked regarding race, ethnicity, religion, tribal affiliation, or political party affiliation). No individual identifier information will be collected. Respondents will be

told that they can refuse to answer any question(s) they do not wish to answer, and that they can withdraw or terminate the interview at any time.

Feelings and attitudes towards ERW, safety, and plans for the future: These questions are important variables in assessing the impact of ERW on the social and economic behavior of individuals and groups

12. Estimated Annualized Burden Hour and Costs

A. The estimated number of responders for the quantitative survey cluster munition exposed group is 600 heads of household, based on an estimated population of 1,094,200⁷ for the three governorates of South Lebanon affected by cluster munitions; the estimated number of responders for the control group of stable communities with a remote ERW exposure elsewhere in Lebanon is 600 heads of household for a total of 1200 heads of household. The matched cluster study will be randomized; the sample size is of sufficient power to establish 95% confidence intervals with a design effect of 2.0 (see Section B). Each respondent will be interviewed only once. The estimated total annual hour burden on respondents is 1200 hours (Table 12-1). The estimates are based on the average time to administer the survey. The hour burden will differ for individual respondents because the use of skip patterns will vary depending on the history of exposure to different risk factors for each household head. The use of PDAs will increase efficiency of recording responses.

The estimated number of focus group participants is 64 with an average of 8 participants each in eight focus groups, four in the cluster munitions exposed communities and four in the remote ERW exposed communities. The focus groups will be conducted only once and the estimated total annual hour burden on focus group participants is 128 hours (Table 12-2). The estimates are based on the average time for each focus group. The use of tape recorders during the focus groups will facilitate documentation.

Table 12-1

Estimates of Annualized Burden Hours—South Lebanon Governorates, Household Survey

| Type of Respondents | Number of Respondents | No. Responses per Respondent | Average Burden Time per Response (in hours) | Total Burden Hours |
|--------------------------------------------------|-----------------------|------------------------------|---------------------------------------------|--------------------|
| Cluster munitions household respondents | 600 | 1 | 1 | 600 |
| Control (remote landmines) household respondents | 600 | 1 | 1 | 600 |
| Total | 1200 | | | 1200 |

Table 12-2

⁷ UNDP. National Survey of Household Living Conditions. 2004.

Estimates of Annualized Burden Hours—South Lebanon Governorates, Focus Groups

| Type of Respondents | Number of Respondents | No. Responses per Respondent | Average Burden Time per Response | Total Burden Hours |
|-----------------------------------------------------|-----------------------|------------------------------|----------------------------------|--------------------|
| Cluster munitions focus group participants | 32 | 1 | 2.0 | 64 |
| Control (remote landmines) focus group participants | 32 | 1 | 2.0 | 64 |
| Totals | 64 | -- | -- | 128 |

Hourly wage rate was calculated as follows:

Estimated per capita GDP for Lebanon is US \$5,584 (UNDP estimate: http://hdr.undp.org/en/media/HDR_20072008_EN_Indicator_tables.pdf). This figure is not directly translatable to wage rates. Hourly wage rate of \$2.68 was calculated based on per capita income divided by 2080 working hours per year (40 hours x 52 weeks).

Table 12-3

Estimates of Annualized Cost to Respondents—Lebanon, Household Survey

| Type of Respondents | Number of Respondents | No. Responses per Respondent | Average Burden Time per Response | Total Burden Hours | Hourly Wage Rate | Respondent Cost |
|--------------------------------------------------|-----------------------|------------------------------|----------------------------------|--------------------|------------------|-----------------|
| Cluster munitions household respondents | 600 | 1 | 1 | 600 | \$2.68 | \$1,608 |
| Control (remote landmines) household respondents | 600 | 1 | 1 | 600 | \$2.68 | \$1,608 |
| Total | 1200 | | | 1200 | | \$3,216 |

Table 12-4

Estimates of Annualized Cost to Respondents—Lebanon, Focus Group

| Type of Respondents | Number of Respondents | No. Responses per Respondent | Average Burden Time per Response | Total Burden Hours | Hourly Wage Rate | Respondent Cost |
|-----------------------------------------------------|-----------------------|------------------------------|----------------------------------|--------------------|------------------|-----------------|
| Cluster munitions focus group participants | 32 | 1 | 2.0 | 64 | \$2.68 | \$171 |
| Control (remote landmines) focus group participants | 32 | 1 | 2.0 | 64 | \$2.68 | \$171 |
| Total | 64 | | | 128 | | \$342 |

13. Estimates of Other Total Annual Cost Burden to Respondents or Record Keepers

A. Total capital and start-up component

Respondents or record keepers will incur no capital and start-up component costs.

B. Total operation and maintenance and purchase of services component

Respondents or record keepers will incur no operation and maintenance and purchase of services component costs.

14. Annualized Cost to the Federal Government

The government cost is the amount itemized in the federal grant from the CDC and the personnel costs of federal CDC staff epidemiologists and administrators involved in the development, design, analysis, and oversight of the research.--\$142, 256.

A. Contract phases, tasks, estimated costs

1. Personnel

- a. None requested.

2. Fringe Benefits

- a. None requested

3. Travel

- a. Airfare: 2 trips @ \$2,564
- b. Visas and travel related exp: 2 @ \$50
- c. Ground transportation to/from airport: 2 @ \$100
- d. Lodging/Meals in transit: 2 @ \$50
- e. Monitoring and Evaluation Harvard Humanitarian Initiative (HHI) Team: \$6,048
(1 person x 56 days x \$72, plus 1 person x 28 days x \$72)
- f. Lodging in-field HHI team: \$3,920 (56 days x \$70)
- g. In country communication expenses: \$600
- h. Drivers with car \$10,057 (1 driver x 56 days x \$57, plus 4 drivers x 30 days x \$57)
- i. Petrol/Oil/Maintenance \$1,900

TOTAL, Travel \$28,053

4. Equipment

- a. Recording equipment (tape recorder and tapes) \$300

TOTAL, Equipment \$300

5. Supplies

- a. Maps, language, books \$50
- b. Planning meeting supplies \$200
- c. Misc office and field supplies: \$200

TOTAL, Supplies \$450

6. Contractual/Consultants

- a. G. Greenough (Research Director): Salary based on 28 days x \$200/day = \$5,600
- b. H. Mowafi (Lead Field Investigator): Salary based on 56 days x \$147/day = \$8,249
- c. Statistician: We will hire 1 U.S.-based statistician to work for 60 hours at \$120/hr = \$7,200
- d. Research Assistants: We will hire 2 U.S.-based research assistants for 6 weeks for \$945 stipend total each = \$1,890
- e. Supervisor (Quantitative study): We will hire 1 Lebanese staff to work for 30 days at \$50/day = \$1,500
- f. Data collectors (Quantitative study): We will hire 16 Lebanese staff to work for 30 days at \$40/day = \$19,200
- g. Focus Group Leaders (Qualitative study): We will hire 1 Focus Group Leader for 10 days at \$250/day = \$2,500
- h. Focus Group Assistant / Recorder (Qualitative study): We will hire 1 Focus Group Assistant / Recorder for 10 days at \$60/day = \$600

TOTAL, Consultants \$46,739

7. Construction

- a. Not Applicable

8. Other

- a. Honoraria for focus group participants: We will provide lunch for participants at \$25 per person for 64 participants = \$1,600
- b. Translation: We will hire 1 translator for 38 hours of translation and transcription at \$40/hr = \$1,500

TOTAL, Other \$3,100

9. Total Direct Charges, \$78,642

10. Indirect Charges, 26% negotiated rate with DHHS = \$20,447

11. Totals \$99,089

B. Federal (CDC) staff involved in oversight and/or analysis, year estimate

| Position | Tasks | Avg time | Avg. cost |
|----------------------------------|------------------------------|----------|-----------------|
| Medical epidemiologist | consultation and analysis | 5% | \$5,750 |
| Statistician | data analysis & consultation | 5% | \$4,200 |
| Field epidemiologist | data collection & analysis | 25% | \$28,750 |
| Travel (field & consultation) | | | \$4,467 |
| Annualized federal costs: | | | \$43,167 |

Estimated total annualized cost: \$142,256

15. Explanation for Program Changes or Adjustments

This is a new data collection.

16. Plans for Tabulation and Publication and Project Time Schedule

| 16 – 1 Project Time Schedule | |
|--------------------------------------------------|---------------------------------|
| Activity | Time Schedule |
| Initiate data collection | 1 – 2 months after OMB approval |
| Complete data collection | 4 months after OMB approval |
| Complete cleaning and weighing of final data set | 5 months after OMB approval |
| Analysis and preparation of draft reports | 7 months after OMB approval |
| Submit results for publication | 8 months after OMB approval |

It is anticipated that there will be several publications from these studies. All data will be reviewed, analyzed, and published jointly with the CDC.

The analysis plan follows the objectives described in the study, which are to:

- Identify the nature of the risks posed to households and communities by ERW (cluster munitions)
- Determine the level of exposure (density of cluster munitions) and the associated human security responses
- Define the population groups most affected
- Assess the impact of independent variables

- Determine the relative burden of risks by impact on human security parameters
- Perform a dose-response analysis based on level of exposure to cluster munitions

The analysis plan has the following parts:

1. Describing the study population
2. Estimating the prevalence of ERW risk factors by demographic and geographic characteristics
3. Estimating crude odds ratios for human security outcomes by risk factors for given levels of exposure
4. Describe ERW risk and perception of risk in a dose-response relationship
5. Estimating the impact of the independent variables on these odds ratios
6. Building logistic regression models to better describe the associations between and among ERW risk factors, demographic and geographic characteristics, land tenure and livelihoods, and human security outcomes.

All analyses will be conducted using complex survey software that takes into account the complex nature of the study design when computing variance estimates.

Describing the study population: This step in the analysis includes a description of the study population in southern Lebanon compared to the general population elsewhere in Lebanon as a means of highlighting the demographic variables of the study population.

Prevalence analysis of ERW risk factors: This descriptive analysis will produce prevalence estimates that the international community and the local governmental authorities will use to identify potential interventions and target populations.

Crude odds ratios: This step will describe the crude associations between level of exposure (cluster munition density) and outcomes of human security (perceptions and behaviors).

Dose-response analysis: Exposure to cluster munitions will be treated as a continuous variable and a dose-response relationship model developed in respect to dependent variables of human security, perceptions of risk, and behaviors.

Multivariable analysis: The purpose of the multivariable analysis is to clarify the relationships among ERW risk factors and human security outcomes after adjusting for potential confounders or independent variables, such as land tenure and cultural factors that may modify associations between risk factors and outcomes.

Multivariate analyses will be presented in terms of adjusted odds ratios. Adjusted odds ratios and 95% confidence intervals will be calculated by using logistic regression to adjust for potential confounders identified in bivariate analyses. Possible effect modification of risk by selected demographic variables and other potential confounders will be identified based on evidence in the literature, and assessed using a likelihood ratio test.

17. Reason(s) Display of OMB Expiration Date Is Inappropriate

No exemption requested.

18. Exemptions to Certification for Paperwork Reduction Act Submissions

There are no exceptions to the certification.

Appendices

I. Legal authorities:

- a. Appendix 1a: Section 301 of the Public Health Service Act (42 USC 241)
- b. Appendix 1b: Section 391 of the Public Health Service Act (42 USC 280b)

II. Federal Register Notice (60-day)

III. Data Collection Instruments

- c. Appendix 3a Quantitative Survey Instrument – Household Cluster Surveys
- d. Appendix 3b: Qualitative Survey Instrument for Focus Group 1– Mothers with Small Children
- e. Appendix 3c: Qualitative Survey Instrument for Focus Group 2 – Agriculturalists
- f. Appendix 3d: Qualitative Survey Instrument for Focus Group 3 – Community Leaders
- g. Appendix 3e: Qualitative Survey Instrument for Focus Group 4 – Herders

IV. IRB Application to Harvard School of Public Health

V. List of Selected Publications