

Global Landmine Survey Initiative



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Survey Action Center, Washington, DC



SURVEY ACTION CENTER



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Table of Contents

Introduction	3
Program Overview	5
A Glimpse of History	7
Institutional Structure for the Global Landmine Survey	9
Key Stakeholders	11
Finances	13
Funding Mechanisms	13
Survey Budget	13
Information Management System	14
Conducting the Survey: Laying the Groundwork	16
Survey Methodology	18
Expert Opinion	18
Community Interviews	18
Managing and Recording Data	19
Final Report	20
Conducting the Survey: Analyzing Data	21
Quality Assurance	22

Figures

1 Landmine-affected countries around the world	6
2 Participants and outcomes of May 1988 Brussels meeting	7
3 Flow of information using IMSMA	15

Introduction

It is conservatively estimated that \$1 billion has been spent on humanitarian mine clearance and mine awareness in the past six years.¹ It is reasonable to expect that this level of activity will be supported in the coming decade. Whether or not this level of funding is adequate to the task, it is clear that the international mine action community owes it to mine victims and mine-affected societies to ensure that this money is spent in the most effective way possible. After a decade of international humanitarian mine action, it is time for a more systematic approach toward the execution of landmine surveys. This approach, strategic in nature and conducted to an international standard, should prioritize minefields according to their impact on communities and develop a national plan with a clearly phased beginning, middle, and endgame strategy to end the terror.

The current level of mine action activity has been fueled by the worldwide stigmatization of anti-personnel landmines. In the unprecedented rush in the past decade to ban landmines and clear minefields, a great deal has been accomplished: The Ottawa Treaty has been ratified in record time; landmine casualty rates are down in some of the most affected countries; and NGOs, the United Nations, and governments have established coordination mechanisms to minimize duplication and to establish standards for mine action activities.

Lessons have been learned—often the hard way—but they have been learned. Three lessons stand out:

1. The most effective mine action programs result from close *collaboration* among the following:
 - National authorities
 - Donors
 - Implementing agencies
2. Mine action programs should have three *integrated components*:
 - Mine awareness and risk reduction education
 - Minefield clearance, minefield survey, and minefield marking
 - Victim assistance
3. The life span of a mine action program has *three general growth phases*:
 - *Planning/initiation*: Define the problem and create national plan. Immediate postconflict, crisis atmosphere; high up-front expenditures on training and equipment.
 - *Consolidation*: Control the terror. Relatively high international presence; large-scale operations with high costs.

¹ *Landmine Monitor Report—2000—Executive Summary*, International Campaign to Ban Landmines, www.icbl.org, pp33–38.

■ *Clean-up*: Long-term clean-up of low-priority fields.

International presence reduced or eliminated; phase back on resource requirements; sharply reduced expenditures; “fire brigade” clean-up operation.

The three lessons above concern *process*, *program design*, and *strategy*, respectively. All three lessons call for better and more standardized information than is currently available.

The Global Landmine Survey will provide the three major partners of mine action—national authorities, donors, and implementing agencies—with a common database. This database is constructed to give national authorities the ability to manipulate the data in a transparent way that is responsive to national priorities. International donors will have data that conforms to an international standard that will put individual countries in a global perspective. And implementing agencies will have detailed information for tasking resources and measuring progress across all areas of mine action.

The Landmine Impact Survey data provide all three major sectors of mine action—mine awareness and risk reduction education; minefield clearance, minefield survey, and minefield marking; and victim assistance—with vital nationwide data that will facilitate sector planning and integration.

Perhaps most important, the survey information will provide a clear picture of the social and economic impact of minefields on communities. With this data, rational priorities can be established. High-impact areas, as defined by the national authorities, can be cleared immediately, with medium- and low-impact areas assigned to mid-term and long-term treatment. Resource mobilization strategies, training, program composition, and timelines will vary with each phase.

Landmines kill and maim victims and terrorize communities. They delay national reconstruction. Yet not all minefields are equal and, with good survey information, the worst of them can be identified and destroyed with a highly focused national strategy. This will require relatively high mobilization costs. The international donor community has shown itself willing to pay this price.

In a relatively short time, the international community has accepted the necessity for impact surveys. In eight of the most mine-affected countries, Landmine Impact Surveys are being planned, are under way, or are completed. With more surveys planned for the future, the international community will truly have the information required to effectively plan programs and deploy funds to contain the terror of landmines by the end of this decade.



BOB EATON

Director of Humanitarian Affairs, VVAF

Washington, DC
November 2000

Program Overview

After a decade of humanitarian mine action, the global landmine problem remains poorly defined. Wide-ranging estimates regarding the number of landmines, or pictures of affected mine victims, are still frequently the only methods used to illustrate the impact of landmines in the world. However, such measures do not realistically define the full impact that landmines have upon civilian populations. Ten landmines on critical agricultural land may have a much more profound impact upon a community than do 100 landmines surrounding a distant military outpost.

Much is known about the suspected location of minefields, but little is known about the *socio-economic impact of landmines on communities*. Without such information, it is difficult to develop effective strategies to mitigate the human and economic toll extracted by these weapons. If the terrible effect of landmines is to be contained within years, rather than decades as envisioned by the Ottawa Treaty and the United States's 2010 Initiative, then better information is essential. In brief, the mine action community must change the focus of assessment from a tally of *numbers* of suspected mines in general to an assessment of *impacts*—impacts upon people, communities, and nations.

In a collaborative effort to better inform the mine action process, members of the mine action community have initiated the *Global Landmine Survey*. This is an international initiative aimed at institutionalizing Landmine Impact Surveys as an integral part of the mine action assessment, planning, and resource allocation processes. The objective of a Landmine Impact Survey is to facilitate the prioritization of human, material, and financial resources supporting humanitarian mine action at the national, regional, and global level, through the collection and analysis of socio-economic impact data.

Landmine Impact Surveys are designed to identify communities affected by landmines or unexploded ordnance (UXO) and assess the human and economic impact of these weapons. Each survey outlines the landmine problem at the community level using rapid rural appraisal techniques and a common database, the Information Management System for Mine Action (IMSMA), to store, analyze, and graphically portray survey results. The surveys focus upon collecting community knowledge of the social and economic impact of landmines as well as upon the general location of known or suspected contaminated areas. Landmine Impact Surveys build upon previous survey practices and collect all relevant data required to support follow-on mine action activities in the areas of technical survey, clearance, mine awareness education, and victim's assistance.

In existing mine action programs, a completed Landmine Impact Survey will provide data for the development of clear priorities, improved planning, and a more rational allocation of existing resources. In new programs, such a survey will allow for the creation of a complete national strategic plan, including detailed priorities and a clear picture of resource requirements. In all cases, collected data

A Glimpse of History

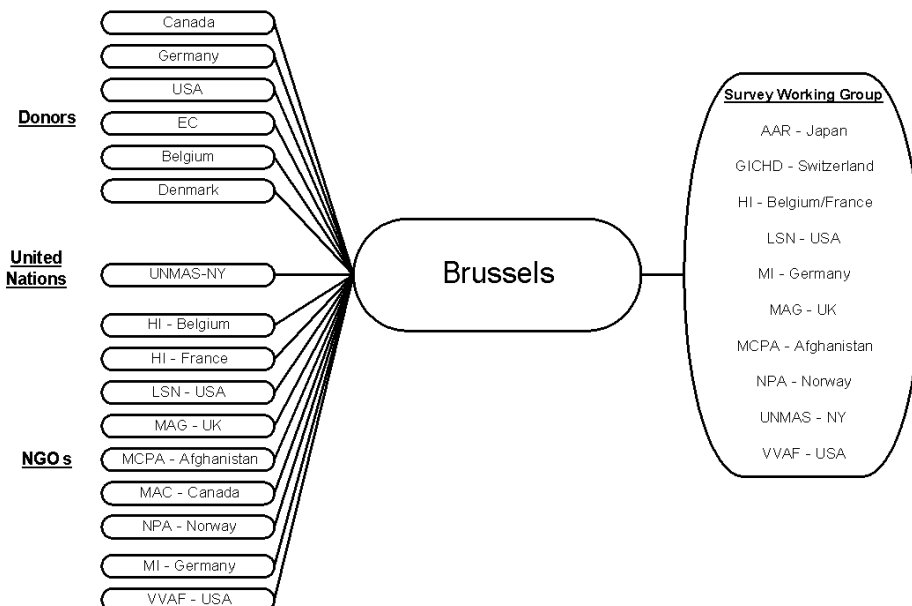
The Global Landmine Survey was first conceived in Ottawa in March 1998 when participants at the Ottawa Workshop on Mine Action Coordination began discussing the possibility of a global effort to survey landmine-affected countries. The impetus for this meeting came primarily from the members of nongovernmental organizations (NGOs). The government of Canada hosted the conference. Among other outcomes of the conference, over 200 interested stakeholders, including NGOs, donor government, and U.N. agencies, formed the *Survey Contact Group* to explore the potential for a socio-economic impact survey of the most mine-affected countries.

At the Washington Conference on Global Humanitarian Demining held in late May 1998, the U.S. government pledged to help remove the threat of landmines worldwide by the year 2010 and affirmed its support for the survey effort.

In spring 1998, *Vietnam Veterans of America Foundation* (VVAf) financed, and *Handicap International/Belgium* hosted, two meetings of interested parties to develop a collaborative plan for a *Global Landmine Survey*. Key donor countries, NGOs, and the United Nations Mine Action Service attended the meetings and shared chairing the sessions. This initiative would focus on identifying the geographic distribution of landmines and understanding the social and economic impact of these landmines on communities. A smaller *Survey Working Group* agreed to lead the project and appointed VVAf to create and manage a *Survey Action Center* (SAC). The SAC was tasked with coordinating impact surveys worldwide, providing technical support, and mobilizing donor support.

FIGURE 2

PARTICIPANTS AND OUTCOMES OF MAY 1988 BRUSSELS MEETING



By fall 1998, initial funding for the survey had been secured. Social scientists from the World Bank and United States Agency for International Development (USAID) met with members of the Survey Working Group over the summer in Washington, D.C., to share best practices in survey methodology and to begin planning for the execution of Landmine Impact Surveys.

At the time of this report, one full survey has been completed in Yemen and a modified survey in Kosovo. Surveys are under way in Chad, Thailand, Mozambique, and Cambodia. The Mozambique and Cambodia surveys are direct bilateral actions between the donor country (Canada) and the recipient country. Initial funding has been secured and planning is under way for surveys in Afghanistan, Vietnam, and Lebanon. The Survey Action Center is providing a quality assurance monitor on behalf of United Nations Mine Action Service (UNMAS) to the survey in Mozambique, and SAC technical expertise and training are shared with all survey country teams, regardless of funding mechanism.

Institutional Structure for the Global Landmine Survey

The Global Landmine Survey is a truly international coalition effort that was made possible by a shared vision and commitment by many different organizations and agencies.

The Survey Contact Group is composed of individuals, government donor agencies, NGOs, and international organizations interested in the Landmine Impact Survey. The Survey Contact Group came together in Ottawa in 1998 to set forth a broad vision for change in the area of mine action survey and program management. This group is now regularly updated by the SAC on all ongoing operations, and its members help to ensure that dialogue on survey-related issues continues.

The Survey Working Group (SWG) grew out of the Survey Contact Group and is responsible for setting the standard for Landmine Impact Surveys and general oversight of the Survey Action Center. Members of the SWG are as follows:

- Association for Aid and Relief (AAR)—Japan
- Geneva International Centre for Humanitarian Demining (GICHD)—Switzerland
- Handicap International (HI)—Belgium and France
- Landmine Survivors Network (LSN)—USA
- Medico International (MI)—Germany
- Mines Advisory Group (MAG)—United Kingdom
- Mine Clearance Planning Agency (MCPA)—Afghanistan
- Norwegian People's Aid (NPA)—Norway
- United Nations Mine Action Service (UNMAS)—United Nations
- Vietnam Veterans of America Foundation (VVAFF)—USA

The Survey Action Center (SAC), as the executing arm of the SWG, was endorsed as the primary organization to execute and/or coordinate surveys, provide technical support, and raise funds for the conduct of Landmine Impact Surveys worldwide. The SAC is a team of experts in social science, database management, geographic information systems, and logistics. In those countries where SAC is not involved in the direct implementation of surveys, such as in Cambodia and Mozambique, it serves as a repository for lessons learned and as a source of technical advice and support. The SAC is located in the offices of Vietnam Veterans of America Foundation in Washington, D.C. VVAFF serves as the fiduciary agent and provides administrative and managerial support.

The United Nations Certification Committee is a group of U.N. agencies chaired by the United Nations Mine Action Service and joined by a representative of the NGO community that reviews all impact survey outputs, reports, and data sets as part of the process of certification. All surveys to be certified are conducted in accordance with the UNMAS Certification Guidelines, and they receive periodic visits from a U.N. quality assurance monitor (QAM). The aim of this extensive and thorough process is to ensure that all impact surveys, regardless of executing agency, are conducted in a consistent and professional manner to the international standards established by the SWG. Donors and the international community at large can expect the highest standards of reliability and accuracy from certified survey results.

Key Stakeholders

Landmine Impact Surveys are the collaborative effort of national authorities, national mine action centers, donors, the United Nations, and relevant government or nongovernment entities.

National Authorities are ultimately responsible for the conduct of the survey. The Survey Action Center provides training and equipment. Through training and the U.N. certification process, the survey is carried out to international standards. National agencies provide senior managers, field supervisors, data collectors, and data analysts. This process builds capacity of national staff and helps to ensure that the survey, as a management tool, can be updated and used for years to come.

The Landmine Impact Survey provides government leaders and other policy makers with an independent, rank-ordered assessment of where the landmine problem is most acute. This information can, for the first time, allow for the creation of long-term national plans with detailed objectives and clear measures of performance. Perhaps more importantly, impact survey data provide a mechanism to more closely integrate mine action with broader development objectives, such as refugee resettlement, reduction of mine accidents, food security, and access to resources.

Local Partners such as NGOs, academic institutions, and security forces are critical components of any successful impact survey. In each country where a survey is conducted, local partners are identified and provided with full information regarding survey practices and protocols.

Donors were among the first to realize the importance of Landmine Impact Surveys. Impact surveys enable donors to allocate funds on the basis of a professional, independent assessment of the problem. Donors will be able to understand their contributions in the context of the entire national problem. The survey provides baseline data for measuring the progress of mine action interventions. Donors will be able to clearly see the socio-economic returns that result from their contributions.

Mine Action Centers are at the center of most national mine action programs. Mine action centers and/or government agencies will gain from the impact survey a much higher quality of planning and management information than is available currently. The survey information is integrated in the Information Management System for Mine Action (IMSMA). This information will allow for more effective allocation of resources, as well as the establishment of clear operational priorities.



The Thailand survey team meeting with key local stakeholders.

With more rational work plans, mine action centers will be in a better position than at present to administer and monitor contracts for mine action.

Mine Clearance Agencies will be able to use Landmine Impact Survey data in a much improved and more accessible format. The mined area maps and photos collected during the impact survey provide a clear indication of the technical scope of landmine contamination in each country surveyed. These data enable planners to prioritize the allocation of scarce clearance resources and to determine the most appropriate mix of technicians, dogs, equipment, and so on, needed for each area of the country.

Victim Assistance Agencies will know where the victims are and what kinds of wounds they received. Information is collected regarding the type of emergency medical care that was available and whether or not mine accident survivors have received any rehabilitative treatment. These data are invaluable in determining where clinics are required and what types of prosthesis and rehabilitation services are needed.

Mine Awareness Organizations can use impact survey data to design mine awareness campaigns tailored to those segments of the society most in danger of becoming mine victims. The survey will provide solid demographic data of past mine victims, their activities at the time of the accident, and a location of each incident.

Ottawa Treaty Signatories are required to demonstrate progress toward eliminating landmines and to periodically provide data related to the extent of landmine contamination that they are facing. The information collected during an impact survey will fulfill these requirements, thus allowing countries to meet their treaty obligations.

U.N. Agencies with policy or executing roles in mine action programs at the global level can use impact surveys to refine international standards and strategies. Through the macro-reporting system of the IMSMA, policy makers in New York and Geneva will have a much clearer picture of the global mine action situation.

Research and Development Agencies will gain valuable information concerning terrain and land cover from the survey, which will assist in defining new product requirements, market needs, and logistical support requirements.

Finances

FUNDING MECHANISMS

The Global Landmine Survey initiative is an international effort with funding for surveys coming from a wide range of nation-states, international organizations, and foundations. Donors to this effort have an array of mechanisms that they can use to provide funds to the survey. These mechanisms include providing direct contributions to the Survey Action Center or to an implementing NGO, providing a bilateral contribution of in-kind services from one state to another, or using one of the various U.N. trust fund mechanisms. The United Nations Foundation has put in place a one-to-three matching program for funds routed through it and into the United Nations Fund for International Partnerships (UNFIP).

In most cases, more than one funding mechanism is used to support a survey. And, although this may increase the administrative and reporting challenges, multifunding sources allow a greater degree of flexibility, enabling the Survey Action Center or the United Nations to build multidonor packages.

The following sources have provided funding for the Global Landmine Survey Program:

United Nations Foundation (1:3 challenge match)	\$4,000,000 ¹
US State Department	3,700,000
Canada—CIDA & DFAIT	3,000,000
European Commission	1,700,000
United Kingdom—DFID	880,000
Foundations (Rockefeller, J & C MacArthur, Compton)	500,000
Japan	450,000
Norway—Ministry for Foreign Affairs	380,000
VVAF	300,000
Germany	100,000
World Bank	20,000

SURVEY BUDGET

The cost of each individual survey depends on the local conditions in the country being surveyed, the scale of the mine contamination problem, and the capacity level of existing mine action activities. Surveys undertaken to date vary in cost from \$1.1 million to \$1.7 million and take from 12 to 16 months to finish. This figure often includes a large component of nonexpendable equipment that is turned over to the national mine action program at the end of the survey to offset future procurement requirements.

¹ All figures in U.S.\$.

Information Management System

SAC elected to integrate Landmine Impact Survey data into the United Nations Mine Action Service's Information Management System for Mine Action (IMSMA). IMSMA is developed—in close cooperation with UNMAS and other users—by the Swiss Federal Institute of Technology on contract to the Geneva International Centre for Humanitarian Demining (GICHD). GICHD has taken on responsibility for developing IMSMA on behalf of the United Nations Mine Action Service. IMSMA is based on two modules: the Field Module and the Global Module.

The *Field Module* provides a ready-to-use tool for mine action centers, at the national and regional level, to meet their data collection and information management needs. This module allows the user to record, evaluate, and visualize information related not only to minefields (suspected areas; results of general, impact, and technical surveys; and so on) but, also to compile geographic, socio-economic data and information on incidents and mine victims. All data are linked to a geographic information system (GIS) and allow a variety of analysis and interpretation to be carried out. An indexing system provides a community risk profile based on a scoring mechanism.

To date, the Field Module is in use in Kosovo, Yemen, Chad, Thailand, Azerbaijan, Eritrea, Northern Iraq, and Estonia. In addition, central training courses have taken place in Geneva along with on-site training. The United Nations currently plans to install the Field Module in more than 20 countries.

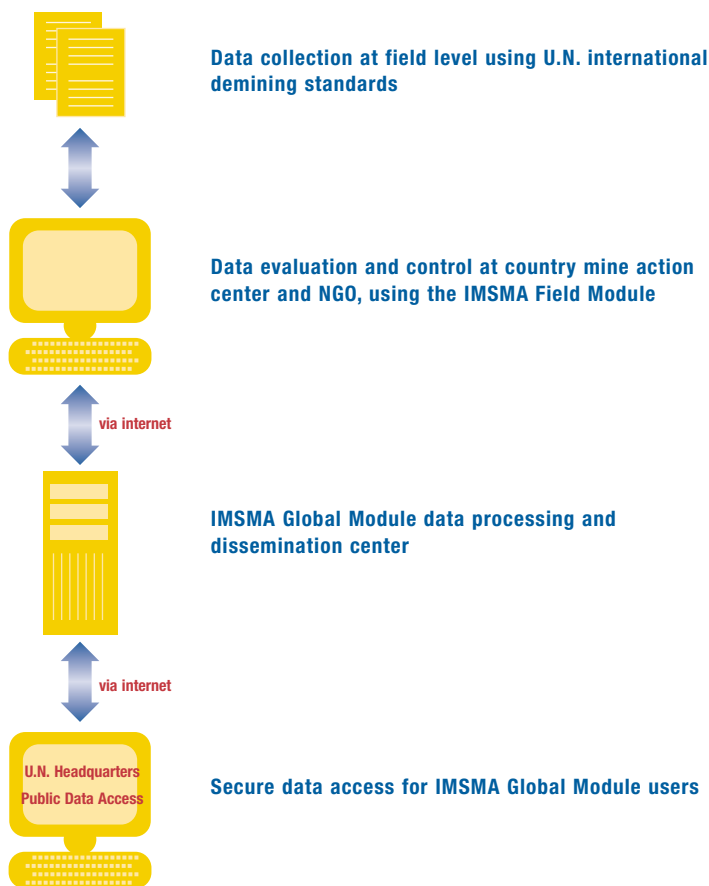
The *Global Module* refines and collates aggregated data from the field and provides the United Nations with improved capabilities for decision making related to mine action. A pilot version was presented to UNMAS in April 2000.

The Field Module has become the U.N. standard for mine information. One of IMSMA's basic principles is user-friendliness. Users are provided with color-coded icons, pictures, tool-tips, and both graphical and menu-driven navigation aids to assist them in their work. IMSMA combines a relational database with a GIS functionality in a Microsoft Access and ArcView environment. It is, therefore, based on easily available standard software. The Field Module will be translated into Arabic, French, Portuguese, Russian, and Spanish.

All Landmine Impact Survey information is initially recorded onto a standardized community questionnaire. This questionnaire contains three sections, which are mirrored in the structure of the IMSMA database. Each section is further subdivided into segments that anticipate the logical flow of conversation. The community-level module can have one or more mined-area modules associated with it, while each mined area module, in turn, can have one or more associated individual victim modules. The community interview process and the IMSMA database minimize the use of text data fields and ensure that all collected data are stored in a logical, easily accessible manner. This approach represents a dramatic improvement over current information management practices found in most mine action

FIGURE 3

FLOW OF INFORMATION USING IMSMA



programs and allows country programs that have undergone a Landmine Impact Survey to use IMSMA quickly and accurately as they execute a wide range of analytic, planning, and mapping activities. See Figure 3.

For more information, please contact the following organizations:

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Conducting the Survey: Laying the Groundwork

Overview—A great deal of analysis, preplanning, and coordination must take place prior to the actual start of in-country survey operations. These activities follow a general flow that begins with a UNMAS-led interagency assessment mission. If the assessment mission recommends a Landmine Impact Survey, SAC organizes an advance mission, which in turn leads to the writing of a project document and the solicitation of donor support. Simultaneously, discussions and negotiations are held between international and national stakeholders that will be involved in the survey. Only when all the pieces come together—a partnership, funding, and a clear operational plan—is the survey in a position to start. Even then, it will take many months of preparation work, including staff selection and training as well as testing the local variant of the methodology, before the collection of actual data takes place.

Country Selection—The process of selecting a country for survey usually begins when UNMAS sends a joint interdisciplinary assessment team to the targeted country to talk with the appropriate authorities and international organizations and to determine the level of interest and the need for a general mine action program. If it is determined that the country would benefit from a Landmine Impact Survey, UNMAS secures the initial permission and cooperation from national leaders to move forward with an Advance Survey Mission. The Survey Action Center then carries out an Advance Survey Mission to assess country conditions and to confirm the feasibility, utility, and need for a survey. If SAC concurs that a survey is needed and feasible, SAC produces a detailed country survey plan and budget, and the necessary partnerships and procedures are established.

International Partnerships—Landmine Impact Surveys are conducted by the Survey Action Center in collaboration with a variety of partners. The administrative structure and partners vary in each country. For example, the Mine Clearance Planning Agency, an Afghan-based NGO, and the Yemen government conducted the project in Yemen. The project in Kosovo was performed directly by SAC using core staff and consultants. In some cases, such as in Cambodia, a survey may be administered as a direct bilateral collaboration between a donor and the recipient country. In such cases, SAC provides services, as requested, that include technical assistance, consultation, training, and quality assurance.

Once the international community has laid the groundwork, national efforts get under way to set up the necessary systems including the following:

National Partnerships—Just as partnerships are required at the international level, national partnerships are required with the requisite government ministries, academic institutions, and mine action stakeholders.

Staff Composition and Responsibilities—Local and international staff are recruited and hired by SAC or the survey implementation organization with input from host country leaders.

Enumerator Teams—Trained enumerators carry out the survey process in targeted communities. These enumerators are usually organized into two-person enumerator teams, with one person acting as the team leader. Most of the people selected for these jobs are well-educated local citizens who are native to the area to be surveyed.

Field Supervisors/Data Editors—Field operations are monitored by trained local supervisors appointed to each specific area or region. These supervisors oversee the day-to-day operations of the enumerator teams and ensure that all data are checked before being entered into the computer.

Implementing Partner Team—Expatriates manage the project and build local capacity. They serve as team leaders and provide support in areas such as training, administration, logistics, operations, and GIS/information management.

Survey Action Center Staff—Specialists in social science, survey procedures, geographic information systems, and statistics provide technical assistance to field personnel as needed.

Training—SAC provides international training at its offices in Washington, D.C., to implementing partners, quality assurance monitors, and interested persons from the mine action and donor communities. Implementing agencies, in turn, will give new in-country survey staff members an overview of mine action issues and train them to carry out the survey. Skills covered include community mapping; questionnaire enumeration; use of specialized equipment (compass, cameras, radios, global positioning system); interviewing techniques; security; administrative procedures; and logistics. Training local people in enumeration and in computer and analytical skills is the most important step in ensuring a successful survey.

Survey Methodology

Efforts to develop a methodology for the execution of Landmine Impact Surveys began in 1998. After a review of earlier landmine surveys, an analysis of the applicability of social science research methods to mine action, and a review of current mine action management practices, the Survey Action Center presented a set of operational protocols to the Survey Working Group. Once approved, these protocols, in turn, served as a basis for the development of the impact survey portion of the Information Management System for Mine Action (IMSMA) and the U.N.'s quality assurance guidelines.

The methodologies used in impact surveys pursue two general avenues of investigation. The first involves the collection of “expert opinion” to establish the location of possible mined communities. The second involves a community interview, which determines the exact impact that mines/UXO have upon a given community. The results of the community interviews provide the information that is then entered into IMSMA.

EXPERT OPINION

Collection of expert opinion is a sequential process that begins at the national level and proceeds through each subsequent administrative layer, gaining detail until a comprehensive list is generated of all impacted communities. Opinion collection involves interviewing knowledgeable persons, such as national authorities, former combatants, and medical professionals, as well as conducting a review of relevant databases, mined area records, archival research, and any existing overhead imagery. This process begins at the national level and is repeated at each lower administrative division throughout the course of the survey. This “expert”

information is next used to develop an increasingly detailed list of communities alleged to have a landmine problem. All communities on this list are then administered the community interview.

COMMUNITY INTERVIEWS

The community interview consists of a number of component activities. Each of these activities is

detailed in a specific field protocol that is designed to maximize the reliability and accuracy of the information collected.

Soliciting Local Participation—Prior to the conduct of the actual community visit, the field supervisor meets with a community leader to explain the survey process and

Chad team members conducting community interview

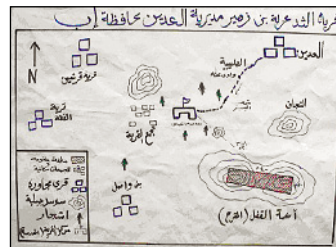


to solicit participation. The community leader recruits people to participate in a two-hour group interview and helps the enumerator team obtain information necessary to carry out other survey tasks.

Group Interviews—With the help of a local community leader, a group of 5–20 people is assembled to participate in a group interview process. Using a structured questionnaire, the enumerator team elicits answers from the group and fills out a coding sheet for each mined area in the community. In some countries, female members of the enumerator team may conduct separate interviews with women. A team of two enumerators can usually administer four village surveys a week.

Village Mapping—As part of the group interview process, a hand-drawn map is created, showing the relationship of suspected mined areas to the village and key local landmarks.

Proximity Verification/Photos—The enumerator team, working under a strict set of safety procedures, does a visual check of reported mined areas. The visual inspection of mined areas confirms the information obtained in the interview while also producing a sketch map, a photo, and a geographic reference for each mined area. These items are digitized and stored in IMSMA for future reference. In Yemen, terrain and safety considerations allowed for verification to be conducted on more than 75 percent of all identified mined areas.



Village map,
Yemen

MANAGING AND RECORDING DATA

Important methodological considerations have been given to how the information is translated and transferred into a format suitable for entry into IMSMA. All of the information collected during the interview is recorded on a standard questionnaire. This questionnaire is designed to follow the pattern of conversation and to systematically ensure that all required data elements are captured. Within one week of the conduct of the interview, the field editor will meet with the enumerator teams to review the quality of their work and to transcribe the questionnaire, map information, and any additional notes into a coding sheet. The aim is to have any possible discrepancies resolved in the field by field staff members who are intimately familiar with local conditions and survey procedures. This field editing process is a critical supervisory and quality control function. Once the data have been transferred to a coding sheet, this sheet is then used by the data management section of a survey to enter the information into IMSMA.

FINAL REPORT

Preliminary reports are done at the district and province level as surveys are completed. Professional staff at the SAC headquarters in Washington, D.C., review the data analysis that is received from the field. A draft country report and briefings on survey results are presented to the national authorities prior to the survey team's departure from a country. The Survey Action Center receives comments from national and local stakeholders. Comments are integrated into the report. In the unlikely event that SAC disagrees with a comment, the comment will be placed into the report as an annex if the national authorities request it. SAC produces a final country report which, accompanied by supporting maps, data, and quality assurance reports, is submitted to the UNMAS Certification Committee.

Conducting the Survey: Analyzing Data

Scoring Data—A mine impact score is given to each community on the basis of the combined value of 15 variables. The higher the score, the greater the impact suffered by the community. The score is a property of the community and is not directly influenced by the number and size of mined areas, although more extensive contamination often translates into greater impact. It is primarily based on three aspects of the local mine problem:

- The number of victims in the past two years
- The blockage of economic assets (e.g., cropland, pasture, water, nonagricultural land, housing, roads, bridges, buildings, and other types of infrastructure)
- The presence of various types of munitions

Weighting Variables—The Survey Action Center sets a uniform weighting standard for the variables. This allows comparison across national lines. However, individual countries can alter the weights of these variables according to country-specific conditions. For example, a country with a large nomadic population may want to place more emphasis on blocked access to grazing land than on blocked access to irrigated farmland.

Scope of the Problem—The survey will provide a clear indication as to the absolute and relative numbers of persons impacted by landmines within a particular country. This can be done at the national, district, subdistrict, and community level. Similar information will be provided in terms of basic victim profiles, areas of land contamination, and numbers and type of blocked infrastructure.

Impact on Communities—Central to the analysis conducted during the survey will be an examination by communities and by sector of the impact as recorded during the interviews. Profiles will be developed of low-, medium-, and high-impact communities.

Causality Analysis—Efforts will be made within the survey to explain adaptive behaviors and to determine if any strong relationships exist between certain descriptive aspects of a community and the community's likelihood of experiencing greater (or lesser) impact from mines and UXO.

Implications for Mine Action—In addition to noting which communities have received some form of mine action activity in the past, the survey will collect and present a number of facts critical to support follow-on activities. These will include an analysis of terrain type and vegetation cover, breakdown of contaminated areas by munitions type (UXO or mines), recording of known safe locations for viewing a mined area, and a record of digital photos.

Quality Assurance

Many steps are taken throughout the survey process to ensure that the result is as accurate and reliable as possible.

Testing and Review—Built into survey operational timelines are critical learning events where the executing body can review the work that has been done and modify procedures as required to fit local conditions. Two key tests take place prior to the start of full-scale data collection. A pretest is conducted in selected communities to check the questionnaire for translation accuracy, cultural sensitivity, and understanding by team members and local communities. Later, a pilot survey is conducted to determine if the survey operations plan and structure, combined with the survey methodology, are practical in the field environment. Midway through the survey itself, an operational review is conducted to verify that the survey is achieving its desired goals and that activities will be completed within given budgetary and time constraints.

Field Editors—The data collected by team members are checked and entered onto coding sheets by a field editor. The editor ensures that the data are formatted correctly and checks the translation to eliminate any problems with language differences. This “editing” process is a critical step in ensuring that the information that is collected is the same as the information that is entered into the computer.

Field Staff Supervision—Supervisory staff members at the national and implementing partner levels routinely check the results obtained during earlier community interviews. Shortcomings are addressed immediately, and a log is kept on the outcomes of these checks.

Sampling for False Negatives—A systematic sampling regime is developed for each country that checks areas initially identified during the expert opinion collection as being “mine-free.” If the results of this sampling do not fall within a tight acceptable range, then the site selection process is reviewed and field operations modified. This sampling is done to ensure that the survey has indeed visited the vast majority, if not all, of the mine-impacted communities in a country. Checking for false negatives is critical to the Landmine Impact Survey process. With diligent attention to this aspect, the survey can truly justify its claim to be nationwide and represent the full landmine problem with a very high degree of accuracy.

External Monitoring—An external quality assurance monitor (QAM), usually a U.N. employee, works with the survey team leader to monitor all project activities and submit project documentation to the United Nations Certification Committee. This person follows a set of UNMAS certification guidelines to witness, record, and document key steps within the survey to ensure that a genuinely sound and acceptable process is being followed. The QAM produces monthly quality assur-

ance reports as well as a final report that is submitted to the United Nations Certification Committee.

SAC Support—SAC staff tracks surveys through weekly field reports, and SAC staff members provide technical assistance and make periodic field visits.



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