CHAPTER 13

INFORMATION MANAGEMENT IN MINE ACTION
SUMMARY
Effective management of information is crucial to a successful national mine action programme. The Information Management System for Mine Action (IMSMA), developed by the Geneva International Centre for Humanitarian Demining (GICHD) is widely used as the Geographic Information System-based database programme to assist in this process. The IMSMA system or other relevant database is usually managed by the national mine action centre.

INTRODUCTION
Information management is one of the key elements required for success in mine action programmes. Following on from the previous chapter, which stressed the importance of information and information management, this chapter looks at the mechanisms for managing mine action information. It begins by reviewing the cycle of information management and the relevant roles and responsibilities within mine action. It then describes the use of the Information Management System for Mine Action, developed by the GICHD, as well as the newly developed IMSMA handheld field data collection tool kit.

ROLES AND RESPONSIBILITIES IN MINE ACTION INFORMATION MANAGEMENT
Considerable efforts have been made within many mine action programmes to gather important data. Nonetheless, most raw data remains just that – raw and unused. Turning data into information requires that it be stored, analysed, shared and, above all, used. Figure 1 below illustrates the information management life cycle.

The first half of the cycle is focused on data collection efforts. Here decisions are made regarding potential sources of data and the methods to be used in the collection process. In practice, this aspect of information management tends to garner the greatest attention from managers. Backed by appropriate feedback mechanisms and field trials this aspect of information management can yield large amounts of data valuable to mine action managers. Mismangement of the process can also lead to data overload and the well known “garbage-in, garbage-out” phenomenon.

Avoiding these pitfalls requires hands-on involvement by managers at all levels in the organisation. Data-collection activities need to be closely coordinated and monitored in order to avoid duplication of efforts, and should incorporate proper quality control mechanisms. At the field level, national and local mine-action programmes and mine-action coordination centres, where they exist, are responsible for coordinating the collection of...
all mine-related data. In their normal coordination role, UN Resident/ Humanitarian Coordinators are tasked to ensure that these efforts are integrated with other information management efforts designed to meet humanitarian and development needs.

While most mine action programmes devote considerable resources to the collection of raw data, in many cases little effort is given to the tasks required to transform this data into information. Managers must not only be certain that they are collecting data, but that it is the right data and that it is being properly preserved, analysed and disseminated. Only by completing the information management life-cycle can managers be certain that they are maximising the investment they have made in information management.

Information collection and analysis should address the socio-economic factors and criteria required for improved decision-making, including the prioritisation of mine action activities and support to national humanitarian and socio-economic objectives. National mine action authorities should make every effort to fully involve the mine-affected communities within the general information flow and management process. This can be done through the establishment of community-based reporting mechanisms and commitment to community involvement throughout the national mine action process.

**FIGURE 1** | The information-management cycle
What is critical is that all the available data is regularly entered into a single master database, which is open to all interested parties. This database should contain all of the data relevant to mine action collected at all levels for the entire area being serviced. The establishment and regular update and dissemination of this single master data-set greatly improves the chances that all participants in mine action and the larger humanitarian community will be working from a common picture of both the threat from mines and ERW and the progress being made to address it.

Both the Anti-Personnel Mine Ban Convention and Amended Protocol II call upon States to provide information to the database on mine clearance established within the UN system, now known as E-MINE (the Electronic Mine Information Network), available at www.mineaction.org. Indeed, the role of the UN as a repository of information for mine action is also deemed particularly important. In accordance with its sectoral policy on information management and outreach, the UN:

- Coordinates the collection and dissemination of mine action-related information through the E-MINE website;
- Undertakes to raise public awareness of the mine and ERW problem and efforts being made to address it;
- Coordinates information collection, management and outreach concerning UN mine action; and
- Promotes the use of standardised data collection and management, generally through IMSMA, in mine action programmes.

Thus, in 2001 the UN General Assembly urged Member States and regional, governmental and non-governmental organisations and foundations to continue to extend full assistance and cooperation to the Secretary-General and, in particular, to provide him with information and data, as well as other appropriate resources that could be useful in strengthening the coordination role of the UN in mine action.
THE INFORMATION MANAGEMENT SYSTEM FOR MINE ACTION (IMSMA)

The GICHD has focused its efforts in information management on the development and deployment of the IMSMA. The system is currently in use in more than 40 mine action programmes around the world (see Box 1). Based on requirements submitted by users in the field, the system has been continuously revised and upgraded since its initial release in the summer of 1999 and has become a de facto standard in mine action information management.

In order to maximise the impact of information management in mine affected countries and take advantage of the synergies between IMSMA and other systems, the Centre is working to introduce a broadly based systems approach to the overall management of information of all kinds in mine action. The goal is to assure the successful integration of proven information management techniques, systems such as IMSMA, the maXML data exchange specification, Handheld Data Collection and other tools into day-to-day operations in the field.

In support of this goal the latest version of the IMSMA software (Version 4 or V4) has undergone a complete redesign. The new system combines a full-featured Geographic Information System (GIS) with a powerful relational database to produce an easy-to-use and maintain information management tool. IMSMA V4 provides mine action managers and practitioners with a complete set of up-to-date information management capabilities that can be easily tailored to meet local needs by system users in the field.

The most noticeable of these innovations is the inclusion of a map driven navigation system that significantly improves both data entry and retrieval operations. Based on standard computer technology, V4 of IMSMA is easily customizable in the field. Distribution of the system is managed by the GICHD. It is provided free of charge to mine-affected countries and to the governments of countries actively involved in peace keeping and mine action support operations.

IMSMA V4 can be used to:

> Plan, manage, report and map mine and ERW clearance activities;
> Plan, manage, report and map MRE activities;
> Record, report on, and map victim information; and
> Record, report on, and map socio-economic information.
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HANDHELD DATA COLLECTION TOOLS

In an effort to improve the efficiency and reliability of field data collection activities, the GICHD has been working in coordination with the Swedish EOD and Demining Centre (SWEDEC) and others to develop and field a handheld data collection tool for use with IMSMA. Bundled together with IMSMA, the SWEDEC EOD IS SURVEY handheld field data collection tool allows IMSMA users to complete IMSMA V3 technical survey and minefield survey forms electronically. The data collected using the handheld can then be transferred directly into the IMSMA database.

The field data collection kit includes a pair of laser range finding binoculars which can be used to define minefield or hazardous area perimeter points located up to 1,000 metres away from the system’s GPS or the surveyor’s current position. This means that it is possible to map the perimeter of a suspected or known hazardous area, without endangering the surveyor’s life by entering the suspected area.

BOX 1 | Mine action programmes using IMSMA

As at 1 March 2007

Afghanistan  Ethiopia  Sierra Leone
Albania  Guinea-Bissau  Somaliland
Angola  Iraq  Sri Lanka
Argentina  Jordan  Sudan
Armenia  Kosovo  Tajikistan
Azerbaijan  Lebanon  Thailand
Bosnia and Herzegovina  The former Yugoslav Republic of Macedonia  Uganda
Burundi  Mauritania  Western Sahara
Cambodia  Montenegro  Yemen
Chad  Mozambique  Zambia
Chile  Nicaragua  
Colombia  Peru  
Cyprus  Russian Federation (Chechnya/Ingushetia/Northern Ossetia)
Democratic Republic of Congo  
Ecuador  
Eritrea  Rwanda
Estonia  Serbia
The components of the field data collection kit are as follows (see Figure 2):

1. GPS
2. Laser range finder binoculars
3. Pocket PC running handheld field data collection system
4. Laptop or Desktop running IMSMA
5. maXML Data Transfer tool to transfer data between handheld field data collection tool and IMSMA
6. Digital camera to document field observations

FIGURE 2 | IMSMA handheld field data collection tool kit
Current limitations and awaited improvements

Using the hand held field data collection tool, operators can directly map minefields, including technical survey reference points, landmarks, benchmarks and minefield perimeters. The current system does not support the recording and transfer of the coordinates of single points (ERW spots for example) or lines to IMSMA.

The new version of IMSMA (V4), linked to a more powerful survey tool, includes these capacities and also the ability to record information on any IMSMA-generated data collection form. This update to the system makes it possible for operations staff to complete all of their data collection tasks using the handheld device and eliminates the need for the use of cumbersome and error prone paper forms. This updated and improved data collection tool began preliminary field testing in mid-2006 and was due to be deployed operationally from mid-2007.

Current deployments

The handheld survey tool has been in use in Chile since March 2004. Deployments of the system have also been successfully completed in Albania, in a joint programme in support of the mine action activities in Ecuador and Peru, and in Lebanon. The deployment and training in each of these locations consisted of a combined two-week technical and field training programme. Upon completion of this two-week deployment period local mine action programme staff members were able to integrate the system into their data collection activities as shown in the following photos. Data collection activities are still being performed using the system in Ecuador, Chile and Lebanon.
ENDNOTES

1 Article 6, paragraph 6, Anti-Personnel Mine Ban Convention.

2 Article 11, paragraph 2, Amended Protocol II to the Convention on Certain Conventional Weapons.

3 See for instance Mine Action and Effective Coordination: The United Nations Inter-Agency Policy, Endorsed by the Inter-Agency Coordination Group on Mine Action on 6 June 2005, para. 76.