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Information Management for Mine Action

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Foreword

International standards for humanitarian mine clearance programmes were first proposed by working groups at an international technical conference in Denmark in July 1996. Criteria were prescribed for all aspects of mine clearance, standards were recommended and a new universal definition of “clearance” was agreed. In late 1996, the principles proposed in Denmark were developed by a United Nations-led working group and the International Standards for Humanitarian Mine Clearance Operations were developed. A first edition was issued by the United Nations Mine Action Service (UNMAS) in March 1997.

The scope of these original standards has since been expanded to include the other components of mine action, in particular those of mine risk education and victim assistance, and to reflect changes to operational procedures, practices and norms. The standards were redeveloped and have now been named International Mine Action Standards (IMAS).

The United Nations (UN) has a general responsibility for enabling and encouraging the effective management of mine action programmes, including the development and maintenance of standards. UNMAS, therefore, is the office within the United Nations responsible for the development and maintenance of IMAS. IMAS are produced with the assistance of the Geneva International Centre for Humanitarian Demining (GICHD).

The work of preparing, reviewing and revising IMAS is conducted by technical committees, with the support of international, governmental and non-governmental organisations. The latest version of each standard, together with information on the work of the technical committees, can be found at <http://www.mineactionstandards.org/>.

IMAS are reviewed at least every three years, to reflect developing mine action norms and practices and to incorporate changes to international regulations and requirements.

Introduction

Information management is an integral part of all activities in mine action. It refers to the process of continuously specifying information requirements, and the collection, analysis and provision of timely information to the relevant mine action stakeholders. This includes support to non-mine action organisations such as donors, politicians, legal staff, researchers and actors in other development activities. Efficient information management ensures that mine action managers and other stakeholders have access to optimal information when making decisions.

To be efficient, information management requires the close collaboration of all parties in a mine action programme. Transparent information management makes programmes easier to manage and the management accountable. It enables monitoring, evaluation and comprehensive quality management.

This IMAS provides general guidelines for information management in mine action programmes. This document will assist national mine action authorities and mine action centres in the development and implementation of the national information management policy, national standard and Standard Operating Procedures (SOPs).

Information management for mine action

1. Scope

This standard establishes general principles and provides guidance for effective information management in mine action programmes.

2. Normative references

A list of normative references is given in Annex A. Normative references are important documents to which reference is made in this standard and which form part of the provisions of this standard.

3. Terms and definitions

A complete glossary of all the terms, definitions and abbreviations used in the IMAS series of standards is given in IMAS 04.10.

In the IMAS series of standards, the words 'shall', 'should' and 'may' are used to indicate the intended degree of compliance. This use is consistent with the language used in ISO standards and guidelines:

- 'Shall' is used to indicate requirements, methods or specifications that are to be applied, in order to conform to the standard.
- 'Should' is used to indicate the preferred requirements, methods or specifications.
- 'May' is used to indicate a possible method or course of action.

The term 'Information Management' refers to the on-going specification of information requirements, its collection and analysis followed by the dissemination of relevant information to relevant stakeholders in a timely manner. The term 'Information system' refers to those procedures, data, software or media that are used to gather, analyse and present information.

The term 'Data' refers to information in raw or unorganised form.

The term 'Information' refers to data that has been processed, organised and presented in a way that makes it useful for decision-making.

The term 'Knowledge' refers to the result of combining data, information, training and experience.

The term 'GIS' refers to Geographic Information System. It is an organised collection of computer hardware, software, geographic data and personnel designed to efficiently capture, store, update, manipulate, analyse and display all forms of geographically referenced information.

Note: GIS allows a user to view multiple layers of data based on their geographic distribution and association. GIS incorporates powerful tools to analyse the relationships between various layers of information.

The term 'Stakeholder' refers to a person, group, organisation or governmental body that has a direct or indirect stake in a mine action programme. A stakeholder can affect or be affected by the mine action activities and policies.

The term 'IMSMA' refers to the Information Management System for Mine Action.

4. Purpose of information management in mine action

This IMAS provides general principles and guidelines for information management (IM) in mine action programmes. The standard will assist NMAA and MAC to develop and implement national IM standards and standard operating procedures (SOPs).

5. Information management prerequisites

5.1. General

Effective IM requires some prerequisites, which may increase when IM activities are more complex. As a minimum, the following are prerequisites for the establishment and flow of IM in a mine action programme (MAP):



5.2. Document management

The NMAA should establish and maintain a document management system with the following features:

- Digital structure – a uniform and standardised digital structure with relevant file naming guidelines and metadata, capable of managing digital documents related to mine action activities e.g. reports, photos and videos.
- Paper structure – a uniform and standardised paper filing structure that mirrors the digital one.

Note: The document management system should enable tracking of who has edited what documents and which version is the most recent one.

5.3. Record management

The NMAA should establish and maintain a record management system that is capable of meeting the following requirements:

- managing operational and secondary data;
- priority-setting and allocation of operational resources;
- producing an overview of the operational progress and resource allocation;
- accessible for use by operational and management staff; and
- adjustable to the MAP needs and compatible with other information systems.

Note: The NMAA or the MAC should define the scope and responsibilities of the IM system to achieve optimum operational efficiency. Examples of extended responsibility may include advanced human resource management and cost efficiency studies of mine action activities..

Note: IMSMA is the most prevalent record management system used in mine action. It covers the entire mine action information management cycle and is designed to be flexible, so allowing changes to the required processes. IMSMA is currently in use in virtually all mine action programmes around the world and is the UN's preferred information management system for mine action. The system is increasingly used for operational management in humanitarian activities outside mine action.

5.4. Web management

The NMAA should ensure that there are policies and methodologies in place that enable the presentation of MAP activities via web technologies e.g. internet, intranet, and social networks.

5.5. IM human resources

The NMAA should ensure that there are the following staff positions as a minimum:

- IM Officer – Responsible for IM activities, as mentioned in clause 5.7 and 5.9.
- System Administrator – IT and communication infrastructure, as mentioned in clause 5.2, 5.3, 5.4 and 5.6.
- GIS Officer – GIS, as mentioned in clause 5.8.

5.6. IM equipment

The NMAA should ensure that:

- computer systems used by staff meet the minimum specifications of the IM software;
- software is licenced and there are appropriate peripheral systems such as printers and scanners;
- IT equipment is protected from power spikes, dust and other damage;
- a data storage infrastructure is established and protected with appropriate policies and procedures for data security, backup and disaster recovery;
- staff have access to means of communication e.g. internet and e-mail; and
- the staff working environment meets basic ergonomic principles.

5.7. IM knowledge

The NMAA should ensure that IM staff are given the opportunity for professional development and that they receive adequate training in:

- information systems used in the programme, including system administration;
- data analysis and statistics;
- GIS; and
- mine action operations.

5.8. GIS management

The NMAA should ensure that:

- GIS software is available to the IM staff. The software should be either integrated in the record management system or work as a stand-alone application;
- geospatial data is available and accessible - either locally or through the internet;
- MAC should ensure that spatial data standards are established regarding coordinate and measurement units and symbology; and
- data collection forms contain the spatial data required to produce the expected output.

5.9. Quality management

The NMAA should ensure that:

- uniform and standardised data collection forms relevant to the stated business processes are established;
- fields on the data collection forms are properly defined, and there are established policies and standards for data and information exchange within the programme and with other external stakeholders;
- there are established data quality management systems at all phases of IM from source to the final receivers; and
- NMAA may ensure that business processes are properly mapped.

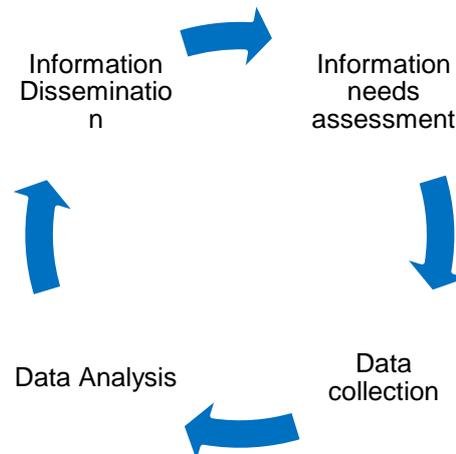
6. Information management cycle

6.1. General

The IM cycle ensures a proactive approach to IM activities by anticipating stakeholder requirements and planning for them. The IM cycle, illustrated in the figure below, is the process of information needs assessments, data collection, data analysis, and information dissemination. The IM cycle should be based on the following:

- a) Transformation: continued transformation of data to information and information to knowledge for decision-making.
- b) Efficiency: the management of data and information is done with a proactive approach in which, the IM staff based on their experience, foresee the requirements and are ready to address them in a timely manner.
- c) Inclusiveness: successful implementation of the cycle depends on the active involvement of operations, management and other stakeholders.
- d) Quality: data is checked and verified for accuracy and for timeliness and organised for analysis.
- e) Consistency: disaggregated data collection, in combination with agreed technical definitions of key terms, will ensure objective and repeatable results to analytical queries. This will enable the formulation of informed decisions that are transparent and accountable.
- f) Sharing: information is disseminated to the stakeholders, within and outside the mine action programme, in a standardised way and in appropriate formats. Sharing

information with other stakeholders will encourage them to further participate in the planning, implementation and follow-up process.



6.2. Information needs assessment

The analysis of information should involve recurring assessment and discussion with each of the principal stakeholders.

The discussion should result in agreement on the:

- output of information required by each stakeholder, today and in the future;
- data that needs to be collected, at which frequency, and in what format and medium;
- processes that need to be in place to ensure the quality of the incoming data;
- ways the incoming data will be analysed to ensure consistency in the output information;
- formats and means of internal and external information dissemination and reports; and
- qualitative and quantitative key performance indicators that are used for the MAP.

6.3. Data collection

The data collection phase identifies where and how to gather the required data, and how to validate it. It should be designed to meet the intended use of the data, and consideration should be given to ethical principles such as maintaining respect for confidentiality and privacy.

The NMAA should ensure that data collection meets agreed policies on:

- a) disaggregated data collection, including sex and age when relevant;
- b) the uniformity and standardisation of the data collection processes;
- c) inventory of information management sources including details on the type of data, collection methods, and the format and means of data provision;
- d) quality management during the data collection process, including the use of standardised forms and data entry fields, as well as the active involvement of operational staff during the data reconciliation and approval process;
- e) ensuring consistency during data gathering by implementing methodologies and relevant criteria for data collection standards, including measurement units, equipment, means of recording, language and input method;
- f) the validation and verification of data to ensure data accuracy, completeness, consistency and links to other existing information; and
- g) the classification of information sources and the reliability of information.

Additional data collection requirements are specified in the IMAS series. See IMAS in 08.10 for non-technical survey, IMAS 08.20 for technical survey, IMAS 09.10 for clearance requirement, IMAS 09.11 for battle area clearance, IMAS 08.30 for post-clearance documentation, IMAS 07.40 on monitoring, IMAS 12.10 on mine/ERW risk education, and IMAS 10.60 on reporting and investigation of demining accidents.

6.4. Data analysis

Objective and repeatable data analysis relies on there being IM policies and standards that reduce the subjectivity and increase the consistency of the output information.

The NMAA should ensure that policies and standards for analysis include:

- technical definitions of key terms such as *victim*, *area cancelled*, *area released*, *area cleared in square metres*. This may be a textual statement of what is to be included in statistics and what is not;
- methodologies with relevant criteria for managing low quality information such as duplicate, incomplete, out-of-date or non-primary source information;
- methodologies for grouping and structuring data by using summarised statistical reports and maps;
- policies and methodologies for cross-referencing information from mine action and from other sources;
- methodologies and relevant criteria for identifying trends based on established indicators; and
- methodologies involving relevant stakeholders during the process of analysing the information, in order to take advantage of their experience and personal interpretation.

6.5. Information dissemination

Information dissemination involves the distribution of information to internal and external users so that it can be readily and easily used by stakeholders.

The national standards for each country should clearly define the processes of information sharing and the methods of communication, bearing in mind that the types of information and their dissemination formats and frequencies may differ from one stakeholder to another.

As a minimum, the following should be taken into consideration when planning for information dissemination:

- a. to which stakeholders the information will be distributed;
- b. the types of information each stakeholder will receive;
- c. how the information is disaggregated, e.g. summary, statistics and or maps; and
- d. the frequency of sharing the information, e.g. yearly, quarterly and or monthly.

Further considerations when disseminating information include:

- relevance e.g. level of details and specifics to stakeholder needs
- security e.g. data discretion policies of the involved stakeholder; and
- sensitivity e.g. security issues relevant to data disclosure.

MAC IM standard operating procedures should include the templates that are used to share the information with stakeholder groups. These should take account of the requirements of the

international humanitarian treaties related to mine action to which the Host Nation is a Party e.g. APMBC, CCM and CCW;

7. Responsibilities and obligations

7.1. National mine action authority

The National mine action authority should:

- a) Develop and implement IM policy, standards and regulations for the management of information. These standards and regulations should be consistent with this IMAS, and other relevant national standards.
- b) Establish information management systems that allow effective, efficient and timely transfers of data and information between mine action organisations, donors, relevant national bodies, and other stakeholders.
- c) Ensure that IM sections within mine action programmes have appropriately qualified personnel, equipment and training.
- d) Ensure that the IM section of the programme has developed clear and appropriate SOPs for information management.
- e) Ensure that all mine action information gathering activities are coordinated to avoid duplication of effort, so maximising the use of resources and minimising survey fatigue.

7.2. Mine Action Centre

The Mine action centre should:

- a) Develop programme or country-wide IM SOPs that clearly define the type, format and frequency of the information requirement in accordance with the national standards.
- b) Establish at least one IM section with qualified personnel, and equipment in accordance with the prerequisites of the national standards.
- c) Provide training to operational and IM personnel of mine action organisation covering information management.
- d) Have a proactive role in all information management activities.
- e) Provide proposals and suggestions for the amendment of the national mine action standards for information management.
- f) Work for decreased dependency on particular staff members by transferring knowledge to other members of the MAC.
- g) Ensure a streamlined data and information flow by applying the agreed policies and by utilising existing IM systems, standards, guidelines, procedures and routines.
- h) Implement data quality management procedures at all stages of the IM cycle.
- i) Be able to identify possible Information Management shortcomings in the MAP and notify the relevant operational or management staff in due time.

7.3. Mine action organisation

The Mine action organisation should:

- a) Develop and implement appropriate information management SOPs in accordance with the requirements of the mine action centre and the national standards of the NMAA.
- b) Utilise the existing IM capacity within the mine action programme in order to plan, implement and follow up on operational activities.
- c) Participate in quality management procedures throughout the entire IM cycle.
- d) Ensure the involvement and training of IM staff in operational activities.
- e) Provide feedback, verification and correction of information whenever they notice any errors or inconsistencies.

Annex A (Normative) References

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of the standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of the standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid ISO or EN:

- a) IMAS 04.10 Terms and definitions
- b) IMAS 08.10 Non-technical survey
- c) IMAS 08.20 Technical survey
- d) IMAS 09.10 Clearance
- e) IMAS 09.11 Battle area clearance
- f) IMAS 08.30 Post-clearance documentation
- g) IMAS 07.40 Monitoring
- h) IMAS 12.10 Mine/ERW risk education
- i) IMAS 10.60 Reporting and investigation of demining accidents

The latest version/edition of these references should be used. The GICHD holds copies of all references used in this standard. A register of the latest version/edition of the IMAS standards, guides and references is maintained by GICHD, and can be read on the IMAS website (<http://www.mineactionstandards.org>). National mine action authorities, employers and other interested bodies and organisations should obtain copies before commencing mine action programmes.

