

Sudan National Mine Action Standards – SNMAS 07.03

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Mine Action Monitoring

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1. Introduction

Monitoring of mine action activities forms a crucial part of mine action, it includes visiting mine action worksites and understanding of the wider scope and practice through the collection and analysis of data and information about the performance of mine action management processes and their products, and application of monitoring principles and processes to all aspects of mine action. This standard also addresses Quality Control (QC) as monitoring of mine action product performance and provides specific guidance on actions to check the quality of cleared land and other mine action products.

1.1. Monitoring and Quality Management

Monitoring is an essential element of any effective quality management system (QMS) as well as within strategic, operational, project, programme, safety, environmental and results-based management systems.

At the heart of quality management (QM) is the concept of continual improvement, captured in the Plan – Do – Check - Act cycle. Monitoring is integral to the ‘check’ stage of the cycle. Monitoring represents the primary means of ‘closing the loop’ to ensure that needs and opportunities for improvement are identified and addressed, and that authorities and managers have the information they need to take timely and effective, evidence-based decisions to support the achievement of strategic and operational objectives.

Definitions of monitoring emphasize that it is a continuing function, that it relies on systematic collection of data in relation to specified indicators, and that its purpose is to provide management with information about progress, achievement of objectives and compliance with policies, strategies and SNMAS. Monitoring is also described as determining the status of a system, a process or an activity; what is to be monitored, the methods for monitoring, measurement and analysis, when monitoring should be performed and how results will be analyzed and evaluated all need to be defined. This standard addresses all aspects of establishing, implementing and using a mine action monitoring system.

1.2. Monitoring, Quality and Results-based Management (RBM)

QM focuses on the products and services delivered by mine action organizations. The results, outcomes and impacts associated with delivery of those products are equally important. This SNMAS addresses the monitoring of processes and products, NMAC and mine action organizations shall make use of similar principles to determine the extent to which mine action projects and programmes lead to desired results, outcomes and impacts. SNMAS 03.01 for planning and prioritization should be used to monitor the extent of meeting national planning and prioritization requirements in Sudan, which emphasizes on the desired results to be achieved and the impact of mine action interventions. Donors increasingly want to understand the difference that their funds have made to the lives of beneficiaries; RBM provides a way to do this.

2. Scope

This SNMAS describes the implementation of a process of monitoring mine action organizations and their activities by NMAC. Mine action organizations shall also adhere to the requirements of this SNMAS and the principles of monitoring for conducting internal monitoring of their management system and activities.

3. References

IMAS 07.40, IMAS 07.12, SNMAS 07.01 and SNMAS 07.02

4. Terms and Definitions

The term monitoring refers to:

“Systematic collection of data on specified indicators to provide management and the main stakeholders of an on-going project, programme or policy with indications of the extent of progress and achievement of objectives, and progress in the use of allocated funds.” IMAS 4.10 based on OECD/DAC definition.

Monitoring means “determining the status of a system, a process or an activity” to determine the status, there may be a need to check, supervise or critically observe.” ISO 9001:2015.

The term Observation refers to:

Observation is used in reference to Quality Management System. Observation is the identification of area for improvement, mostly addressed through preventive actions. The observation is raised where a QM Inspector or auditor encounters or identifies a situation or performance that is felt to be a weakness in a process or procedure, or situation to improve upon, but not strong enough and have no reference to warrant nonconformity. An observation is not nonconformity at the time of the monitoring, audit or inspection, but may become or give raise to non-conformance, if no preventive action is taken. Mine Action organizations shall take action on observations in order to prevent occurrence of potential nonconformities.

The term Nonconformity refers to:

Nonfulfillment of requirement, in terms of mine action it refers to nonfulfillment of a requirement or requirements of Standards, policy, procedures terms of contracts and other applicable regulations and agreements.

5. Monitoring within the Context of Mine Action

5.1. General Context

The overall responsibility for external monitoring rests with the NMAC as a regulating, coordinating and external Quality Management body for the mine action programme in Sudan. The responsibility for internal monitoring rests with the mine action organizations.

The context of mine action includes all aspects of the external and internal factors, circumstances, conditions, obligations, expectations and environment relating to mine action in Sudan. For detailed requirements about mine action context; refer to SNMAS 07.01.

5.2. Monitoring within the Quality Management System (QMS)

The overall aim of mine action quality management system (QMS) is to provide confidence to the beneficiary, the mine action organization, the NMAC, the donors and to other interested parties that quality requirements have been met or exceeded, and that mine action activities, products and services are fit for purpose.

Monitoring is a mandatory function within quality management system and is the primary means by which mine action senior management, stakeholders and interested parties receive information about the performance of mine action organizations, the processes that they use, the products and services they deliver, and the results of their activities. **The information provided by monitoring process supports corrective action, preventive actions, management review processes and continual improvement.**

Monitoring of processes is an important part of the quality assurance (QA) function, which includes all proactive actions taken to increase confidence that requirements will be met. Monitoring of products performance is a quality control (QC) function; checking that the product requirements have been met.

Monitoring shall address the effectiveness, efficiency and relevance of mine action activities which includes the extent to which they achieve planned purposes and objectives, the relationship between achievement of objectives and use of resources, and likelihood of delivering the desired results for beneficiaries, respectively.

As stated in SNMAS 07.02 of mine action accreditation; the results of monitoring shall also be used to inform the process of accreditation, in particular the renewal and extension of accreditation of an organization.

Mine action monitoring process shall focus on, and address the following aspects of mine action in Sudan:

- a) The requirements of Sudan strategic goals and objectives; the structure and implementation of monitoring should be informed by Sudan National Mine Action Strategic Plan (NMAASP), APMBC extension request and have the capacity to deliver information relevant to strategic decision-makers and shall also include assessment of performance, achievements and progress against strategic goals, objectives and targets.
- b) Safety and environmental protection aspects, as directed by the NMAC with technical support of UNMAS.
- c) The extent to which the requirements of APMBC and Sudan NMAASP, national land release policy and quality policy are satisfied.
- d) Provision of information on the application of mine action standards and procedures, and provide inputs for any changes and amendments.
- e) Understanding the requirements of mine action stakeholders about the monitoring information, and that monitoring appropriately and effectively satisfies those requirements. Provide feedback to the mine action organizations that is necessary for their senior managers to understand the performance of their organizations.
- f) Gender and diversity consideration; as an important aspect in success of mine action sector and as the stakeholders' requirement. Monitoring process should include the collection, analysis and reporting of data relating to gender and diversity aspects of the Sudan MAP.
- g) Integrated into an effective and efficient information management system (IMS).
- h) Risk management; including identification, analysis, evaluation, treatment and review functions.

6. Mine Action Monitoring Requirements

6.1. General

NMAC with technical support of UNMAS, and mine action organizations as part of their internal monitoring process shall determine through separate procedures:

- 1) What needs to be monitored;
- 2) Methods for monitoring, and analysis as necessary to ensure valid results;
- 3) When and how monitoring shall be performed;
- 4) When and how the results of monitoring shall be analyzed; and
- 5) How monitoring results will be displayed and disseminated.

As minimum the NMAC external monitoring shall address and focus on the following aspects of mine action organizations in Sudan:

- a) Management processes and procedures; including the capacity of mine action organizations to manage mine action operations in the field;
- b) Support services including logistics, finance and administrative arrangements and processes;
- c) Safety measures including explosive storage areas, medical facilities, equipment maintenance and communication;
- d) Training programs and capacity building;
- e) Planning and prioritization process in line with the requirements of SNMAS, national plans, strategies and international obligations;
- f) Community liaison and involvement of people including men, women and children in land release process, including considering their priorities;
- g) Information gathering, recording and reporting;
- h) Demining worksites and supporting workplaces;
- i) Field risk assessment and mitigation measure in each land release task;
- j) Survey and land release operations and practical activities in the worksite;
- k) Practical skills and performance of the demining staff;
- l) Performance of demining tools and equipment;
- m) Emergency evacuation drills and casualty evacuation plan;
- n) Internal monitoring and QC records, and action on NCs;
- o) Controlled demolitions and explosive management and record in the field;
- p) Use of IMSMA standard forms, related records and reports;
- q) Product performance and conduct of sampling.

- r) Daily, weekly and monthly reports.

As minimum the following aspects shall be monitored in Mine/ERW Risk Education:

- a) The progress of MRE activities against stated objectives;
- b) MRE sessions and activities to ensure they are consistent with SNMAS, organization's SOPs, plan and the national strategy for programme activity;
- c) The level of community involvement including women, men and children within activity and assessing its impact on behavior changes;
- d) Identification of at risk group in each community in accordance with their involvement and planning and undertaking MRE sessions objectively to address the risk to the target group;
- e) Documentation, including Action plan, update MRE Kit and materials and MRE guidelines approved by NMAC;
- f) MRE Personnel and volunteer training activities;
- g) Safety of the field staff and the level of their training in field safety procedures;
- h) Perception of community of the MRE activities and programs by at risk communities and behavioral change;
- i) Changes in the make-up of the target risk group; and
- j) Recording and reporting of MRE progress and achievements.

The monitoring process shall mainly be focusing on physical observation of all the aspects listed above. Monitoring can be announced and unannounced, or combination of both, but unannounced monitoring should be a preferred method to be undertaken by NMAC QM officer. The sampling should be part of monitoring as inspection of the outputs of the mine action activities including but not limited to measuring product performance or sampling of cleared area, reports, final result of trainings, and interview with communities and trainees. Mine action products are detailed in section 8 of this standard.

The results of monitoring shall be entered to IMSMA on monthly basis and analyzed by NMAC QM department and communicated to all NMAC departments, regional offices and senior managers. QM statistics shall be developed by QM department and shared with NMAC senior management, regional offices, departments, UNMAS and related stakeholders and donors as requested; on quarterly basis.

6.2. Purpose of Monitoring

Monitoring is conducted to provide senior management of Sudan mine action programme with reliable evidence-based information; the analysis and statistics about the performance of organizations; regarding the strategic and operational goals and objectives. Monitoring is used to inform decisions about future planning and the continual improvement of mine action, including:

- a) The extent of compliance with the requirements of SNMAS, policies, SOPs and terms of the contracts;
- b) The performance of mine action organizations in terms of the efficiency and effectiveness of processes, the outputs of the processes and the results, outcomes and impacts;
- c) Progress towards achievement of Sudan NMASP goals and annual operational plan's objectives within the boundaries of financial budgets;

- d) The degree to which Sudan strategic and operational planning and prioritization are likely to achieve the desired results for beneficiaries;
- e) The performance of the mine action organizations in relation to gender and diversity.

6.3. Conduct of Monitoring

Mine action monitoring shall be comprehensive and deliver sufficient information to satisfy the needs of mine action stakeholders within the Sudan mine action programme. Monitoring shall encourage initiative and innovation within Sudan MAP and remove burdens from organizations that affect their efficiency. Efficient monitoring, as part of NMAC and organizations' QMS, should enhance the overall success and efficiency of the mine action plans and strategy.

NMAC shall ensure that the monitoring process is:

- a) Independent, objective and fair;
- b) Systematic and evidence-based;
- c) Implemented with due professional care and effort;
- d) Producing valid information on which senior management at NMAC and organizations can decide and take actions to improve operations and performance;
- e) Follow the PDCA concept for continual improvement;
- f) Properly planned and managed;
- g) Appropriately recorded and stored for future reference;
- h) Providing facts and evidence to satisfy decision-making;
- i) Well communicated to the stakeholders.

NMAC QM and Operations officers should be competent, free from bias and conflict of interest and maintain confidentiality and discretion with organizations subject to monitoring. NMAC QM and Operations staff those conduct monitoring on mine action should be competent in following:

6.4. Collection, Analysis, Reporting and Recording of Data

Effective monitoring relies upon access to consistent, reliable and comprehensive data about the performance of mine action organizations and the processes and outputs for which they are responsible. NMAC and mine action organizations shall:

- a) Identify indicators relevant to the effectiveness and efficiency of mine action activities;
- b) Specify information requirements in relation to indicators for the performance of process and outputs;
- c) Ensure consistency of data and information;
- d) Ensure data and information are properly stored in IMSMA for future feasible access; and
- e) Ensure that data and information are made available to interested parties.

See Annex A to this SNMAS about the indicators relevant to the effectiveness and efficiency of mine action activities.

6.4.1 Collection of Monitoring Data

It is the responsibility of QM Officers in regional offices to collect and report monitoring data to NMAC QM department which should be checked and submitted to IMSMA for recording in national database on monthly basis. This data shall include internal monitoring and sampling data submitted by mine action organizations to related regional offices. There should be clear indication of internal and external monitoring data that is subject to check and recording in IMSMA.

Additional information about the collection of data through site monitoring visits is provided in Annex A to this SNMAS.

6.4.2 Analysis, Reporting and Recording of Monitoring Data

The results of monitoring should be analyzed by NMAC QM department and shared with NMAC and mine action senior management. As a minimum, monitoring shall deliver results that indicate:

- a) Conformity of mine action services and outputs to the requirements of SNMAS, Policies, SOPs and Terms of Contracts;
- b) Customers and stakeholders' satisfaction;
- c) Consideration of gender and diversity requirements;
- d) Conformity and effectiveness of the established QMS within NMAC and mine action organizations;
- e) Successful implementation of planning, and progress towards strategic goals and operational objectives;
- f) The performance of mine action processes and their outputs;
- g) The performance of mine action assets; and
- h) Opportunities for improvement.

Monitoring process shall include adequate detail and sufficient records to identify and trace relevant performance measures to each mine action organization. There should be a comprehensive report of monitoring data as QM statistics, properly communicated to all mine action stakeholders on quarterly basis. Monitoring data shall be recorded in IMSMA and made available for analysis, reporting and communicating with relevant stakeholders as needed.

6.5. Key performance indicators (KPIs)

Key performance indicators (KPIs) are measurable values used to demonstrate how effectively mine action organizations are achieving operational objectives.

Relevant indicators include:

- a) Nonconformity rates by process, output in relation to defined requirements;
- b) Compliance rates in relation to SNMAS, Policies and SOPs;
- c) Progress rates against defined deadlines, targets, budgets and benchmarks as per the terms of contract;
- d) Asset performance;
- e) Productivity rates;
- f) Missed rates; and
- g) Efficiency rates in relation to the results achieved.

Mine action senior management in Sudan, should identify KPIs relevant to their own functions and responsibilities. The KPIs can be part of Balanced Scorecards for assessing and measuring the performance of mine action organizations. KPIs should be properly communicated and understood by QM and Operations staff of NMAC to ensure the consistency, comparability and validity of KPIs.

6.6. Communication of Monitoring Results

The results of monitoring should be displayed through tables, graphs or charts and descriptions. This will allow and help senior management in NMAC and mine action organizations to identify and understand trends, draw comparisons in performance over time, and identify needs or opportunities for continual improvement.

As stated above, the QM statistics should encompass all the requirements and communicated to mine action stakeholders in Sudan.

6.7. Competence, Training and Awareness

The primary purpose of monitoring is to provide required and reliable data and information to senior management of NMAC and mine action organizations to maintain confidence, identify areas for continual improvement. All the decisions for continual improvement shall be based on reliable data and information as valuable facts and evidence to support decision making and the continual improvement should follow the cycle of Plan-Do-Check-Act.

6.7.1. Competence

In order to carry out their functions effectively and efficiently, mine action QM and Operations Officers conducting monitoring shall be competent in following aspects:

- 1) Mine Action Standards:
 - a) Understand Sudan NMAS and make references to them during monitoring and sampling process.
 - b) Review and recommend fact-based changes to the SNMAS.
 - c) Communicate SNMAS to the mine action organizations.
 - d) Assess compliance of organizations' SOPs to SNMAS and provide feedback.
 - e) Present and describe the requirements of SNMAS on certain technical issues during the operations coordination and QM related meetings with mine action organizations.
 - f) Understanding International Mine Action Standards.

- 2) Mine Action Management:
 - a) Understanding vision, mission, quality policy, core process, NMA SP, and Sudan's extension request to the state parties as part of the APMBC.
 - b) Making fact-based decisions;
 - c) Leading teams to achieve expected results.
 - d) Effectively negotiating needs and requirements with a range of internal and external customers and stakeholders.
 - e) Identifying areas for improvement in NMAC processes.
 - f) Effectively building working relationship within and outside the organization.
 - g) Negotiating effectively to gain agreement and commitment to ideas and actions for realizing results of mine action activities and operations.
 - h) Effectively articulating and communicating key messages about the functions and performance of NMAC.
 - i) Communicating and responding appropriately to internal and external stakeholders.

- 3) Planning and Prioritization:
 - a) Oversight of mine action plans including regional operational, monitoring and QC and site operational plans; based on national and communities' priorities.
 - b) Management and oversight of the implementation of mine action plans and reporting on the progress to the senior management.
 - c) Evaluating organizations plans based on approved proposals, statement of work and available resources.

4) Mine Action Operations:

- a) Understanding the application of land release standards in operations.
- b) Conduct, apply, monitor and evaluation of non-technical and technical survey operations.
- c) Provision of advice to the field operators regarding application of combined assets for land release operations.
- d) Management and oversight of the implementation of non-technical and technical survey operations in the field.
- e) Provision of advice on efficiency and effectiveness of land release operations based on analysis of NTS and TS information.
- f) Understanding the application of all reasonable effort as part of land release operations, within the context of Sudan mine action programme.
- g) Application of MRE and VA SNMAS and Procedures in operations.
- h) Monitoring and evaluation of RE and VA activities.
- i) Assessment and identification of at risk group for RE activities.
- j) Provision of inputs to the evaluation that may take place.
- k) Understanding the needs and expectation of PWD and assess the response provided.
- l) Assessment of promotion of safe behavior within communities, through data collection and analysis.

Depending on the specific activities and areas subject to monitoring, QM and Operations Officers should have knowledge of:

- 1) National laws and regulations;
- 2) Mine action contracts;
- 3) Worksite safety and working conditions requirements including Field Risk Assessment (FRA);
- 4) Quality concepts and terminology used in mine action;
- 5) QM principles and their application; and
- 6) Quality tools and their application.

6.7.2. Training

QM and Operations Officers should receive training and demonstrate adequate aptitude, skills and knowledge, in monitoring processes, procedures, techniques and recording, prior to conducting monitoring activities. Additional training should be provided to when there are changes in the monitoring process, when there are significant changes in applicable standards, and at appropriate intervals, to ensure that their competence to perform monitoring tasks is maintained.

6.7.3. Awareness

The NMAC should ensure that there is adequate awareness of the monitoring process, its purpose, methods and principles. The awareness should be raised to ensure that the sole purpose of monitoring is to continually improve mine action activities, outputs and stakeholders satisfaction. Mine action organizations and their teams should be open and consistent in their provision of information and access of NMAC QM and Operations staff, to the worksite locations.

7. Monitoring of Mine Action Processes

Mine action comprises of different processes; as such appropriate data shall be collected and analyzed to allow senior management of NMAC to:

- 1) Understand the extent of relevance, effectiveness and efficiency of key processes;
- 2) Identify and respond to those parts of processes that can be improved;
- 3) Compare process performance between organizations; and
- 4) Reflect the results of process monitoring in future planning.

7.1. Identifying and Describing Key Processes

NMAC and mine action organizations shall identify, map and document key processes with appropriate performance indicators. Key processes are those that are delivering mine action services and product to the customers and end users, or directly support processes that deliver final outputs and products to mine action customers.

Mine action services and outputs that are released to the customers and users should be subject to product monitoring or QC sampling.

7.2. Processes and Key Performance Indicators

KPIs should be established for key processes to indicate:

- 1) Process effectiveness; the extent to which the process achieved stated results successfully;
- 2) Process efficiency; the resources used within the process in relation to the results achieved.

7.3. Compliance with SNMAS, Policies and Procedures

Monitoring should be established in such a way that the compliance or non-compliance can be referred to SNMAS, Policies, SOPs and terms of contracts.

7.4. Progress Monitoring

Progress of mine action activities against operational planned deadlines and targets shall be monitored. The deadlines are mainly set within the annual operational plan, based on the terms of contact and site operational plans approved by NMAC sub-offices and Operations department.

7.5. Working Environment

Monitoring process should include appropriate actions to confirm that the working environment remains suitable for the implementation of efficient and effective mine action activities in compliance with SNMAS, Policies and SOPs.

7.6. Methods of Process Monitoring

As minimum the following methods should be considered during the monitoring of process monitoring:

- 1) Review of a mine action organization's documentation including SOPs relating to the processes, plans of implementation, reports of progress and completion and records of outputs of the processes;

- 2) Analysis of nonconformity records including references to related SNMAS, SOPs and other regulatory documents in relation to the application of the processes;
- 3) Analysis of data provided by mine action organizations relating to their processes; and
- 4) Site visits to observe mine action activities, related practices and techniques.

7.7. Frequency of Monitoring

In order to build and maintain the confidence of mine action senior management, customers and stakeholders in the performance of mine action organizations and mine action products and services; monitoring of mine action activities should be conducted in reasonable intervals. Monitoring activity shall not be so interfering that places such demands on a mine action organization to affect operational efficiency.

Identification of nonconformities as part mine action activities may reasonably justify frequent observation of the activities, processes and their outputs, but any nonconformity shall always be addressed through appropriate management action with allocating required time.

The frequency of on-site monitoring may be adjusted in light of results of previous monitoring findings and the experience of the mine action organization in relation to mine action activities. The following applies:

- 1) As minimum on-site monitoring visits shall not be less than three visits in each single task with duration of up to one month; at the start, middle and at the end;
- 2) Each land release task shall be subject to completion monitoring;
- 3) The teams with identified nonconformities shall be monitored frequently; there should be re-audit as per the intervals agreed for corrective and preventive actions between NMAC and mine action organization.

The following regimes of monitoring should be applied:

Tightened monitoring regime, when:

- 1) A mine action organization is newly accredited;
- 2) There have been significant changes in the management or structure of a mine action organization;
- 3) There are identified nonconformities; or
- 4) As re-audit to ensure appropriate correction to an identified nonconformity.

Tighten regime of monitoring should be covering all aspects of mine action operations management and practical activities, at least three times a month.

Normal monitoring regime:

- 1) As minimum, the operations management should be monitored once two month and the on-site activities twice a month.

Normal monitoring regime should be considered, when a mine action organization has demonstrated a consistent level of acceptable performance over a period of monitoring and there is no changes in the scope of activities of the mine action organization.

8. Monitoring of Mine Action Product Performance

8.1. General

Monitoring of mine action products performance refers to the quality control of mine action products and services. Quality control is the process of checking, inspection or measuring of the mine action products to ensure that they are produced as per the requirements of SNMAS, SOPs and terms of contract.

Quality control or monitoring of product performance shall not only be limited to the inspection, checking or measuring cleared land; rather it should cover all mine action products, which include, but are not limited to:

1) Information:

As one of the important products of mine action, information plays crucial role in product realization, and without accompanying information many products of mine action including the release of land will not be verified and accepted as mine action products. Information is a product in its own right and is being delivered to mine action customers, stakeholder and other interested parties through records, reports and other mediums as required by public information campaigns.

It is therefore, important to quality check all mine action data, report and records to ensure they are in the right format, correct, reliable and based on the requirements of SNMAS, SOPs and other agreed regulations. NMAC Operations and QM staff at HQ and Sub-Offices shall ensure that all the data, reports and records are properly checked, verified and approved before processing and entry to IMSMA and further analysis and dissemination.

2) Released Land:

Mine action processes deliver cancelled, reduced and cleared land. All are required to meet the same basic quality requirement as specified in related SNMAS to ensure the land that is release through NTS, TS and Clearance is safe for intended use.

The output and product of land release process should be properly inspected and measured against the requirements of SNMAS, SOPs and agreed regulations.

3) Hardware:

Hardware mine action products encompass prosthetic limbs, training aids materials “Free From Explosive (FFE)” ordnance, exhibition materials for awareness, demining tools and equipment including ancillaries for demining machines, hazards marking materials including fencing and warning signs used to delineate hazardous areas. All should have clearly specified and defined quality requirements.

All are subject to quality check, measurement and monitoring before they are being delivered to the customers, utilized and used for the purpose they are produced; against the set criteria and predefined quality requirements.

4) Competent Staff:

Mine action engages in a wide variety of training processes and programs which deliver trained and competent personnel as their product. Requirements against which their performance can be monitored should be defined in Job Descriptions or Terms of Reference and the Training

Management Packages (TMPs). The trainees evaluation criteria shall be part of the TMPs approved by NMAC, based on which the competent personnel should be assessed.

Every product should be designed and delivered to fulfill specified and predefined requirements, most of which are already covered in SNMAS, however, the requirements for the rest of the products shall be covered in related SOPs and documents.

8.2. Methods of Product Monitoring and Measurements

Methods for monitoring the performance of products include:

- 1) Physical inspections and sampling, in case of cleared land, the physical inspection could be:
 - a) Progressive QC;
 - b) Targeted QC;
 - c) Post completion QC;
 - d) Combination of all, however the first two should mainly be considered.
- 2) Field testing of the products to ensure they are fit for purpose;
- 3) Customer feedback, through interviews and based on specific questionnaires; and
- 4) Long term monitoring which also includes Post Land Release Assessment.

8.2.1 Physical Inspection and Sampling

Physical inspection and sampling are useful where products are produced by the same process or activities, and from the same materials using the same process, and where inspection can identify defects that can be traced back to the causes of nonconformity. Examples of mine action products that may be suitable for physical inspection and sampling include:

- 1) Cleared land as part of the land release process;
- 2) Prosthetics limbs for the mine or ERW survivors;
- 3) Mine action tools and equipment, including mechanical ancillaries;
- 4) Mine action records, data and other documentary products; and
- 5) FFE items and other training aid materials.

The outputs of land release activities can be cancelled land through NTS and/or reduced land through TS and or cleared land through Clearance activities, as such all shall not be subject to the same process of product measurement or QC. However, the contaminated area may be cleared through different methodologies. The QC sampling of cleared land should be undertaken as sampling from different parts of the cleared area, through different methods to obtain objective confidence that no contamination left behind. Sampling supplements accreditation and monitoring and provide additional confidence that clearance requirements have been met.

All mine action organizations working in Sudan shall implement internal QC that accurately records all internal QC carried out, that allows immediate identification of the following factors should it be necessary:

- a) Details of the individual/asset that conducts QC on a specific area;
- b) The exact areas that has been subjected to QC;
- c) The date/time that QC was conducted; and
- d) The method of QC and sampling plan.

Sampling should be incorporated into day to day activities of the demining teams so that progressive inspections are carried out. Samples shall be randomly selected and carried out in accordance with the methodology and acceptance criteria specified in this standard and as part of contract agreement.

External QC process should be conducted by NMAC monitors and may be linked to the findings of process performance monitoring. NMAC monitors can decide based on their findings of monitoring that resulted in conformity and high confidence level. Otherwise, NMAC monitors can conduct sampling of cleared area as part of their monitoring visits as progressive or targeted QC sampling.

Sampling should be conducted in line with the sampling procedures developed by NMAC which include acceptance criteria. Records of such inspections and results shall be included in monitoring form, the annex A to this SNMAS.

If a sampling lot fails inspection, the NMAC shall require the lot to be cleared again. The NMAC may then decide to suspend accreditation of the organization for a pre-determined period until such time the requirements for more extensive corrective action are identified and addressed. Failed lot shall not be offered for re-inspection until the organization has taken remedial action as agreed between NMAC monitors and related mine action organization.

A 'lot' should be considered as 'cleared' if all the samples in the lot are found to be free of mines and ERW to the depth specified in the contract and or extent of risk found during technical survey and clearance. Where any sample in the lot is found to contain one or more mines or ERW, this shall be counted as a 'critical nonconformity, and that lot shall be declared to have failed the inspection. Cleared land may contain other indicators of potential nonconformities, such as residual metal fragments following detection by metal detectors, or residual traces of explosives following detection by MDDs. The presence of one or more undisturbed pieces of metal fragment with a weight equal to or greater than the metal content of the mine with the least metal content in any 1.0 Sqm unit of sampled land shall be considered as nonconformity and that lot shall be declared to have failed the inspection.

The QC sampling of land that is released through NTS and through TS may require different approaches; however, the main focus shall be on monitoring of process performance rather than product performance or QC sampling. For measuring product performance of cancelled and reduced land within the context of Sudan, should be review of the level of all reasonable efforts applied during the cancellation and reduction activities, review of documentation including NTS reports, TS reports and completion reports, review of confidence of the communities and land users and the review of internal and external monitoring data conducted on NTS and TS activities. However, some specific parts of the cancelled area and reduced area may be checked as targeted QC sampling.

8.2.2 Mine Action Product Testing

The hardware products that are produced for utilization in demining operations, including detectors, locators and mechanical systems, shall be tested prior to be used in Sudan. The criteria and procedure for test, evaluation and acceptance of mine action such products shall be developed by NMAC and introduced to the mine action programme of Sudan. At minimum NMAC shall ensure the following are applied:

- a) The detectors and locators are effectively capable to detect the hazards ordnance in a depth or extent that normally found in Sudan, from the original ground surface;
- b) The detectors and locator are safe and suitable for intended use;
- c) They are suitable to the geography and climate of Sudan;

- d) They are user friendly, not complicated to require specialized operators, and easily portable to the worksite for operating;
- e) Availability of spare parts and maintenance by producing company or their representative;
- f) The machinery is suitable for demining operations and do not have environmental impact;
- g) The ancillary of machine can effectively reach to the required clearance depth;
- h) Availability of spare part and maintenance in country;
- i) The machinery is suitable for geography and climate of Sudan; and
- j) Easily transportable to the operational sites.

All other hardware products should also be based upon clear criteria reflecting the intended use of the equipment and the specific circumstances and conditions associated with that intended use. Mine action organizations and their operators should be included in testing as their skills may affect the results of the testing.

All mine action field personnel including Deminers, surveyors, EOD operators and their command and control group, supervisor and emergency medical support providers should be subject to testing through written and practical examinations and practical demonstrations of competence. The test results should be recorded as part of the monitoring records within QM department of NMAC and made available as required.

8.2.3 Customer Feedback

NMAC as part of its monitoring process shall ensure that the customers and users of different mine action products and services are identified and their feedback with regard to the mine action services and products are collected. The feedback shall include their satisfaction of fulfillment of their requirements and expectation. The mine action customers and product user include but not limited to land users, mine/ERW survivors and victims as users of prosthetic limbs and other services, mine action information users, affected communities received MRE, government, humanitarian aid assistance agencies and development investors.

The results of customer feedback should be analyzed and made available to mine action senior manager and decision-makers. Such feedback should feed-in to continual improvement process.

8.2.4 Long Term Monitoring of Mine Action Products

Long term monitoring should be undertaken especially about the land release outputs, it can also be referred to “Post Land Release Monitoring or Post Demining Impact Assessment (PDIA)”. It is important in building confidence about a large volume of mine action products that are used over extended periods. The main indicator of quality in released land is that the land is used safely, productively and continually without evidence of any incident, for long periods, after being handed over.

Long term monitoring of mine action products can be undertaken through:

- a) Analysis of IMSMA data and information;
- b) Analysis of data from such as national health systems;
- c) Analysis of data from government entities working in victim assistance; and
- d) Through survey and data collection interventions as part of PDIA.

Long term monitoring of mine action service and products helps in building the confidence of mine action customers and stakeholders that any nonconformity of product will come to the attention of NMAC to take required actions.

PDIA should be undertaken once a year or as agreed as part of the contract agreement. As general at minimum the PDIA should be conducted a year after the land is released and handed over to the user to allow enough time for land users to productively use their land. A percentage of released land should be focused in regional level and the type of land that is released for productive use.

8.3. Nonconformity Identification and Response

Real or potential nonconformity in process or product performance can be identified by monitors. A key part of mine action QMS is to respond to nonconformity; properly documents it with clear problem statement, investigates it to the root causes and effectively implement corrective and preventive actions.

Nonconformities (NC) that are identified during monitoring shall be addressed by relevant mine action organization, using its own QMS. There shall be agreed corrective and preventive action plan between NMAC monitors and the organization in response to the identified actual or potential NC.

8.3.1 Types of Nonconformity (NC)

Nonconformities should be categorized as:

- a) Real NC that has already occurred; or
- b) Potential NC that has not yet occurred, but there is a significant risk that it will occur.

NC should also refer to the part of the management system to which they relate, including safety, environment, quality and others.

8.3.2 Severity of NC

The monitors shall clearly identify the severity of NC in monitoring form and document it with clear statement of work, the following shall be considered in relation to NCs:

- 1) Major or critical NC:

A serious situation usually associated with serious problems including but not limited to:

- a) A major element of the QMS is not being implemented;
- b) A significant breach of SNMAS, or a major part of SNMAS is not being adhered to during mine action operations;
- c) Significant breach of terms of contract;
- d) Safety breach during mine action activities that affects mine action personnel and will pose significant risk to the land users after the land is being handed over for its intended use;
- e) A situation which will lead to mine action project failure;
- f) Serious problem in management practices and lack of required supports to the operations;
- g) Lack of appropriate medical support.

- 2) Minor NC:

Less serious situations including, but not limited to:

- a) A minor breach of QMS that does not lead to the failure and can be corrected immediately;

- b) A minor breach of SNMAS that does not pose risk to the personnel and customers;
- c) An isolated instance of not meeting SNMAS and SOPS;
- d) Incorrect or missing pieces of non-critical information; and
- e) Problems where the consequences are limited to internal inefficiency, but the products, customers and end users will not be affected.

NC should be categorized once the full extent of the problem is known. Additional information may come to light during analysis of the root cause of the NC or throughout the discussion with related mine action organization. Root cause analysis may need convening a Board of Inquiry (BOI) or independent investigation undertaken and authorized by NMAC management.

8.3.3 Observations

Mine action monitors may also identify weaknesses in processes or products that do not constitute nonconformity, but which can be improved upon. Such circumstances may be categorized as observations and recorded within monitoring documentation. Although an observation is not nonconformity at the time of recording, but it may become one; if appropriate preventive action is not taken by related organization. Monitors should also review the status of previous observations.

8.3.4 Responses to NCs

All identified NCs shall be properly documented in monitoring forms, reported and recorded. Actions in response to NCs shall include corrective action to eliminate the cause of a detected nonconformity and preventive action to eliminate the cause of a potential nonconformity.

The response to NCs should include:

- 1) Description of NC with clear and concise problem statement;
- 2) Assessment of impact of the NC on the process and or product performance;
- 3) Analysis of root causes of the NC;
- 4) Consensus and agreeing on the most appropriate plan of remedial actions;
- 5) Implementation of the agreed action plan;
- 6) Follow up to ensure all agreed corrective and preventive are taken; and
- 7) Assessing the appropriateness and effectiveness of the actions taken.

The mine action monitoring records shall include, but not restricted to the following especially when NCs are identified and remedial actions are taken:

- a) A description of the NC;
- b) The aspect of the QMS to which the NC relates;
- c) The date of monitoring conducted and the NC identified;
- d) The category and severity of the NC;
- e) Root cause analysis and identification of the root causes that resulted in NCs;
- f) Agreed corrective actions with related mine action organization, including action to prevent reoccurrence of the NC;
- g) Assessment of appropriateness of planned remedial actions
- h) Assigned staff member that made responsible to implement agreed actions;
- i) The deadline for implementation of agreed actions;
- j) The follow up action which should include re-audit visit, and the assessment of effectiveness of actions; and
- k) Additional information as required to allow monitors and senior management of NMAC and mine action organizations to track the improvement of performance.

In case of major NCs that resulted in harm to personnel or beneficiaries, a formal investigation or Board of Inquiry (BOI) shall be conducted to undertake further analysis of the problem and come up with practical and appropriate recommendations to be used as lessons learnt and support liability issues.

8.3.5 Implications of Nonconformity on Accreditation

Depending on the results of monitoring or investigation, and the severity of NC within the process or product performance of mine action organization, NMAC QM and Operations staff or investigation team may recommend suspension and termination of the organization's accreditation. For more details refer to SNMAS 07.02 of accreditation.

8.4. Review and Improvement of Monitoring Process

As part of QMS, NMAC and mine action organizations shall review the monitoring process and improve upon it. For more details refer to SNMAS 07.01 of Quality Management System in Mine Action.

9. NMAC Obligations in Relation to Monitoring

NMAC shall ensure that the mine action monitoring is undertaken by competent staff having written TORs and job description of conducting mine action monitoring. A detail procedure and process shall be developed by NMAC that is well communicated to its staff and sub offices.

9.1. Independence, Impartiality and Integrity

As principles of monitoring for all mine action monitors it is essential to consider independence, impartiality and integrity throughout the monitoring process. Mine action monitors shall consider freedom from such influences that might affect their judgment during monitoring activities. The main focus of NMAC QM, Operations and other related staff should adhere to NMAC quality policy, and their main aim should be continual improvement without any personal interest or conflict.

NMAC should also ensure that all relevant stakeholders and customers have or can have access to mine action monitoring data, when required.

9.2. Confidentiality

As part of its mandate and as external monitoring body for mine action in Sudan NMAC shall ensure appropriate confidentiality of information obtained in the course of its monitoring activities. The records of monitoring maintained by NMAC shall not normally be released publicly, rather communicating monitoring information should be managed in a way that build the confidence of mine action customers and stakeholders in terms of transparency, accountability, improvements and performance of mine action organizations. The record should be made available and traceable to NMAC management and for informing individual mine action organizations and related mine action stakeholders needing access to the information of the results of monitoring of the activities of their interest. The NMAC should make use of anonymous data to encourage and allow wider dissemination of the results of monitoring.

9.3. Management System

The management of NMAC shall designate a person with defined authority and responsibility for quality management within its structure. For quality related issues, this person shall have direct access to the most senior executive of the NMAC.

9.4. Personnel

NMAC shall have a sufficient number of competent personnel with the range and level of expertise required to carry out mine action monitoring function and should have access to technical expertise on all the activities that will be monitored.

9.5. Appeals

The NMAC shall establish a fair and impartial system to enable mine action organizations to appeal against decisions of the monitors that it feels are unfair, or when new evidence comes to light.

10. Responsibilities

10.1. Sudan National Mine Action Centre (NMAC):

NMAC as coordinating, regulating and external QM body for mine action programme in Sudan shall:

- 1) Establish monitoring process and procedures for monitoring mine action activities of the accredited mine action organizations in Sudan;
- 2) Ensure monitoring process verifies compliance with SNMAS, Policies, SOPs and agreed regulations, including terms of contracts;
- 3) Ensure that the monitoring process is being applied in a fair, equitable and gender aware manner;
- 4) Ensure that monitoring does not unnecessarily interrupt or delay mine action activities, processes and operations;
- 5) Ensure appropriate follow up actions are taken as part of the monitoring process;
- 6) Monitor mine action organizations, including their sub-units;
- 7) Provide documentation on monitoring activities and inspections as required;
- 8) Analyze the results of monitoring and properly communicated to mine action stakeholders;
- 9) Recruit appropriately qualified and experienced monitoring staff and ensure they are trained to conduct monitoring visits in a way that minimizes disruption to the mine action activities being monitored;
- 10) Inform and direct monitors in their responsibilities and authority in the event of observing a critical non-conformity.

10.2. Mine Action Organizations

All accredited mine action organizations in Sudan, shall:

- 1) Apply management practices, and quality management system and operational procedures which lead to meeting or exceeding the requirements of SNMAS, contracts and other relevant formal agreements and applicable rules and regulations;
- 2) Establish monitoring process as part of their QMS, based on the requirement of this SNMAS and SNMAS 07.01;
- 3) Maintain and ensure the accuracy and validity, and make available documentation including monitoring reports, records and other data on their activities to NMAC;
- 4) Provide NMAC monitors with access to all sites and facilities that need to be visited as part of the monitoring requirement;
- 5) Fully and promptly comply with instructions of monitors in the event of critical NCs requiring an immediate cessation of activities.

10.3. Donors and other Mine Action Stakeholders

It is crucial that when a mine action contract has been written by a donor or other stakeholders, the requirement of compliance with SNMAS and the monitoring process as part of the mine action QMS established by NMAC, are included in contract agreement, and mine action organizations shall comply with the requirements, as part of the implementation of the contracted mine action projects.