

Sudan National Mine Action Standards – SNMAS 07.04

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Environmental Management in Mine Action

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1. Introduction

Mine Action operations and activities involve preparations for searching mine and Explosive Remnants of War (ERW) contaminated areas, which may include removal of bushes, trees and other natural things and objects. In addition, demining involves demolition and destruction of discovered hazardous ordnance that will affect the environment. It is therefore, necessary to understand that mine action especially demining activities have significant potential to adversely impact the environment. In order to reduce the adverse impact, it is crucial to properly manage environmental aspects of mine action operations and activities, which can extensively affect and lead to short and long term adverse impacts on land, water, soil and air. This can also result in direct harm to people, damage to the environment and infrastructure and originate legal action against mine action organisations and substantial claims for compensation. Adverse impacts on the environment can lead to associated negative social, economic and political impacts at local, regional and national levels. Environmental management, therefore, requires comprehensive and inclusive solutions which assess different impacts and an increased awareness towards environmental protection among Sudan Mine Action Programme (SMAP).

Nature as a whole warrants value and respect, the integrity of the earth's ecological systems shall be maintained and restored. All forms of life are unique and shall be safeguarded regardless of their value to humanity. Peace and security, sustainable development, environmental protection and conservation, and respect to human rights including persons with disability, gender and diversity groups are interdependent and mine action can significantly contribute to fulfilling these goals.

Sudan National Mine Action Centre (NMAC) and all Mine Action Organizations working in Sudan have the responsibility to ensure that all mine action activities including mine/ERW survey and clearance (Land Release) and Explosive Ordnance Disposal (EOD) operations, are carried out in accordance with Sudan National Mine Action Standards, safely, effectively and efficiently, with completely considering the ways that minimize adverse impact on people, wildlife, vegetation and other aspects of the environment. The main and essential aim on environmental management in mine action is to leave the environment in a status that is similar to, or where possible better than, before mine action operations commenced, and that permits the intended use of land once mine action operations have been completed.

Managing environmental aspects of mine action should not be considered as an obstacle or a difficult task. There are many similarities between Environmental Management System (EMS) and Quality Management System (QMS) and basic principles of risk management. The QM principles of the customer focus, leadership, engagement of people, process approach, improvement, evidence-based decision making and relationship management are all entirely applicable to environmental management. It is also important to note that one of the main, and most effective, ways of reducing the direct impact of mine action operations and activities on land is through the application of land release (LR) principles *"to minimize the number of square meters that are processed"*.

NMAC as the coordination body and national authority for SMAP is responsible to develop the requirements for the implementation of suitable environment management systems for mine action in Sudan and to oversee the application of the environmental requirements by the mine action organizations.

2. Scope

This SNMAS covers the minimum requirements for environmental management of all mine action operations and activities in Sudan, which include but not limited to planning, protection and mitigation measures of environmental impact of mine action activities.

3. Reference

IMAS 07.13 and ISO 14001:2015.

4. Terms and Definitions

For details on mine action related terms and definitions, refer to IMAS 04.10 and SNMAS 07.01. However, environmental management related terms are defined in this standard.

The term 'environment' refers to the "surroundings, in which an organization operates, air, water, land, natural resources, flora, fauna, humans and their interrelationships" (ISO 14001:2015).

The term 'environmental aspect' refers to an "element of an organization's activities or products or services that interacts or can interact with the environment" (ISO 14001:2015).

The term 'environmental impact' refers to "change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects" (ISO 14001:2015).

The term 'environmental impact assessment' (EIA) refers to "the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant environmental impacts of activities prior to and during operations".

The term 'environmental mitigation measures' refers to actions taken before, during and/or after mine action operations to lower adverse environmental impact.

The term 'environmental management system' (EMS) refers to the "part of the management system used to manage environmental aspects, fulfil compliance obligations and address risks and opportunities" (ISO 14001:2015).

5. General Requirements of Environmental Management in Mine Action

Mine action operations and activities shall be conducted in a way that minimize the adverse impact on the environment and are safe for mine action staff, and people inhabited in vicinity of the mine action worksites including men, women and children.

Planning for mine action operations shall identify and assess relevant environmental aspects and determine appropriate and effective measures to mitigate adverse environmental impacts. This shall be undertaken through following levels:

- a) National level by NMAC and UNMAS, in order to ascertain environmental requirements in national operational plans, and manage inclusion of these requirements in Requests For Proposals (RFP) and Calls For Proposals (CFP).
- b) Mine Action Organizations level, in order to incorporate environmental requirements in related documentation including mine action proposals, SOPs, operational plans and QA monitoring and QC plans.
- c) Operational and worksite level by mine action organizations, in order to meet the national and site specific environmental protection requirements.

Mine action organizations shall get the agreement of NMAC, landowner and beneficiaries if it goes beyond its capability to change the status of released land similar to or better than before mine action operations commenced.

6. Specific Requirements of Environmental Management in Mine Action

6.1. Environmental Policy

NMAC with technical support of UNMAS shall ensure that the environmental for the programme is established, and regularly reviewed and maintained. The policy shall be based on below:

- a) Appropriate to the mine action programme and its activities;
- b) Includes a commitment to protect the environment;
- c) Includes a commitment to comply with applicable legal and other obligations;
- d) Includes a commitment to the continual improvement of the programme's environmental management;
- e) Properly communicated to relevant internal and external stakeholders; and
- f) Reviewed and updated, at least annually.

6.2. Management Responsibilities

The senior management in SMAP shall ensure that:

- 1) Adequate resources are allocated to enable effective environmental management in accordance with the environmental policy;
- 2) Staff members are adequately trained and have a clear understanding of their role in the protection of the environment;
- 3) Management of environmental aspects is adequately incorporated into SOPs and other relevant documentation;
- 4) Documentation relating to environmental management is openly and transparently available, including in national languages to aid understanding, and is kept up to date;
- 5) Environmental management aspects of the mine action organization's activities are monitored, reviewed and improved.

6.3. Understanding Environmental Context

NMAC as coordination body for mine action in Sudan shall:

- a) Identify and assess environmental obligations relevant to SMAP based on related national legislation;
- b) Define and communicate environmental obligations in SNMAS;
- c) Identify and liaise with other Government institutions relevant to environmental management;

- d) Develop liability policy for environmental protection;
- e) Coordinate with mine action stakeholders to support improvement of environmental protection and mitigation measures.

Mine action organizations shall take all reasonable measures to understand the environmental needs and expectations of mine action stakeholders including local communities.

Understanding of the physical environment and the needs and expectations of mine action stakeholders shall inform the planning for, and establishing of environmental protection and mitigation measures.

6.4. Identifying and Assessing Environmental Aspects

As a minimum, mine action organizations shall identify, assess and document environmental aspects of mine action activities, inputs to those activities, products and services arising from mine action operations, including:

- 1) Emissions to air;
- 2) Releases to water;
- 3) Releases to land;
- 4) Use of raw materials and natural resources;
- 5) Use of energy;
- 6) Emission of energy; and
- 7) Generation of waste.

Mine action organizations shall identify those aspects that may give rise to an adverse environmental impact, including, as a minimum, the following potential environmental impacts:

- 1) Erosion and soil degradation;
- 2) Desertification;
- 3) Pollution of air, water and soil;
- 4) Disruption, disturbance or harm to local communities, beneficiaries, infrastructure, wildlife and vegetation;
- 5) Litter, debris, residual waste and other degradation of the visible environment; and
- 6) Damage to heritage sites and historical areas.

When assessing the significance of environmental aspects, mine action organizations should take into account the following criteria:

- 1) The type of mine action activity;
- 2) The scope of the mine action operations;

- 3) The frequency of mine action operations;
- 4) Relevant legal and or standards requirements;
- 5) The expectations of environmental stakeholders;
- 6) The potential for one environmental aspect to lead to more than one adverse environmental impact; and
- 7) The potential legal liability associated with impacts arising from environmental aspects.

Environmental aspects shall be documented in SOPs and operational plans.

6.5. Environmental Protection and Mitigation Measures

Mine action organizations shall determine appropriate and effective mitigation measures in relation to environmental aspects assessed as bringing a significant risk of adverse environmental impact. Mitigation measures shall be documented in task dossier and operational plans.

Environmental protection and mitigation measures shall include emergency response plans for potential critical and major environmental incidents.

6.6. Environmental Impact Assessment (EIA)

Environmental Impact Assessment (EIA) is necessary part of mine action environmental management and shall be made whenever:

- a) Mine action operations are expected to take place within, or close to, designated protected environmental areas, or other areas known to be environmentally sensitive;
- b) There is a legal or contractual obligation to do so;
- c) The NMAC determines that an EIA is necessary;
- d) Any other occasion when there is uncertainty about the scale or significance of environmental impact; and
- e) There may be situation where involvement of other relevant environmental management entities is necessary in EIA process, as determined by NMAC.

Guidelines on the conduct of an EIA are provided in Annex A to this SNMAS.

6.7. Planning of Mine Action Operations

When planning mine action operations, mine action organizations shall take into consideration the guidelines in Annex B to this standard. Contracting of mine action operations shall include relevant environmental requirements. Environmental protection and mitigation measures should be part of the proposals, implementation plan, statement of work and other documentation relevant to operational requirements.

6.8. Conduct of Mine Action Operations

Mine action organizations shall comply with the requirements of this SNMAS, and refer to it in their SOPs. When conducting mine action especially demining operations, all mine action organizations shall consider the followings:

- 1) Ensure compliance with environmental requirements through project, contract and operational management processes.
- 2) Promote knowledge, awareness and competence for protection of the environment through education and training, and ensure training for emergency preparedness and response in case of environmental incidents.
- 3) Allocate the responsibility of environmental protection to one of their suitably qualified staff member at mine action worksites.
- 4) Mitigation measures shall be taken to prevent adverse environmental impacts and to prevent pollution and degradation of soil, air and waterways. In addition all reasonable effort shall be taken to prevent the adverse impact on wildlife and vegetation during mine action operations.
- 5) The destruction of mines and other ERW using open burning and open demolition (OBOD) techniques shall be carried out in accordance with SNMAS 06.03.
- 6) Human waste shall never be discharged into watercourses or onto the soil surface.
- 7) Minimize the environmental impact of mine action operations and remove waste from demining worksites on completion of operations, prior to handover of released land.
- 8) The operation, repair, maintenance and servicing of mine action equipment shall be carried out in a manner that minimizes the adverse impact on the environment and in accordance with the requirements of the EIA.
- 9) Demining operations may occur in areas of cultural or historical significance where appropriate actions and practical steps are needed to be taken to prevent damages to these sites. NMAC and related government ministries shall be consulted in such cases.
- 10) All relevant environmental mitigation measures detailed in SOPs, task folders or otherwise documented shall be fully implemented during mine action operations and confirmed to be completed before land is handed over to the beneficiaries.

6.9. Monitoring of Environmental Aspects

Mine action organizations shall implement a monitoring system in accordance with SNMAS 07.03 and shall ensure that environmental requirements are included. Environmental nonconformities shall be managed in accordance with SNMAS 07.03, and environmental incidents shall be treated as nonconformities and investigated in accordance with SNMAS 08.04. Post Demining Impact Assessment that are undertaken after release of land should include assessment of environmental aspects including the effectiveness of any agreed environmental remediation measures.

6.10. Review and Improvement

As part of continual improvement in mine action sector, all mine action organizations shall conduct management reviews on regular basis by senior manager of mine action organizations to ensure the continued effectiveness, suitability and alignment of environmental management with SMAP environmental policy.

Management reviews should be conducted at least annually and should take into account:

- 1) The status of actions arising from previous reviews;
- 2) Changes in the mine action environmental context;
- 3) The environmental management performance of the mine action organization including:
 - a) Satisfaction of customers and stakeholders' environmental needs and expectations;
 - b) Compliance with environmental policy;
 - c) Environmental nonconformities and corrective actions;
 - d) Environmental monitoring, measurement, audit and evaluation results;
 - e) Opportunities for improvement of environmental management.

Management reviews shall include decisions and actions related to:

- 1) Opportunities for improvement of environmental management;
- 2) Changes to environmental management policy;
- 3) Identification of actions to be taken, allocation of responsibility, schedule for completing and verification of effective implementation and validation of actions taken.

The results of management reviews should be communicated to the staff, managers and stakeholders.

7. Responsibilities and Obligations

7.1. Directorate of Mine Action Coordination

On behalf of the National Mine Action Authority in Sudan, the NMAC shall:

- 1) Document environmental management policy for the programme;
- 2) Monitor compliance by mine action organizations with documented environmental management policy;
- 3) Ensure the implementation of EIA as required;
- 4) Ensure that protection of the environment is taken into account during planning for mine action operations;
- 5) Maintain records of reported environmental incidents;

- 6) Conduct investigations into environmental incidents in accordance with SNMAS 08.04;
- 7) Disseminate information about significant environmental aspects of mine action within the sector;
- 8) Coordinate environmental protection with mine action stakeholders.

7.2. Mine Action Organizations

Mine action organizations shall:

- 1) Communicate SMAP's environmental policy within their organization;
- 2) Include environmental management requirements in their SOPs;
- 3) Consider protection of environment in the planning and conduct of all mine action operations;
- 4) Maintain records of environmental nonconformities and incidents; and
- 5) Report any significant environmental incidents to the NMAC and its sub-offices.

7.3. Stakeholders' Responsibilities

Mine Action Stakeholders including donors and contractors of mine action projects can also play a crucial role in improvement of environmental protection in mine action sector through the following:

- 1) Emphasize on the need of protecting the environment;
- 2) Contribute with resources to improve the awareness, understanding and implementation of environmental protection and mitigation measures;
- 3) Be aware of the challenges of protecting the environment in mine action operations when developing mine action RFP.

8. Specific Requirements

Any item of archaeological, heritage, historical, cultural, or scientific interest identified during demining operations, the operations shall be ceased, and NMAC and appropriate government authorities shall be notified. Operations shall not resume until clarification from the appropriate authorities has been received.

When areas require to be burned to remove vegetation before demining operations, burn plans shall be discussed with and approved by land owners/users and local authorities.

The preservation of trees, shrubs, ground cover, fish, and wildlife shall be considered in site selection and construction of temporary support facilities. Harassment of livestock or wildlife in and adjacent to demining sites is prohibited.

All toxic or hazardous materials, including fuels, shall be transported, stored, and used in a way that minimizes the likelihood of spills or leaks. Toxic or hazardous wastes including used batteries shall not be buried on-site, but collected and removed to an approved disposal area. This shall include any razor wire/barbed wire removed from demining worksites.

Suitable equipment and containers should be used to safely transport petroleum products, toxic and hazardous materials both on and off roads. The necessary precautions shall be taken to prevent the loss of these materials during transport on public highways and roads.

Temporary facilities should be located in such areas to ensure the safe provision of drinking water. Water supplies shall be arranged as to avoid disrupting local supplies to nearby land users/owners and communities. The facilities should also be located in consultation with local communities to ensure that they do not affect local activities and social and cultural values.

Human waste shall not be discharged into watercourses or onto the soil surface. Excess water from washing, bathing, and kitchen areas shall be drained to soak-away pits. It shall not be permitted to enter watercourses.

Contingency plans for the clean-up of toxic or hazardous spills, including fuels, should be prepared prior to any commencement of mine action activities, together with a list of required spill clean-up supplies necessary.

Before demining activities commence in a worksite, mine action organization shall discuss with local communities the issue of noise and dust that may result depending on the type of demining asset used.