

DISCUSSION PAPER 9

Presented by the Geneva International Centre for Humanitarian Demining
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PROTECTION OF THE ENVIRONMENT IN MINE ACTION

Introduction

While global warming is one of the many challenges of our time, it is important to look at mine action activities and mine/ERW clearance procedures to ensure that our industry is in compliance with the world's requirements about the protection of the environment. There is perhaps a need, more than ever before, to remind national mine action authorities and demining organizations of their responsibility to ensure that demining operations should not only be carried out in a safe, effective and efficient manner, but also in a manner that minimizes any impact on the environment.

In its continued efforts to provide the mine action community, with consistent and globally relevant International Mine Action Standards (IMAS), the United Nations Mine Action Service (UNMAS), and the Geneva International Centre for Humanitarian Demining (GICHD) with the support of the mine action community represented through the IMAS Review Board have developed an IMAS on the protection of environment. This standard provides guidelines as to the minimum measures that should be complied with to ensure that environments affected by demining operations, particularly stockpile destruction are not degraded by the work and the land is safe and fit for their intended use once demining operations are completed.

The standard emphasizes that demining operations should be carried out in way to minimize damaging property and infrastructure, and is safe for local communities and demining staff. Planning for demining operations must take into account the effects of operations, and any supporting activities, on the environment, and any possible damage to property or infrastructure, or harm to personnel. Demining organisations should ensure that land, over which demining operations have taken place, including land used for administrative or support purposes such as temporary accommodation facilities and support areas, is left in a state whereby it is suitable for its intended use once demining operations cease. Particular attention should be given to property, infrastructure or land required for subsistence or economic purposes to ensure that these activities can continue after demining operations have been completed.

Activities that may damage the environment

Demining operations have potential to damage the environment in which they are conducted. This damage not only includes the short-term effects caused by demolition activities, but long-term effects that may be caused by contamination of soil and water systems, removal of vegetation, disruption to watercourses or changes to soil structure. Demining operations may also damage the natural habitats of insects and wildlife and affect areas of historical or cultural significance. The following are some extracts from the international standard that discusses potential demining activities that may damage the environment:

1. Use of machines in support of mine clearance: Where mechanical operations involve the removal of vegetation, or occur on ground that may be subject to erosion, demining organisations must ensure that as far as practically possible, measures are taken to ensure the regeneration of vegetation and to limit erosion.
2. Explosive Ordnance Disposal: Mines and Explosive Remnants of War (ERW) should be disposed of in a manner that minimises environmental impact and without creating damage to property or infrastructure. If mines or ERW must be destroyed in situ and there is a risk to property or infrastructure, protective works must be used.

If, even with protective works, there is still a risk of damage to property or infrastructure, the authorities and local communities must be consulted about the operation.

3. Disposal of debris, rubble and wire: Debris, rubble, wire and any other remains of obstacles removed from a demining worksite must be disposed of in accordance with local waste management regulations and requirements of the national authority. When applicable, local communities should be consulted about such disposal.

4. Disposal of toxic and hazardous waste: Toxic and hazardous waste are not normally found in landmines. However, asbestos chemicals and liquid propellants can be found in missiles and fusing systems. Also, chemical weapons, including chlorine and mustard gas munitions, and depleted uranium projectiles may be encountered. Other examples of toxic and hazardous waste include flammable substances, oily wastes, lubricants, fuel filters (FOL), batteries, medical waste, old medicine, and other chemicals. Any toxic or hazardous waste products of demining operations must be disposed off in accordance with the requirements of the national authority.

5. Obstruction of watercourses: Demining organisations must not obstruct or divert the natural flow of watercourses unless it is necessary to divert or dam the watercourse to allow demining to be conducted. If it is necessary to divert or dam a watercourse, the landowner or local community is to be consulted and their agreement obtained before work commences.

6. Degradation of air quality: When demining organisations are conducting operations, they are to remain aware of the location of local communities, the prevailing wind conditions in the area and the ability of prevailing winds to carry smoke, dust and toxic fumes to local communities. Demining organisations must ensure that the impact on local communities of any degradation of air quality is minimised. When degradation of air quality is likely to affect local communities, demining organisations must liaise with local communities and authorities to explain the scope, scale and duration of any likely air degradation.

7. Burning of vegetation: Burning of vegetation should be avoided, however when vegetation burning is to be carried out, where applicable, proper procedures and control measures should be applied. Plans for burning vegetation should be discussed with and approved by the land owners/users and local authorities; burning should not be carried out at night or continue into the night; no burning should be started unless there are sufficient personnel and fire fighting equipment on site to control, and if necessary, stop the burning;

8. Stockpile destruction operations: Stockpile destruction operations must be planned and conducted in a manner that minimises the impact to the environment. If deemed necessary by the national authority, this may include the conduct of an Environmental Impact Assessment.

9. Worksites and temporary accommodation facilities: Protection of the environment must be considered in the site selection and layout of worksites and temporary accommodation facilities. The establishment and operation of worksites and temporary accommodation facilities must be carried out in a manner that minimises any contamination of the land or water systems (including ground water systems) and has minimal affect on flora and the natural habitats of insects or wildlife. Temporary accommodation and facilities must be located in consultation with local communities to ensure that they do not adversely affect local conditions, economic activities or social and cultural values. Temporary accommodation facilities must comply with all national or local regulations concerning the construction of temporary facilities.

10. Toilets: Human waste should not be discharged into water courses or onto the soil surface. Where possible, temporary toilets should be used on all demining worksites and temporary accommodation facilities. Temporary toilets should be equipped with holding tanks that can be pumped to sewage trucks for disposal, or connected to septic tanks and safe drainage.

11. Domestic rubbish: Rubbish removed from the site must be disposed of at approved rubbish dumping sites. Any rubbish spilled during the removal process is to be cleaned up. Rubbish must only be buried with the approval of the local communities/authorities and then in locations agreed to by them. Rubbish pits must be located away from watercourses and wells, and must be located and constructed so as not to contaminate groundwater.

12. Waste water: Waste water from washing, bathing or kitchen areas must be drained into soak pits large enough to take the amount of waste water generated.
13. Domestic water supply: The supply of domestic water is to be carried out in a manner that does not affect the supply of water to the local communities; unless the local communities have been consulted on this matter and have agreed to any arrangements made.
14. Fuel, Oil and Lubricant (FOL) areas: Demining organisations must ensure that procedures are in place that ensures that any spills of FOL are able to be contained and quickly cleaned up. Contaminated materials containing spilled FOL should be collected and disposed of at controlled landfill. Alternatively, the material should be disposed of at a specific site, where the leakage to the soil is prevented. Where it is necessary to establish fuel storage facilities, precautions must be taken to ensure that FOL is stored safely and does not contaminate the soil or groundwater.
15. Maintenance areas: When maintenance, repair or washing of vehicles, machines and equipment is required on worksites, specific areas must be designated for this activity. The environmental precautions to be taken include: waste water must not to be released so that it will enter watercourses; drained oil must be contained using a drip pan or other suitable receptacle and disposed of in an environmentally acceptable manner; and used parts, by-products of maintenance or other rubbish (except waste oils) must be disposed of as for domestic rubbish.
16. On completion of demining operations: On completion of demining operations, all buildings, equipment, surplus materials, fencing (except that marking hazardous areas) and other such items must be removed. Toilets soak pits and rubbish pits must be filled in, covered with soil and the surface stabilised to prevent erosion and to allow natural regeneration of vegetation. As far as practicable, all disturbed areas should be restored to their original condition.
17. Transportation of hazardous materials: During the transportation of any hazardous, toxic or flammable materials with the potential to damage the environment, precautions must be taken to ensure that risk is minimised. These should include: all materials to be transported in containers that will minimise or prevent spills or leakage; materials to be securely loaded in the transport; fire precautions to be taken relevant to the materials being transported; and vehicles carrying hazardous material to be driven in a safe and careful manner. IMAS 10.50 Storage, transportation and handling of explosives provides specifications and guidelines for the safe storage, transportation and handling of explosives used by demining organisations. In addition and where applicable, the transport of hazardous material should be in accordance with international standards.
18. Areas of cultural or historical significance: Demining operations may occur in locations where there are areas of cultural or historical significance. Where this occurs demining organisations should take all possible steps to prevent damage to these sites. Such action may dictate that any mines or ERW found at the worksite are removed to another area for destruction. If these items are unsafe to move and in situ demolitions are necessary, protective works must be used. If any article is located during demining operations and is suspected of being of cultural or historical significance, work in that area should cease and the matter reported to the national authority. Where human remains are encountered during demining operations, action in accordance with International Human Law must be followed. TNMA 10.10 10 provides additional guidance.
19. Environmental incidents: Environmental incidents must be reported to the national authority as soon as practicable after the incident occurred. Reports must include the circumstances surrounding the incident, the action taken, results of the action taken and the effects of the incident on the environment. The national authority may conduct investigations into environmental incidents that occur during demining operations.

Conclusion

It is the responsibility of the national mine action authorities and demining organizations to ensure that demining operations are not only carried out in a safe, effective, and efficient manner, but also in a manner that minimizes any impact on the environment. It is the responsibility of the national authority in a mine affected country to:

- a. document its environmental management policy in national mine action standards or other relevant publications. Such environmental management policies must be in accordance with national policies;
- b. monitor compliance by demining organisations with documented environmental management requirements;
- c. ensure that protection of the environment is taken into account during planning for demining operations; and
- d. maintain records of reported environmental incidents; where necessary, conduct investigations into environmental incidents; promulgate information about significant environmental incidents to other demining organisations within the programme.

It is also the responsibility of the demining organizations to:

- e. comply with the national authority environmental management policy;
- f. document their own environmental management requirements in Standard Operating Procedures (SOPs) or other relevant documents and ensure that all personnel are aware of the requirements;
- g. ensure that the protection of the environment is a factor in the planning and conduct of all demining operations;
- h. maintain records and report any significant environmental incidents to the national authority or an organisation acting on its behalf.

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