The Strategy of Waste Management Resulting from Military Activities

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Abstract. Military activities often have a variety of negative impacts on the environment in which they occur. Environmental breaches of military activities can be a threat to the welfare and habitats. Authorities responsibility is in the protection of the physical and natural environments, where they carry out operations and training.

Military training can affect the biodiversity starting from the flora, birds and insects to marine life and marine mammals. Through researches and new technologies, together with the standardization of procedures and training, the authorities is working to improve the protection of the environment and the nature where it operates (Malis Sazdovska, 2011).

Measures taken are in the direction of protection from hazardous substances (including fuel and oil), waste water treatment, waste management, reduction of the consumption of fossil fuel energy, and application of environmental management systems during military activities.

Increasing of demand from environmental legislation and public opinion have transformed militaries activities, employees and facilities of Armed Forces all over the world. It became necessary to implement an Environmental Management System (EMS) to guide people how to participate on those activities even during peace or war times. It’s a common threat among all the armies that military planning documents nowadays have to consider the risks of damaging the environment which can be caused by military operations. This has led to a progressive updated of environmental military legislation in order to be in according to Federal Environmental Laws in each country.

Military operations and training activities can have negative impacts on ecosystems due to the nature of the land use often result from damage to vegetation, digging activities, and soil disturbance from heavy troop traffic. Soil disturbance and associated erosion and sedimentation problems can further aggravate the ecological impacts of military land use on the ecosystems. The military’s essential mission is to win the war through the application of combat power warfare, which is destructive to the environment. This damage is a consequence of combat. However, it is necessary to restrict the application of force.

The actions must conform to the law of land warfare, those established or not conventions and agreements that protect ecosystems against dispensable suffering and facilitate the restoration of peace (de Oliveira, 2012)

Keywords: waste, waste management, military waste

INTRODUCTION

Modern production processes and increased needs of industrial companies have determined, of course, a considerable request environment. Increasing populations and increasing industrialization, with a concomitant increase in the industrial production, result in the presence of increasing amounts of residue. Only one-third of industrial products are useful, the remaining two-thirds being residues which can be harmful to the environment.

Need to reduce amount of waste technologies polluted or weak of unpolluted was accepted unanimously, for an entire planet. In 1989, the Basel Convention on the control of transboundary movement of hazardous waste discharge (storage) has been signed by a large
number of countries. Based on the concept that it was better to prevent than to treat, the convention emphasized the reduction of the quantity of waste.

Environmental protection is one of the major problems faced by humanity, and major objectives of environmental policy are represented by: protecting human health, maintaining biological diversity (biodiversity), natural resources management, to preserve cultural fund and landscape. Are objectives of a future sustainable development, which can involve assumption of certain tasks relating to the environment at local, regional and global levels (Dalea, 2002).

LEGAL CONSIDERATION

Compliance with applicable environmental laws and regulations is a necessary cost of doing business, even during military operations. Often national environmental regulations do not specifically apply to forces engaged in military operations in another country. This is not always the case, however, and the extent to which domestic laws and regulations apply extraterritorially will vary from nation to nation. Force Commanders and their designated environmental officers and specialists therefore must make every effort to understand their legal requirements, and examine the applicability of their national law, international law and conventions, and the regulations of multinational or supranational bodies such as the European Union or the United Nations (Nato Stanag 7141).

ENVIRONMENTAL POLICY

Military operations present unique challenges that are not typically associated with peacetime domestic routines or training activities. Most military operations are characterized by generally recognized phases of varying duration, depending on their nature, intensity, and complexity. In broad terms these phases may be defined as planning, pre-deployment, deployment (execution and force rotation), redeployment, and post-deployment (Fig.1).
NATO Definition of Environmental Protection (EP) Measures and controls to prevent damage and degradation of the environment, including the sustainability of its living resources (Nato Stanag 2545)

Environmental policy for military operations (by a troop contributing nation, UN, NATO, or other) is typically characterized by a code of environmental stewardship or principles for environmental protection which often includes the following elements:

- The tenet that environmental protection is every individual’s responsibility
- Compliance with applicable legal requirements, including international agreements
- Recognition of the importance of environmental planning
- The goal of minimizing environmental damage; A respect for local environmental standards
- The minimization of waste streams by wisely using raw materials, hazardous substances, energy, water, etc; Effective handling and storage of hazardous substances
- Timely response to environmental incidents to mitigate impacts
- Minimizing noise and other safety hazards

Operational Planning

Once the political and military decision has been made to participate in a military operation, environmental considerations should be incorporated into each phase of the planning process. The requirement for good, reliable information early in the planning process (Fig. 2) reinforces the value of feedback on environmental issues from previous operations in the form of lessons identified or lessons learned.

Pre-deployment Environmental Surveys

In the pre-deployment phase (Fig. 3), preliminary surveys should be undertaken prior to troop mobilization and deployment to validate COAs and the OPLAN Environmental Annex and to further document and assess the initial site conditions with respect to health and
environmental considerations. Site surveys should, to the extent practicable, be scientifically valid and defensible.

Fig. 3. Life cycle of military operations for pre-deployment (http://www.defmin.fi/files/1256/Guidebook_final_printing_version.pdf.)

**Development of an Environmental Management Plan (EMP)**

Once troops are deployed, it is important to establish and continuously communicate the roles, responsibilities, and standards for effective environmental management, and to maintain records of site assessments, decisions made in the field, environmental incidents, and specific actions taken (Fig. 4).

Fig. 4. Life cycle of military operations for deployment (http://www.defmin.fi/files/1256/Guidebook_final_printing_version.pdf.)
The creation and periodic updating of such a deliberate, written EMP is essential. This plan is, in fact, a consolidation of multiple programs, procedures, and plans that are integrated both horizontally and vertically within the overall mission execution. The EMP must be approved by the force commander (Environmental guidebook for military operations, 2008).

**Rotation of Forces, Redeployment, Site Transfer, and Site Closure**

For the purposes of this guidebook, “rotation of forces” means the relief in place/transfer of authority (RIP/TOA) of forces by the same troop contributing nation. “Redeployment” means the termination of a nation’s mission or the RIP/TOA from one troop contributing nation to another troop contributing nation. “Site closure” is defined as the transfer of property from the troop contributing nation back to the host nation. “Site transfer” (Fig. 5) refers to the hand-over of property from one troop contributing nation to another.

![Life cycle of military operations for redeployment and rotation](http://www.defmin.fi/files/1256/Guidebook_final_printing_version.pdf.)

**Post-Deployment**

“Post-deployment” refers to all actions to be taken after forces withdraw completely from the area of operations. The vital functions of this phase are typically executed outside the Area of Operation, in the Headquarters of the organization (e.g., EU, UN, NATO) or of the troop contributing nation (Environmental guidebook for military operations, 2008).

Post-deployment functions include archiving important documents, reviewing operational environmental management, collecting lessons learned and monitoring the environmental status in the AOR if necessary.
Fig. 6. Life cycle of military operations for post-deployment
(http://www.defmin.fi/files/1256/Guidebook_final_printing_version.pdf.)

CONCLUSIONS

1. The problem of military waste cannot be treated at national level only; it represents a common European problem. Therefore, a common policy and methodology to tackle this issue should be developed.

2. The opportunities for recycling a part of this military waste should also be considered (especially for metals), due to the shortage of resources and need for sustainable development.

3. There is a need for a new international or European body and financial instrument to deal with the issue, to co-ordinate the efforts of member states and to foster co-operation among neighbouring countries on the utilisation of military waste, and to establish an environmentally safe control mechanism. It would also be useful if this body could co-operate with the environmental branch of NATO and other military alliances in order to harmonise policies and methodologies on the management of military waste.

4. Problems increase with time and therefore early assessment and action saves money. Legislation and restraints increase with time. Detailed understanding can assist all involved parties, including legislators, to shape legislation to meet real goals.

4. Environmental assessment and management methods are available and continue to develop, therefore information transfer and problem definition is urgently required. Education and support for the use of these tools within life management systems is also needed. Environmental assessment is needed for any new materials as part of formal qualification for service use. This could be a 'spend-to-save' issue and may make certain materials more desirabl for use.
REFERENCES


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