

Environmental Tools for Military Activities

October 2019

WASTE HANDLING
(insert specific information, local routines and instructions)

Waste must never be left in the field

- Collect all waste in appropriate containers at approved collection points
- Waste should be sorted according to specific requirements
- Disposal and burning of waste is strictly forbidden - do not bury or burn any waste
- Use parchment or portable latrines for human waste
- Collect hazardous waste always separately

Do Not Litter!



Insert here the specific regulations of waste sorting

For example:

- Paper, plastic, cartons
- Glass
- Food waste
- Cardboard
- Plastic
- Metal, iron cartridges
- Latrine
- Hazardous waste

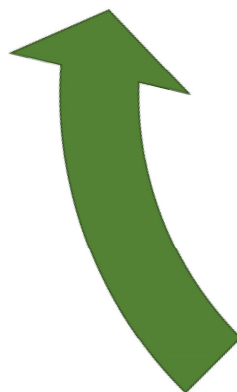
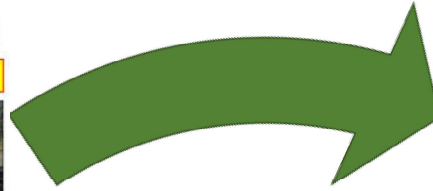


Table of Contents

1.	Introduction.....	1
1.1.	The Purpose	1
1.2.	The Scope.....	1
1.3.	The Target Group and Environmental Roles	2
1.4.	Media Used.....	3
2.	Environmental Principles	3
2.1.	A Precautionary, Proactive, and Preventive EP Approach.....	3
2.2.	Communication to Enhance Credibility	3
2.3.	Polluter Pays.....	4
3.	Life Cycle of the Exercise	4
3.1.	Stage 1: Concept and Specification Development.....	6
3.2.	Stage 2: Planning and Product Development	7
3.3.	Stage 3: Operational Conduct	7
3.4.	Stage 4: Analysis and Reporting.....	7
4.	Checklists and Templates for the EPP and EPO	8
5.	Field Cards for the EPO and Soldiers.....	8
6.	About the Authors	8
7.	Definitions and Acronyms.....	9
8.	References.....	10

Annexes

Annex A: EPP Checklist for Multi-National Exercises and Military Activities

Annex B: EPO Checklist for Multi-National Exercises and Military Activities

Annex C: Template for Memorandum of Understanding

Annex D: Template for Technical Arrangement, Environmental Protection

Annex E: Template for Environmental Annex to an Exercise Plan

Annex F: Template for an Environmental Incident Report

Annex G: EPO Field Card

Annex H: Soldier Field Card Template

Annex I: Soldier Field Card Sample

Environmental Tools for Military Activities

1. Introduction

1.1. The Purpose

This product was created to help harmonize environmental considerations and practices among North Atlantic Treaty Organization (NATO) and European Union (EU)-member nations. If environmental documents, procedures and technical solutions can become more standardized, it will be easier for troops to use them and know where to look for information. Environmental considerations are broader than environmental protection (EP); environmental considerations incorporate not only the EP principle of preventing or mitigating adverse environmental impacts, but also examines the ways in which the environment can affect the safety and health of the troops operating in an exercise, operation, or other military activity. From an exercise standpoint, environmental considerations can enhance the military's public image and can reduce remediation or clean-up costs.

The environmental guidance and responsibilities for both Host Nations (HN) and Sending Nations (SN) contained in this product are designed mainly for use in exercises. However, some of this information could also be applied to other types of military activities.¹ In planning for an exercise, checklists are a simple but critical practice to ensure that environmental considerations have been taken into account. It is recognized that there will always be site-specific considerations for a particular exercise, but some considerations will be common to all scenarios. The checklists and templates contained in this product have been designed to assist Environmental Protection Planners (EPP) and Environmental Protection Officers (EPO)² in the planning and execution of an exercise. For soldiers, applicable information can be inserted easily into field card templates and, once distributed, troops will have the information they need at their fingertips, organized into a more standard format from one exercise to another.

In preparing this document and the annexes (the checklists, templates, and field cards), lessons learned were drawn extensively from Nordic and Baltic exercises and operations, but can be applied throughout NATO or EU. Importantly, NATO terminology and symbols have been adhered to as much as possible, although environmental symbols are not all standardized. Hopefully, these materials can be used as a basis to enhance NATO's Allied Joint Environmental Protection Publications (AJEPPs) in the future, or other national or international documents and practices as applicable.

1.2. The Scope

This product recommends best practices to be used in exercises by members of NATO, NATO Partners, and the EU. They can be used by an individual nation or during bilateral or multilateral exercises. The primary operational domain is land, but some consideration was also given to air and maritime. The product focuses on three levels of guidance:

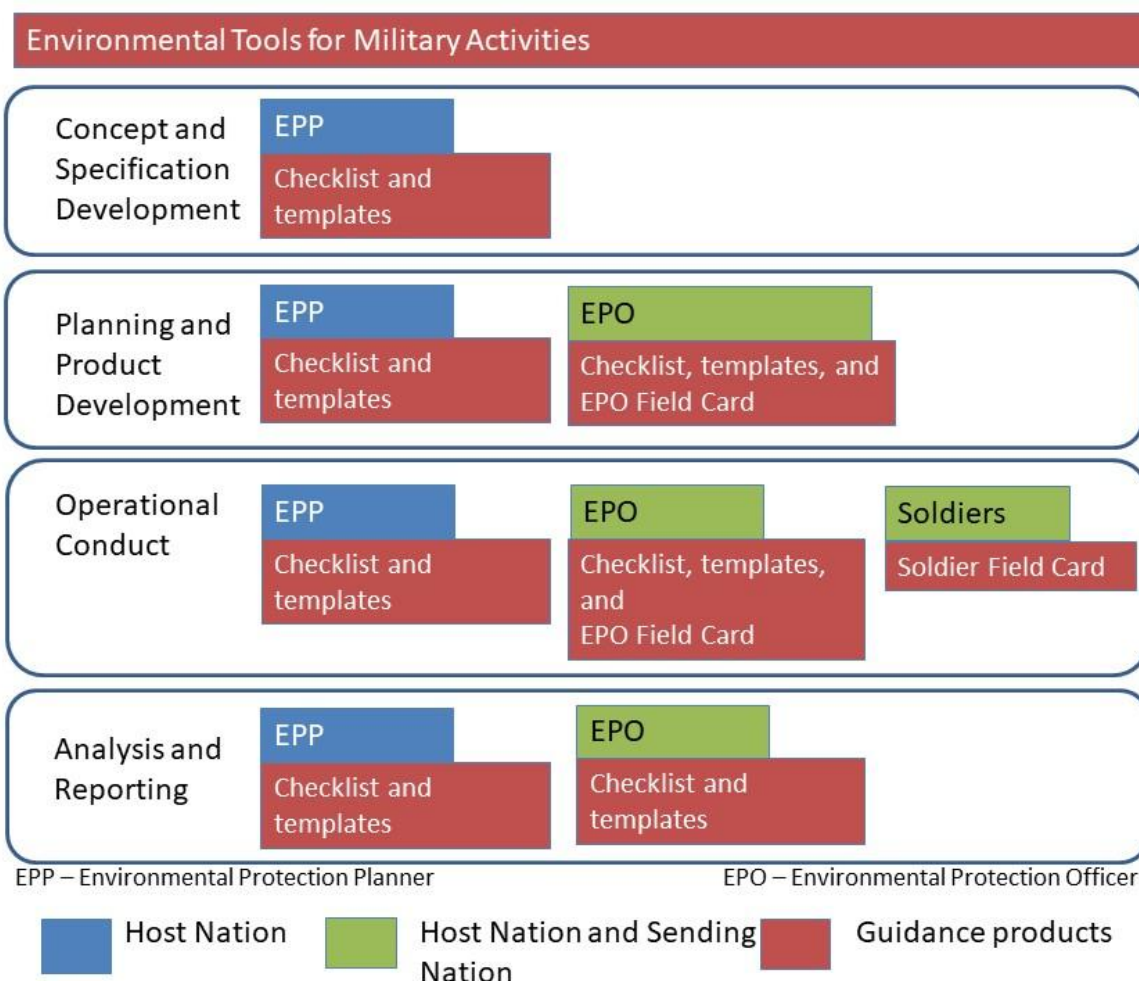
- Strategic: the introductory overview document
- Operational: checklists and links to relevant templates and references for EPPs and EPOs, both among HN and SN (Annexes A and B)
- Tactical: field cards for both the EPO and individual soldiers, adaptable to individualized exercises, taking into consideration issues such as seasonal and environmental variations. These cards contain generic information and place-holders for site-specific information. Template and completed samples for both of these field cards are also included (Annexes G, H and I)

Figure 1 shows what materials are especially useful for different phases of the exercise and for which personnel, including whether they are HN or SN personnel. Checklists and templates to be used in each phase are also noted, but it is important to keep in mind that these are only recommendations and not every applicable document is listed in the figure.

¹ The Environmental Toolbox for Deploying Forces offers additional information for deployments and operations. It can be found by going to <https://community.apan.org/conf/asfr/asfreccwp/environmental-tools-for-military-activities-products/>

² The Environmental Protection Officer (EPO) is an officer, non-commissioned officer or civilian to whom environmental protection responsibilities have been assigned by a commander. The EPO should have EP experience and training, at a minimum having attended the 5-day NATO Military Environmental Protection, Practices, and Procedures Course (NMEPPPC).

Figure 1: Tools Available for Use



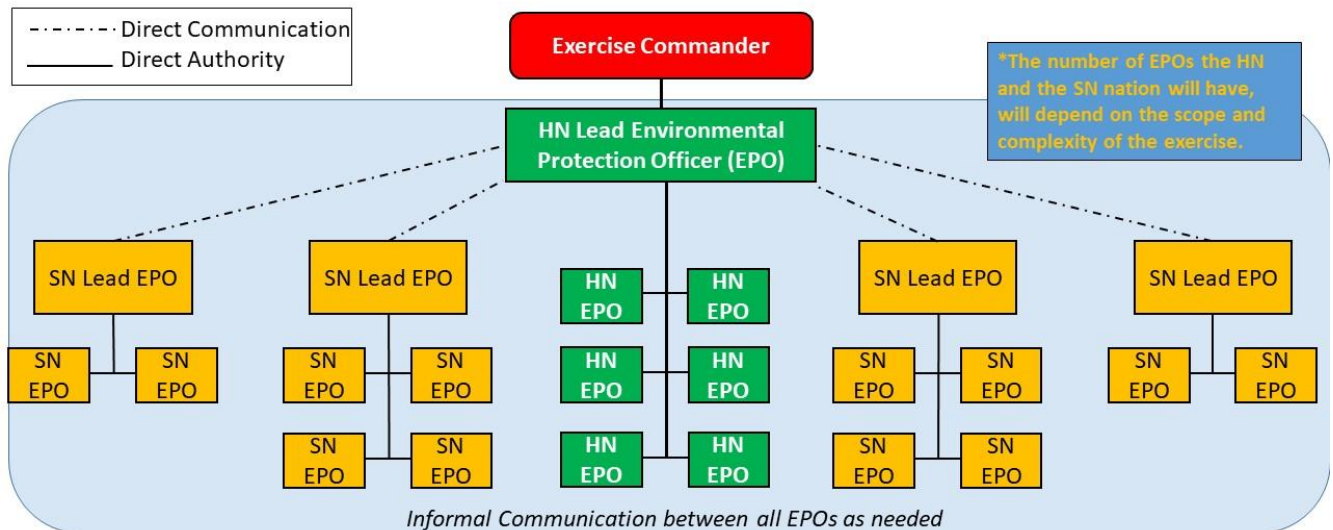
1.3. The Target Group and Environmental Roles

Everyone has environmental responsibilities, so the target audience for this product is broad for both the HN and SN. Environmental considerations need to be taken into account in the earliest stages of exercise planning.

It is recommended that a HN planning staff member with good knowledge of environmental issues be designated the EPP with responsibility for integrating EP considerations. Certainly, the HN-designated lead EPO for the exercise must have environmental knowledge. The HN EPO and EPP should work closely together, using the tools (checklists and templates) developed here; EP inputs are required throughout the life cycle of the exercise. The HN EPP/EPO’s responsibilities include developing field cards by adding site-specific information to the generic version developed here. During the exercise itself, these field cards will be invaluable to all exercise participants, not just the EPO.

Particularly in large-scale exercises, it is common that each HN and SN unit would have a designated EPO; not all these personnel will possess extensive environmental expertise. Just as HN has an EPO lead, each SN should designate a lead EPO. Each SN EPOs will be responsible for direct communications with the HN lead EPO (in addition to the SN’s chain of command). In turn, the HN lead EPO will serve as the centralized environmental POC and the overall environmental advisor to the commander for the exercise. Informal communications among all the EPOs is encouraged to share environmental information. Example of these relationships are depicted in Figure 2, however each exercise can develop its own environmental command structure.

Figure 2. Example of Relationship between HN and SN EPOs for a Multinational Exercise



1.4. Media Used

All the materials and blank templates produced by this working group have been posted on an openly accessible area of the All Partners Access Network (APAN). The materials may be downloaded by anyone (no APAN account is necessary) by going to

<https://community.apan.org/conf/asfr/asfreccwp/environmental-tools-for-military-activities-products/>

Once this information is accessed from APAN, each HN and SN can then decide how to make the Soldier and EPO Field Cards available after all the necessary information has been included, whether through a mobile phone application (app) or by printing them. While an app is one solution, it is not always possible to use this type of media due to military download policies, internet access issues in remote geographic locations, or information security concerns once exercise specific information is filled out.

2. Environmental Principles

Military activities have various impacts on the environment. To promote sustainability, the United Nations (UN), EU, and NATO have defined environmental policies and principles for different military activities, from operations to training. The following environmental principles are important to take into consideration; they are not in conflict with existing UN, NATO or EU guidance, international agreements or legislation. These principles are relevant especially for military exercises and are applicable to national or international activities. Moreover, HN environmental documents will provide specific EP guidance during exercises.

2.1. A Precautionary, Proactive, and Preventive EP Approach

It is vital to observe a reasonable standard of care for the environment when military exercises are conducted. It presupposes sufficient knowledge about applicable environmental laws and procedures, demands an overall cautious approach for the sake of the environment and force health, and requires responding to environmental incidents as soon as possible. The prevention (and reduction) of waste, spills, and other environmental damage is more environmentally friendly and less costly than the disposal of waste and remediation of damage. Part of this is a safety precaution: any environmental damage whose magnitude is unknown should be assumed to be significant and protective measures should be designed to protect human life and the environment. Immediate protective measures should be introduced as soon as possible, and should draw upon the best available technology suitable for the conditions.

2.2. Communication to Enhance Credibility

Through effective communication, the military builds trust and enhances its credibility with the public. While not every detail about an exercise can be published, much of the environmental work can be shared. To the maximum extent possible, the military should be proactive about discussing EP

measures; promoting good environmental stewardship activities; addressing any disinformation that accuses the military of poor environmental practices; admitting if and when there has been environmental damage; and, importantly, how any such damage will be fixed. Throughout the exercise, communication with the public, media, and others is paramount, but should be conducted only by designated HN officials unless otherwise approved by the HN.

2.3. Polluter Pays

Before starting the exercise, it is important to document the existing environmental conditions. This will make it possible to determine whether environmental damage has been caused and, if so, by whom. Producers of waste and environmental damage are ethically and legally (therefore also, generally, financially) responsible for the proper disposal of contamination or remediation of pollution. The Polluter Pays Principle may be applied between nations participating in the exercise. These kind of agreements should ideally be incorporated into one of the exercise planning documents such as a Technical Arrangement. The Polluter Pays Principle may also be applied between the public and HN military in those cases in which private land is used for exercise purposes.

3. Life Cycle of the Exercise

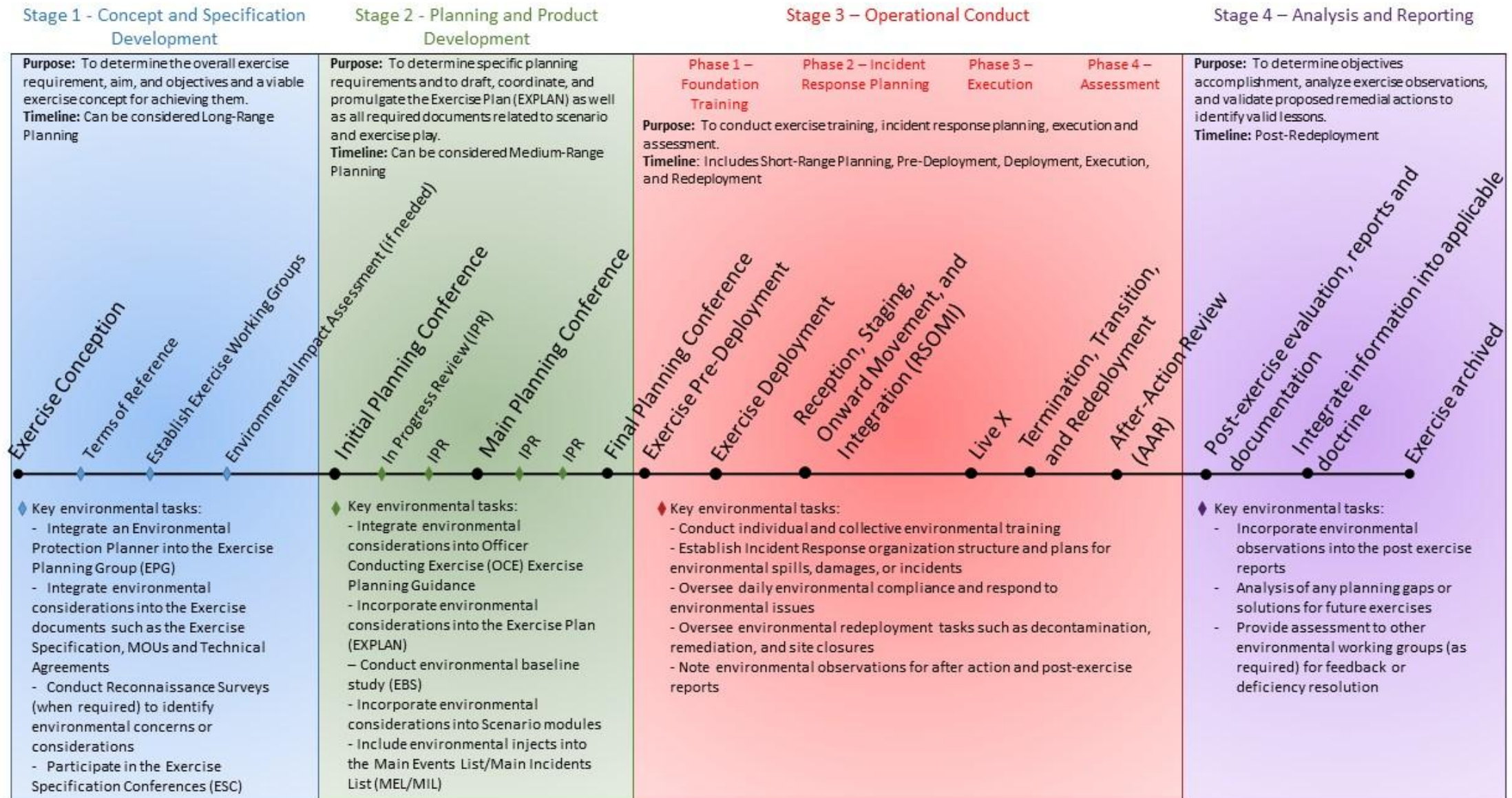
Each exercise necessarily has its own timeline, depending on its complexity, the number of nations and troops involved, etc. Planning can easily begin two years prior to the start of the exercise while payment and remediation for environmental damages can last several years after the exercise.

Regardless of the timeline, each exercise will consist of four stages (Figure 3), as described in NATO's *BI-SC Collective Training and Exercise Directive (CT&ED) 75-3*, dated March 2013. In the example below, the key EP tasks are described for these four stages. While the timeline for each exercise will vary, this provides a template for large-scale exercises.

Environmental considerations play a role in all stages of an exercise. If the environment is taken into consideration early on, environmental challenges are more likely to be minimized. On the contrary, the risk of environmental impacts – which means also increased health and safety risks – increases appreciably if the environment is taken into account too late in the process. For example, if secondary containment is not planned for during the storage of hazardous waste or if refueling happens without necessary precautionary measures, these increase the risk of a spill and the resulting clean-up costs. This increased risk is illustrated in Figure 4, which shows that the risk and cost continue beyond the end of the exercise. This diagram is offered strictly for illustrative purposes because actual cost and remediation timelines vary greatly, depending on the type and extent of contamination. For example, if there is an petroleum, oils, and lubricants (POL) spill on soil that can easily be dug up to a level where all contamination has been removed, this will cost much less – and pose a much lower risk – than if the POL seeps into the groundwater.

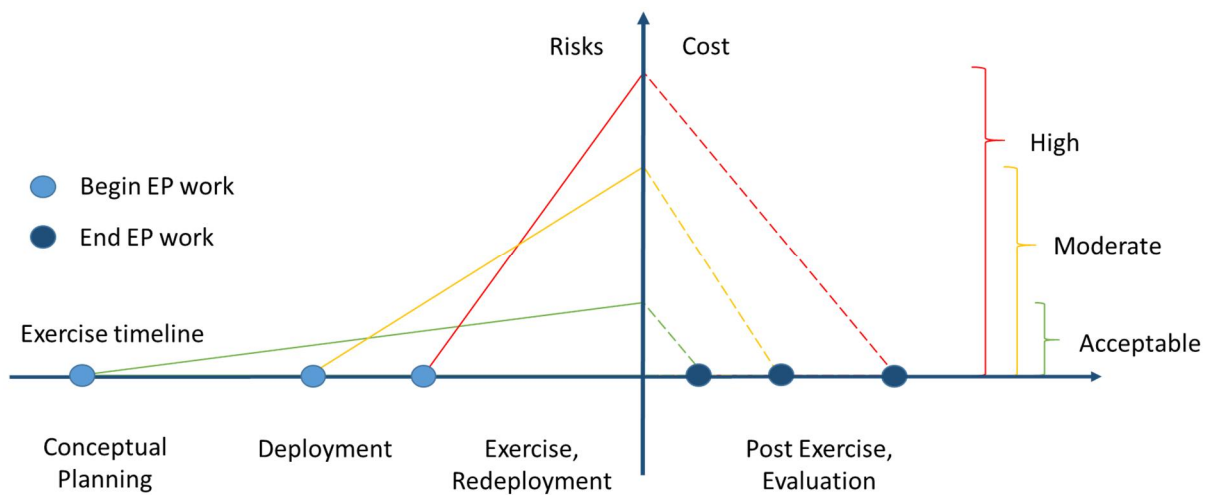
Figure 3: Key EP Tasks in the Exercise Stages

Environmental Considerations in the Planning Process for Multi-National Exercises*



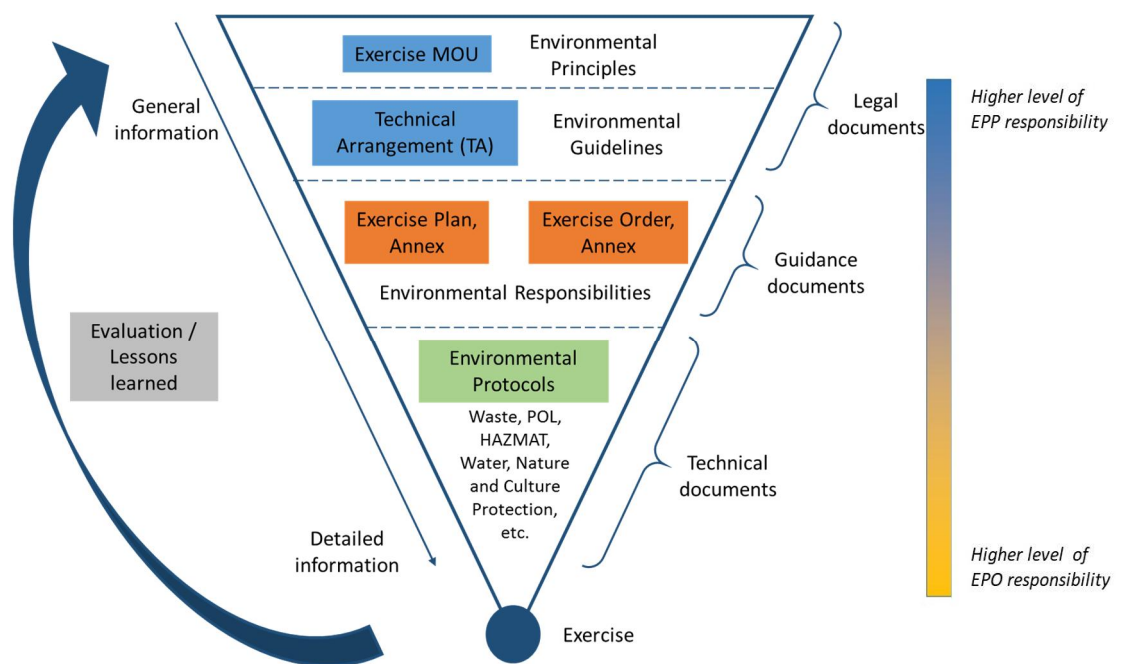
* Reference: BI-SC Collective Training and Exercise Directive (CT&ED) 75-3, March 2013

Figure 4: Delay in Environmental Considerations Increases Risk and Cost



Each exercise will also have different types of documentation. In some cases, there will be an overarching exercise Memorandum of Understanding (MOU) between two or more countries. Under this MOU can be a Technical Arrangement (TA), which outlines the exercise in more detail, including environmental aspects. Both these documents are at a more political, legal level. In parallel, the Exercise Plan and then the Exercise Order provide the guidance, spelling out the roles and responsibilities for each country in the context of that exercise. Environmental roles and responsibilities are included in both of these documents. At the lowest level, there are technical documents, or protocols, on issues such as waste management, POL, and cultural protection. In all cases, an evaluation of what went right and what when wrong in the planning and execution is important to document. These lessons learned should then be incorporated into planning for future exercises. This structure is depicted generically in Figure 5.

Figure 5: Hierarchy of Exercise Documents and EPP/EPO Responsibility



3.1. Stage 1: Concept and Specification Development

The purpose of this initial stage is to determine the overall exercise requirement, aim, and objectives, and a viable concept for achieving them. For the HN, about 24 months in advance of the exercise, the commander should ensure input from the EPP during the planning process and EPP must remain involved in all high-level HN and HN-SN planning meetings, as described in the Checklist annex. This involvement ensures: (1) that environmental considerations are incorporated into the planning process and official documents and (2) that an environmental

message is incorporated into any strategic communications to help demonstrate that the military is committed to protecting the environment.

It is important to have contact at this early stage with the SNs. Approximately one year before the exercise, there should be a high-level planning meeting, confirming which nations will participate and that there is an environmental POC from each nation.

3.2. Stage 2: Planning and Product Development

This stage is focused on determining specific planning requirements and will require coordination between the EPP and HN EPO. Together they must draft, coordinate, and promulgate the exercise plan as well as all required documents. Once these tasks have been accomplished the EPO will assume primary responsibility for environmental matters by the end of stage 2.

Among the HN EPO responsibilities during this stage, he/she will be involved in:

- Conducting the Environmental Baseline Study and Environmental Impact Assessments for the selected location(s)
- Preparing an Environmental Annex for the Exercise Plan to cover both HN and SN responsibilities, to include protocols for management of solid waste, hazardous materials (HAZMAT)/hazardous waste (HW), waste water, spill response and cultural/ natural resources
- Assembling environmental awareness training materials (such as field cards) for HN and SN troops, and continuing to provide inputs to strategic communications. An important part of these communications can be working with the appropriate authorities and obtaining necessary permissions for the potential use of exercise areas.

During this stage, the HN EPO should coordinate a meeting with all the SN EPOs, perhaps in conjunction with the Main Planning Conference. The HN should share planning materials so that the SNs have country-specific environmental information and requirements (e.g., consider groundwater level, noise, biodiversity, etc.; that the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Directive must be followed so it is forbidden to use certain chemicals or weapons and to gain their inputs. Approximately 6 months in advance, the HN EPO should provide EPO and Soldier Field Cards to SNs to allow time for translating the materials (if necessary) and then distributing them.

3.3. Stage 3: Operational Conduct

During this stage, the purpose is to conduct exercise training, incident response planning, execution and assessment. HN and SN troops should have reviewed the environmental training materials prior to the start of the exercise, and the EPOs should continue to ensure sufficient awareness and that troops have their field cards with them. Troops should be familiar with what to do in the event of an environmental incident. Because environmental questions and problems can arise during the exercise, it is important for the HN to have a help desk established to answer any questions or problems and provide feedback to both troops and the public.

EPO responsibilities during this stage include: POL and HAZMAT handling; waste management; spill response and reporting; coordination with logistics personnel on things such as vehicle maintenance areas; quality assurance; and re-evaluation of environmental risk. Above all, it is important to maintain environmental monitoring, reporting and documentation; this is both a HN and SN EPO responsibility.

During the execution and assessment part of this phase, the EPO should inspect the exercise areas to determine if clean-up is necessary, develop a closure list, and collect reports from SN EPOs on any environmental damage or impacts. The EPO should ensure appropriate monitoring of the turn in of waste and disinfection of equipment. The EPO's environmental report should be submitted in accordance with the exercise plan environmental protocol, to include incidents (such as spills) and other environmental damage (for example, caused by maneuvering).

3.4. Stage 4: Analysis and Reporting

The purpose of this final stage is to determine how well the objectives were accomplished, analyze exercise observations, validate proposed remedial actions, and identify valid lessons learned. From the EPO perspective, any planning gaps should be identified, complaints and corrective actions should be evaluated to determine what procedures or methods worked best,

and then the necessary work should be carried out. Claims and settlements must be processed, with the HN Lead EPO having responsibility for reviewing environmental-related costs.

An After Action Report (AAR) summarizing this work provides important documentation and should be shared with the HN EPP so that the environmental information is incorporated into the overall exercise AAR. It would also be helpful for the HN lead EPO to send the environmental AAR to all SN lead EPOs. Exercise AARs should be archived as appropriate and shared with the Supreme Headquarters Allied Powers Europe (SHAPE) Environmental Officer and NATO's Environmental Protection Working Group (EPWG). It is recommended that NATO create an AAR exercise repository to serve as a centralized location for these AARs.

4. Checklists and Templates for the EPP and EPO

The checklists for the EPP and EPO pose specific questions to ensure all environmental issues have been covered at each stage of the exercise. The checklists include areas to indicate when the action has been completed and additional reference information when available. The checklists may be amended to meet exercise-specific requirements or best practices.

Several templates are provided. One is a sample MOU between nations; another is a Technical Arrangement, both pertaining to a planned exercise. Another template is an environmental annex for a land-based exercise. Finally, a template for an Environmental Incident Report is also included. These templates may also be amended to be more exercise-specific.

5. Field Cards for the EPO and Soldiers

The field cards for the Soldier and EPO capture the key environmental guidance and procedures for an exercise. The intent of the Soldier Field Card is to provide concise information to the Soldier on the emergency procedures, environmental protection restrictions and key exercise guidance. The EPO Card will be a more detailed document outlining the specific guidance and procedures for environmental protection during the exercise. For both the cards, most of this information is relevant to all exercises and the field cards should require only minor adjustments and modifications to include site-specific information for the exercise, such as maps, information about restricted areas and operations, etc. The EPO and Soldier Field Card templates are posted on the APAN website, and the type information to insert have been identified on power point slides. This information can then be tailored and pasted into the template to create a field card for the specific exercise.

6. About the Authors

These products were developed through a trilateral working group of subject matter experts (SMEs) from Finland, Sweden, and the United States. They do not reflect the official policies or products of any nation; rather, they were created to share best practices based on the SMEs' knowledge and experiences. The authors are listed alphabetically below. We would like to thank other SMEs who have taken the time to comment on drafts of these materials, but any errors or omissions are ours alone.

- Björn Almqvist (SE) is a Sustainability Officer at the Swedish Armed Forces, Stockholm.
- Susan Clark-Sestak (US) is a Senior Research Staff Member at the Institute for Defense Analyses, a Federally Funded Research and Development Center, Alexandria, VA.
- David Fierner (US) is an Environmental Programs Lead within the U.S. European Command Environmental Security Program, Stuttgart, Germany
- Ryan Garber (US) is the Integrated Training Area Management (ITAM) Coordinator for the Joint Multinational Readiness Center, Hohenfels, Germany.
- Abigail Goss (US) is the U.S. European Command Environmental Security Program Manager, Stuttgart, Germany.
- Naznoush Habashian (SW) is the Director of Sustainability at the Swedish Armed Forces, Stockholm.
- Mikell Hager (US) is the Technical Advisor for the Directorate of Environmental Integration at the US Army Engineer School, Fort Leonard Wood, Missouri.
- Sami Heikkilä (FI) is an Planning Officer in the Finnish Ministry of Defence, Helsinki.

- Terhi Helkala (FI) is an Environmental Planner at the Pori Brigade in the Finnish Defence Forces, Säkyliä.
- Reija Kalajo (FI) is an Environmental Specialist at the Defence Estates Finland , Helsinki.
- Johannes Ljunggren (SE) is an Environmental Coordinator in the Swedish Armed Forces for the Skaraborg Regiment, Skövde.
- Teemu Pasanen (FI) is an Environmental Specialist at Finnish Defense Forces Logistics Command, Tampere.
- Annelie Strand (SE) is an Environmental Coordinator at the Swedish Armed Forces' Norrbotten regiment I 19, Boden.

7. Definitions and Acronyms³

- AAR: After Action Report
- AJEPP: Allied Joint Environmental Protection Publication
- APAN: All Partners Access Network
- App: Application
- AUL: Authorized Use List
- BI-SC: Bi-Strategic Command
- CECC: Commander's EXSPEC Confirmation Conference
- COA: Course of Action
- CT&ED: Collective Training and Exercise Directive
- EBS: Environmental Baseline Study. A study of the environmental conditions in a defined area prior to the commencement of military activities.
- ECR: Environmental Condition Report. A report on the environmental conditions in a defined area. Note: the report may be periodic or may follow an environmental incident.
- ECS: Environmental Closeout Study. A study of the environmental conditions in a defined area at the cessation of military activities.
- EP: environmental protection. The prevention or mitigation of adverse environmental impacts.
- EPG: Exercise Planning Group
- EPO: Environmental Protection Officer. The Environmental Protection Officer (EPO) is an officer, non-commissioned officer or civilian to whom environmental protection responsibilities have been assigned by a commander. It is recommended that every EPO (or at least all lead EPOs for an exercise) should have EP experience and training, at a minimum having attended the 5-day NATO Military Environmental Protection, Practices, and Procedures Course (NMEPPPC).
- EPP: Environmental Protection Planner
- EPWG: Environmental Protection Working Group
- ESC: Exercise Specification Conference
- EU: European Union
- EXORD: Exercise Order
- EXPLAN: Exercise Plan
- EXSPEC: Exercise Specification
- FI: Finland
- GIS: Geographic Information System
- HAZMAT: Hazardous material(s). Material that may pose a risk for the population, property, safety or the environment owing to its chemical or physical properties or the reactions that it may cause.
- HM: Hazardous material(s)
- HN: Host Nation
- HW: Hazardous Waste
- IPC: Initial Planning Conference
- ITAM: integrated training area management
- MC: Military Committee
- MEL/MIL: Main Events List/Main Incidents List
- MOU: Memorandum of Understanding

³ Note: all definitions are from NATO AJEPPs unless otherwise noted.

- N/A: Not Applicable
- NATO: North Atlantic Treaty Organization
- NMEPPPC: NATO Military Environmental Protection, Practices, and Procedures Course
- OPOD: Operational Order
- PFP: Partnership for Peace
- POC: Point of Contact
- POL: Petroleum, Oils and Lubricants
- PPE: Personal Protective Equipment
- REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
- RSOMI: Reception, Staging, Onward Movement, and Integration
- SHAPE: Supreme Headquarters Allied Powers Europe
- SME: subject matter expert
- SN: sending nation
- SOP: Standard Operating Procedure
- SE: Sweden
- TA: Technical Arrangement
- UN: United Nations
- US: United States

8. References⁴

Environmental Guidebook for Military Operations, 2008, available at https://www.defmin.fi/files/1256/Guidebook_final_printing_version.pdf

Environmental Toolbox for Deploying Forces, updated 2017, available at <https://community.apan.org/conf/asfr/asfreccwp/environmental-tools-for-military-activities-products/>

European Union Military Concept on Environmental Protection and Energy Efficiency for EU-Led Military Operations, 22 January 2013, Reference 13758/12

Memorandum of Understanding (MOU) between the Government of the Republic of Finland and Headquarters, Supreme Allied Powers Europe Regarding the Provision of Host Nation Support for the Execution of NATO Operations/Exercises/Similar Military Activity, 4 September 2014.

NATO BI-SC Collective Training and Exercise Directive (CT&ED) 75-3, March 2013.

NATO Military Committee (MC) 469/1, *NATO Military Principles and Policies for Environmental Protection (EP)*

NATO STANAG 2582, *Environmental Protection Best Practices and Standards for Military Camps in NATO Operations (AJEPP-2)*

NATO STANAG 2594; *Best Environmental Protection Practices for Sustainability of Military Training Areas (AJEPP-7)*

NATO STANAG 3833, *Symbols for Land Forces Training Area Maps*, July 2016

NATO STANAG 6500, *NATO Camp Environmental File during NATO-Led Operations (AJEPP-6)*

⁴ Note: to ensure you are using the latest version of a NATO document, access NATO publications through: https://www.nato.int/cps/en/natohq/topics_124879.htm.