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EUROPEAN EXTERNAL ACTION SERVICE



**EUROPEAN UNION
MILITARY STAFF**

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**CSDP/PSDC
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NOTE

From: European Union Military Committee

To: European Union Military Committee

No. Prev. doc.: EUMC Mtg Doc 16/12

Subject: European Union Military Concept on Environmental Protection and Energy Efficiency for EU-led military operations

Delegations will find attached the European Union Military Concept on Environmental Protection and Energy Efficiency for EU-led military operations, which was agreed by the EUMC on 12 September 2012.

EUROPEAN UNION
MILITARY CONCEPT
ENVIRONMENTAL PROTECTION AND ENERGY EFFICIENCY
FOR EU-LED MILITARY OPERATIONS

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REFERENCES

- A. Consolidated Version of the Treaty on European Union and of the Treaty on the Functioning of the European Union, (Official Journal of the European Union, 2010/C 83/1, dated 30 March 2010).
- B. European Security Strategy (Council doc. 15849/ 03, dated 5 December 2003).
- C. Report on the Implementation of the European Security Strategy (S407/ 08, dated 11 December 2008).
- D. EUMC Glossary of Acronyms and Definitions. (ARES (2012) 113251 dated 24 January 2012; updated bi-annually).
- E. EU Principles for EU Headquarters (Council doc. 11113/ 10, dated 15 June 2010)
- F. EU Concept for Military Planning at the Political and Strategic level (Council doc. 10687/ 08, dated 16 June 2008).
- G. EU Concept for Military Command and Control (Council doc. 10688/ 08, dated 16 June 2008).
- H. EU Concept for Force Generation (Council doc. 10690/ 08, dated 16 June 2008).
- I. EU Military Rapid Response Concept (Council doc. 5641/1/09 Rev. 1, dated 27 April 2009).
- J. Military Engineering Concept for EU-led Military Crisis Management Operations (Council doc. 11853/07, dated 13 July 2007 - *under revision*).
- K. EU Concept for Logistic Support for EU-led Military Operations (Council doc. 8641/ 11, dated 4 April 2011).
- L. The Host Nation Support Concept for EU-led Military Crisis Management Operations (Rev. 1), (Council doc. 10603/06, dated 15 June 2006 - *under revision*).
- M. Health and Medical Support Concept for Military EU-led military Crisis Management Operations, REV 1 (Council doc. 10901/07 Cor. 1, dated 15 June 2007).
- N. EU Concept for Civil-Military Cooperation for EU-led Military Operations (Council doc. 11716/ 08, dated 11 July 2008).
- O. EU Military Lessons Learned Concept (Council doc. 12322/ 11, dated 1 July 2011)
- P. EU Battlegroup Concept (Council doc.13618/ 06, dated 5 October 2006).
- Q. Revision 2 of the EU Concept for Reception, Staging, Onward Movement and Integration (RSOI) for EU-led Military Operations (787/12, dated 10 May 2012).

- EU Operation Headquarters Standard Operating Procedures (Council doc. SN 3649/ 10, dated 1 September 2010 - *under revision*).
- R. EU Force Headquarters Standard Operating Procedures (Council doc. SN 3821/ 10, dated 20 September 2010 - *under revision*).
- S. HQ EUFOR Environmental Package (Environmental Protection Policy, Environmental Management System Policy and SOP 6292-Environmental Status Assessment Guideline) (dated 30 May 2005).
- T. Community Environment Action Programme 2002-2012. EU Commission, 2002.
- U. EU Strategy for Sustainable Development. EU Commission, 2006 (rev.).
- V. Guiding Principles for Sustainable Development. EU Council, June 2005.
- W. Council conclusions of 10 June 2011 on the European Commission's Communication on an Energy Efficiency Plan 2011 (10709/11, 26 May 2011).
- X. Hague Convention IV on the Law and Customs of War on Land (1907).
- Y. Geneva Conventions (1949), and Additional Protocol I and II (1977).
- Z. Convention on Civil Liability for Damage resulting from Activities dangerous to the Environment (1993).
- AA. International Convention on Civil Liability for Oil Pollution Damage (1971).
- BB. Basel Convention on the Control of Trans-boundary Movements of Hazardous Waste and Disposal (22 March 1989).
- CC. International Convention for the Prevention of the Pollution from Ships (MARPOL, 1973/ 78).
- DD. Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter (London Convention, 1972).
- EE. Convention on Biological Diversity (1992).
- FF. Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat (1971).
- GG. Convention on International Trade in Endangered Species of Wild Life Fauna and Flora (dated 3 March 1973).
- HH. The Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict (dated 14 May 1954) and its two Protocols (1954 and 1999).
- II. Convention Concerning the Protection of the World Cultural and Natural Heritage (1972).
- JJ. Regulation allowing voluntary participation by organisations in a Community Eco-Management and Audit Scheme (EMAS) (EC No 1221/2009, dated 25 November 2009).
- KK. Regulation (EC) No 1013/ 2006 of the European Parliament and Council of 14 June 2006 on Shipments of Waste, OJ L 190, 12 July 2006, p. 1 (as amended).

- LL. Environmental Guidebook for Military Operations (FI-SE-US, March 2008).
- MM. EU Member States lessons observations on Libya crisis. EEAS (00116/12), Enclosure 1, p.2 (Lesson No. 5).
- NN. Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage. (Official Journal of the European Union, L 143/56, 30 April 2004).

A. INTRODUCTION

1. The EU as a leading proponent of international action on environmental protection (EP) is committed to sustainable development worldwide (Ref. A (Articles 3 and 21 TEU and Articles 191-193 TFEU) and W). Therefore the EU promotes measures at the international level to deal with regional and worldwide environmental problems, and EP requirements are integrated into the various policies of the EU.
2. During military operations the appropriate and proportional use of force to fulfil the military mission while avoiding or minimising collateral damage is of utmost importance for the overall military success, and for the eventual transition of responsibility to local authorities. The impact of military action on the civil population, its cultural property and on the environment needs to be limited in order to comply with international law, to maintain the public support in the region as well as back at home, and - in the longer term - to enable successful reconstruction and development efforts. Damage to the environment in an operations area - especially when accompanied by natural resources scarcity - can lead to instability and result in new conflicts, whereas the preservation and protection of the environment during a military operation can foster lasting security and development. Therefore, EP factors need to be taken into account during the planning and conduct of EU-led operations.

B. CONCEPTUAL FRAMEWORK

3. The European Security Strategy (ESS, Ref. B) acknowledges the growing role of the EU as a global player and its responsibility for global security. It highlights the interdependence between security and development, i.e. no sustainable development without peace and security, and no sustainable peace without development. Consequently more coherence between the different instruments and civil and military capabilities and a common agenda, including environmental policies, is needed. In December 2008, the EU issued a report on the implementation of the ESS (Ref. C), which added new challenges, such as the growing vulnerability to energy supply routes, climate change¹ and environmental degradation.

¹ Climate change is best viewed as a threat multiplier which exacerbates existing trends, tensions and instability. It is important to recognise that the risks are not just of a humanitarian nature; they also include political and security risks that directly affect European interests. The challenge in the context of environmental protection is that climate change threatens to overburden those states and regions which are already fragile and conflict prone, and have an increased likelihood for military activities.

4. The Common Security and Defence Policy (CSDP) under the Treaty of the European Union (Ref. A) will provide the operational capacities, drawing on civilian and military assets from the EU Member States, which the EU may use on operations and missions in areas outside the Union for tasks such as joint disarmament operations, conflict prevention, peace-keeping, and tasks of combat forces in crisis management, including peace-making and post-conflict stabilisation. In order to meet the full range of CSDP tasks while taking account of the new challenges and the interdependence between security and development, EP needs to be adequately considered during EU-led operations.

C. AIM

5. The aim is to establish the principles and the responsibilities to meet the requirements of EP during EU-led military operations in support of the CSDP, and to promote a common understanding of EP during EU-led operations, in order to enhance interoperability among EU Member States, between the EU and other international organisations, and with the EU's strategic partners.

D. SCOPE

6. This concept provides the strategic guidance for the consideration of EP during all phases of EU-led military operations. It covers the various tasks of EP, including cultural property protection. Furthermore, the concept addresses relevant energy-related aspects, such as energy efficiency and the use of renewable energies during military operations. Finally, it provides an overview over associated activities which will enhance EP on the longer run, namely training, education and capability development. Lessons learned from preceding EU operations, as well as principles and environmental best practises of UN and NATO, are taken into account, whenever appropriate. Health related issues are detailed in the respective EU concept (Ref. M).

E. DEFINITIONS

7. In the context of this concept the following definitions apply:
 - a. Environment: The surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation.

- b. Environmental Protection (EP) consists of the protection of the "environment" taken in the sense of the human and natural environment, including the ecosystems that encompass water, air, ground, flora and fauna. The environment includes natural and cultural resources as well as infrastructure dedicated to the protection of environment¹.
- c. Sustainable Development (SD) means development that meets the needs of the present without compromising the ability of future generations to meet their own need² (Ref. W). In this context, sustainable military activity (SMA) transposes the above mentioned SD into military activities. The human and natural environment in an area of operations is to be preserved to the widest extent possible, so that its resources remain sufficiently available in the indefinite future, while fulfilling the military mission and meeting the military operational needs. Moreover, SMA means that every action represents an interaction with the environment, which is sustainable if it avoids long lasting collateral effects or even irreversible damages.
- d. Cultural Property Protection (CPP) means the protection and safeguarding of, and the respect for, cultural property as defined by International Law³.
- e. Alternative Energy is the collective term for energy derived from sources independent of fossil and nuclear fuels. It includes:
 - (1) *Renewable Energy* – derived from wind, sun (thermal, photovoltaic and concentrated), water (hydro, tidal and wave), thermal (geothermal and thermal gradient) and biomass,
 - (2) *Alternative Fuels* – fuels that are non-fossil based such as synthetic and bio fuels,
 - (3) *Alternative Conversion and Storage* – means of converting and storing energy such as fuel cells and novel batteries.

F. ENVIRONMENTAL THREATS

- 8. Prior to any operation and advise on EP measures, it is essential to analyse and identify the different aspects of the environment within an operations area, which either might be impacted by military action, or need to be protected from damage by other actors.
Furthermore it is advisable to record the overall environmental condition at the very

¹ Definition according to Ref. D (EUMC Glossary of Acronyms and Definitions)

² The EU reference acknowledges the term introduced by the "Brundtland" World Commission on Environment and Development

³ Definition according Ref. II (The Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict)

beginning of a military operation, as a reference for later examination. The following characteristics are of particular importance:

- Environmental condition of an operations area, including water and air quality, its current use, natural resources, biodiversity, wildlife and endangered species
- Regional climate
- Cultural resources
- Demographic conditions.

9. Military and other parties activities can impact and threaten the environment in many ways:

- Pollution and contamination of water, air and soil,
- Noise,
- Degradation of wildlife and biodiversity,
- Damage to natural and cultural resources.

10. The development of appropriate measures to mitigate negative effects of the military operation on the environment, and the deduction of corresponding EP tasks for the implementation during the conduct of the operation, should be embedded in the military planning process.

G. PRINCIPLES

11. EU policies and principles should be applied as much as possible to ensure coherence and maintain the EU's credibility in environmental affairs. However, due to the nature of military action constraints might arise when domestic laws and rules come in conflict with military needs.

a. Military Necessity

In case of a conflict between MS domestic regulations and military needs, the military necessity principle (see below) may justify overriding EP where this is necessary to ensure overall success of the operation.

Real operational theatre military activities present unique challenges that are not typically associated with peacetime domestic routines or training activities. The use of military force is justified to the extent that is necessary and proportionate to achieve a defined military objective and in accordance with applicable rules of engagement or self-defence. When a conflict arises between operational imperatives and EP principles and policies during EU-

led operations, operational imperatives will usually have priority. Such friction must be avoided or mitigated by early integration of environmental considerations into all aspects of operational planning, training and execution of the operation.

b. Preventive Action

Prevention (and reduction) of waste and environmental damage is more environmentally-friendly and less costly than disposal of waste and rectification of damage. It requires to address EP from the first stage of an operation on.

c. Proximity

This principle calls for rectification at source. Therefore, the environmental damage and waste should to be treated or disposed at, or close to, the location where the incident happened in order to avoid the risks and costs connected to transport.

d. Polluter Pays

In compliance with EU¹ and EU Member States regulations as well as with agreements with the HN where relevant, producers of waste and environmental damage are ethically and legally (therefore also financially) responsible for the proper disposal or remediation.

e. Sustainable Development

The EU has made strong efforts to incorporate sustainable development into its political structure as a guiding principal and strategy. Essential elements of sustainable development are economic and social development, sustainable consumption, clean energy and environmental conservation (Ref. V).

f. Energy Efficiency

The EU and its Member States promote investment in energy efficient and sustainable low carbon technologies. For the sake of consistency, but even more due to added value for the military, this approach should be maintained to the extent possible during EU-led military operations.

g. Distinction

This principle distinguishes between military and civilian objects and persons. According

¹ Ref. OO: Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage.

to International Humanitarian Law (Ref. Y/ Z/ II/ JJ), indiscriminate or direct attacks against civilian objects are prohibited. Military objects are those that by nature, location, purpose or use make an effective contribution to military action and whose total destruction, capture or neutralisation, in the circumstances ruling at the time, offers a definite military advantage. Environmental or cultural sites are classified as civilian targets, and their targeting would contradict the principle of distinction, subject to exceptions recognised under international law.

h. Proportionality

Proportionality could be defined, as the fact that the response must be commensurate with the threat posed and the damage it may cause and that it must be limited to the degree, intensity and duration necessary to eliminate the threat.

i. Collective Responsibility

The EU and the Troop Contributing Nations (TCNs) share a collective responsibility for the protection of the environment of the Host Nations (HNs). The EU Operation Commander (OpCdr) is responsible for the identification of EP contingencies and requirements, and for issuing directives for their proper fulfilment. He has the authority to establish EP procedures and suitable standards, enforcing them in a manner consistent with this concept and within the remit of his authority to all assigned units when no TCNs' EP measures exist. The designated OpCdr or FCdr may negotiate EP arrangements within the framework of the SOFA or any arrangement related to Host Nation Support (Ref. L).

j. Due Diligence and Precautionary Action

This principles calls for a reasonable standard of care for the environment during the conduct of military operations. It presupposes sufficient knowledge concerning the applicable environmental laws and procedures, demands an overall cautious approach for the sake of the environment, and response to environmental incidents as soon as possible. Part of this is safety precaution: If the immediate security situation permits, any environmental damage where the magnitude is unknown should be assumed as significant, and protective measures should be designed to protect human life and the environment. Where the security situation precludes instant protective measures they should be induced as soon as possible.

k. Comprehensiveness

As today's security challenges are often very complex, the involvement of various governmental and non-governmental actors and their cooperation in a comprehensive manner is required to terminate a conflict and create lasting stability. Security and development are intertwined and depend on each other: Security will only last if development efforts are successful, which in turn require a sufficient degree of security. Therefore, current crisis management has to consider the duality of security and development, as well as the aftermath of a conflict. EP supports sustainable development, as one of the pre-conditions for conflict termination, and therefore needs to be considered in all phases of a military operation. Due to the many TCNs and other actors involved, early and close coordination among them and with the HN is mandatory, and frequent information exchange is essential for the implementation of EP principles and standards in planning for and conduct of the operation. This includes comprehensive information of the HN in case of significant environmental damage.

l. Multi-nationality and Global Reach

EU-led military operations are inherently multinational. Notwithstanding the various national legal regulations with regard to EP and the ultimate responsibility each nation bears for the actions of its own forces ('polluter pays'), a closer degree of harmonisation is required through establishment of an overarching set of environmental principles and regulations for all EU-led military activities. CSDP operations can be performed worldwide (outside of the EU), which implies that operations could be conducted in many different environments, with different environmental risks, diverse EP legal frameworks and varying EP awareness. The potential global reach will require a logistic ad-hoc organisation in an operations area and specific arrangements with the HN.

m. Early Planning

EP is a crosscutting and specific issue, which affects the planning process in many ways. The inclusion of EP issues at an early stage during the planning process, accompanied by continuous EP risk management during the conduct of the operation, is critical for preventing irreparable damage to sites with natural, cultural, and historic significance, which would complicate the overall achievement of mission objectives (Ref. II/ JJ). Sufficient expertise is required within an HQ during the whole planning process, and in the various planning disciplines. This calls for early manning of the HQ with an EP advisor and implementation of proper planning and consultation processes. Early advise to the

commander on all EP and CPP related issues and timely co-ordination with the relevant staff elements, from the earliest planning stages on, is crucial in order to:

- Integrate EP into the execution of an operation without friction, and to avoid corrections at a later stage,
- Support and protect the commander's decision making process,
- Put in place the necessary organisational and financial procedures.

n. Readiness

The EU has no standing Operation/ Force Headquarters (OHQ/ FHQ) nor forces to draw upon. OHQ/ FHQ core staffs and the EU Battlegroups (Ref. P) are available at a high level of readiness, but remain under EU MS control until it is decided to launch a specific CSDP operation. In this case they are provided by EU MS through a process described by the EU Concept for Force Generation (Ref. H). With regard to EP expertise in the HQ's, the EU relies on early availability of EP experts from the EU MS and from other willing participating States. With regard to EP deployable facilities, such as materiel, systems, machineries and related drivers in the HQs, the EU relies on early availability from the EU Member States. Consequently, their readiness level must match the overall readiness state of EU forces, including the EU Battlegroups. Furthermore, EU MS are responsible for the inclusion of EP in pre-deployment training.

o. Transparency

EU-led actions, backed by political will, benefit from positive public understanding. This can be further enhanced by an effective and transparent public information policy as part of the EU comprehensive communication strategy. Proper implementation of EP and CPP policies and consequent use of renewable energy sources will support a very positive image of a military operation.

p. Interoperability

A sufficient degree of interoperability is required to cooperate during EU-led multinational operations. This also applies to the EP legal framework, procedures and standards. Best Practises and experience from other international organisations and countries¹ should be considered by the EU whenever appropriate.

¹ A good example is the Environmental Guidebook for Military Operations (Ref. MM), which was jointly developed by SE, FI and the USA.

H. LEGAL FRAMEWORK

12. EU military missions will be conducted based on the Status of Forces Agreement (SOFA), which could be complemented by a Technical Arrangement (TA). HN's environmental law will be respected. The OpCdr or FCdr can issue complementary and additional directives.
13. The EU commander is responsible for all appropriate measures within his power to ensure the observance of relevant environmental obligations, and for their inclusion in the OPLAN.
14. Each TCN is responsible and accountable for the actions of its own forces, based on their own national law and regulations and taking into account the HN legislation (laws, regulations limitations and constraints). Each individual civilian and military member of an EU contingent is accountable for his/ her own actions ('polluter pay' principle) and for ensuring that his/ her behaviour is in full compliance with the overall EP objectives of the specific operation, the EP principles outlined in this concept, the SOFA/ TA and the respective national law.

I. MAIN TASKS

15. EP main tasks can be categorised as follows:
 - Prevent and reduce environmental damage,
 - Conduct waste management,
 - Achieve energy efficiency,
 - Recover from negative environmental effects,
 - Protect EP installations and resources (including cultural property and biodiversity).

a. Prevent and Reduce Environmental Damage

Prevention of environmental damages during EU-led military operations requires a proactive approach, which can be achieved by early consideration of EP relevant aspects in the planning process. EP needs to be seen as an integral part of the military planning process, and EP risk management is the contribution to the planning process and to the development of standard operating procedures.

Following the principle of military necessity, the level of prevention against environmental effects can be reduced whenever a conflict between operational imperatives and EP requirements arises. However, consistently with other stated principles, once the conditions for the application of military necessity have ended and acceptable security conditions are

restored, recovery actions must start as soon as possible. Other factors influencing EP prevention are security considerations and the overall environmental knowledge and awareness in the staff and the contingent. As EP prevention is likely to be reduced by these factors, damage cannot be avoided at all times, and therefore containment and reduction are essential elements of EP. An acceptable level of reduction can be achieved through minimising the use of pollutants and emissions to the environment, reduction of the use of hazardous materials and by using alternative materials, for example renewable energy sources.

b. Conduct Waste Management

Waste management is mainly a logistic task (Ref. K), which is to be conducted in close cooperation between the TCNs and the HN, whenever possible through the FCdr. It emanates mainly from dumping of human waste, wash and rinse water, petrol/ oil/ lubricants (POL) and hazardous materials spills and releases, open burning, emissions from fuel and coolants, fumes, generation of solid waste and improper handling of medical waste. Waste should be primarily prevented. If that is impossible, the waste should be reused or recycled. Only the last option is disposal (waste hierarchy). The following list illustrates the waste management measures in a descending priority order:

- Reduction/ Prevention,
- Reuse,
- Recycling,
- Disposal and shipment.

Following the 'due diligence' and 'precautionary' principle waste should be primarily avoided. Successful implementation of preventive measures will depend on early consideration of EP aspects. The establishment of an environmental risk management during the planning stage, and proper waste management and monitoring during the conduct phase will be of great importance to mitigate EP incidents. For this purpose, a Waste Management Plan should be developed, as a basis for all related orders and directives.

Special attention needs to be given to the handling, storage and disposal of hazardous waste, as special legal and other requirements apply.

Disposal and shipping is only the last option. Solid wastes should be disposed by incineration or in landfills in close proximity to the location where the waste originated. If

unavoidable, transboundary shipments of waste to the EU or to States other than EU MS will be conducted in accordance with applicable legislation¹.

c. Achieve Energy Efficiency

Energy supply is essential for any military operation. Today's military operations rely almost entirely on fossil fuels and primary batteries to supply the necessary energy. The longer the duration and the more complex the operation, the more dramatically the burden on the logistic supply chain will increase. In practice this implies the following:

- (1) The environment will be heavily burdened from the subsequent hazardous emissions associated with the logistical transport and usage fossil.
- (2) The dependency constrains the operational effectiveness in terms of endurance, autonomy and degrees of required mobility.
- (3) Operations are not only susceptible to fluctuations in fuel prices but also hampered by the compelling cost of fuel convoys. The fully burdened cost of fuel is a measure of these two parameters and contributes significantly to the overall cost of an operation.
- (4) Supply convoys in turn introduce risks with regard to the safety of personnel in theatre.
- (5) The protection required to mitigate risks to the safety of personnel further degrades the operational effectiveness as the military personnel involved in the convoy protection is unavailable for other tasks.
- (6) As the continued success of an operation depends on constant energy supply, the TCNs depend on the continuous delivery from fuel supplying States,
- (7) A more efficient approach to sustainable energy supply is needed in EU-led military operations in order to become less vulnerable and more flexible. This could be achieved both by reducing the energy consumption and by increasing energy efficiency.

Improvement of energy efficiency necessitates organisational, behavioural and technological enhancements. In terms of technology this would encompass both the energy supply (including the introduction of novel alternative - including renewable - technologies alongside conventional ones, together with efficient storage and distribution architectures) and the energy handling (including automated energy management systems as well as

¹ For transports to the EU, the Regulations on Shipments of Waste of the European Parliament and Council (Ref. LL.) apply, for shipments to other States the Basel Convention (Ref. CC.).

structural improvements such as better thermal insulation).

The result would be a “greener” military that would fulfil military missions more efficiently, possibly also more effectively, and in a sustainable manner. It would also result in a significant reduction in hazardous emissions and pollution to the air, ground and sea.

d. Recover from negative environmental effects

Environmental effects, and first of all damage, have to be remedied as soon as possible; this can be done in close cooperation with the HN.

e. Protect EP Installations and Resources

When deployed EU military forces will protect the natural and cultural resources within an operations area in order to preserve them for the future and to allow sustainable development. This includes the protection of EP essential installations, of cultural heritage and the conservation of the biodiversity.

(1) Protection of EP Essential Installations

EP planning should take into account preventive as well as protective measures to counter attacks as well as to avoid damage by own forces against objects and resources indispensable to the survival of the civilian population in an operations area. This includes - inter alia - food storages, drinking water installations (dwells, purification plants), irrigation systems, energy facilities and medical supplies.

(2) Cultural Property Protection

The protection of the cultural property within an operations area is a legal obligation under International Law (Ref. Z/ II), which prohibits the use of cultural property for any military purpose that is likely to expose it to destruction or damage, and forbids directing any act of hostility against such property, unless imperative military necessity. International law also calls for prosecution of serious violations. The requirement to include protection of cultural property in the operational planning process was clearly stated in the Lessons Learned from Libya (Ref. NN).

The inclusion of CPP aspects in planning and conduct of military operations is not only a legal obligation under international law, it is also advantageous for the achievement of the mission objectives: First and foremost, preservation of the cultural sites of the population within an operations area maintains the morale high ground for own forces

and contributes directly to the 'winning of hearts and minds' among the local population in theatre, as well as the ongoing public and political support back home in the TCNs. From a humanitarian as well as from a historic point of view, it is of great importance to preserve and protect the common sites of human culture, and especially archaeological, historic and religious sites. Furthermore, CPP reduces the insurgents ability to raise revenue from looting. Finally, it facilitates the transition process and fosters the re-development of cultural pride and identity of the local population.

Like EP in general, the task calls for early consideration in the planning process and for close cooperation with local civil authorities and persons, such as historians and museum personnel.

Except where authorised under international law as a measure of last resort, attacks on and damage to cultural property and spiritual objects like protected monuments (architecture, museums, libraries), archaeological sites, art, places of worship are prohibited, as well as the use of those properties for purposes which might expose them to damage. Furthermore, the EU commander should consider measures to prevent - and if possible protect from - criminal acts related to cultural property, such as theft, looting or vandalism.

(3) Protection of Biodiversity

Biodiversity describes the variability among living organisms and includes the diversity between species and ecosystems. Included are biological resources, fauna and flora (especially endangered species), eco-systems (for example wetlands), critical habitats, conservation areas, and bird areas and routes. The international legal framework is provided by the UN Convention on Biological Diversity, which entered into force on 29 December 1993. Its main objectives are, inter alia, the conservation of biological diversity, and the sustainable use of the components of biological diversity. The biodiversity in an operations area is of significance for sustainable development and for climate change resilience. Both issues are important factors for lasting stability once a conflict has been solved. A significant damage to the biodiversity in an operations area is likely to impact the livelihood of the local population by reduction of their food supplies. If the damage to the flora is widespread, it could potentially increase the effects of climate change by a reduced ability of greenhouse gas absorption. The biodiversity therefore deserves protection, and needs to be considered during the planning and conduct of an operation.

J. DUTIES AND RESPONSIBILITIES

16. The EP competence table hereafter provides guidance to EU Commanders at all levels of command:

Duty**Responsibility**

Military Strategic Level:
Operation Commander
(OpCdr)

The OpCdr is responsible for consideration of EP aspects in his Commanders Intent, and for issuing an Environmental Policy for the operation.
Appropriate EP and CPP expertise at the OHQ level is essential for the consideration of related aspects during all phases of the operation. Therefore, the OpCdr is supported by the EP Advisor (EP-Ad) and Cultural Property Advisor (CPP-Ad), who are members of the OHQ staff.

Military Operational Level:
Force Commander
(FCdr)

The FCdr is ultimately responsible for the integration of environmental considerations during the training and planning for a military mission, and during the conduct of operations within the Area of Responsibility (AOR). He/She also checks that the available forces under his/ her command have received by the respective SN the basic environmental awareness, necessary specific updates and technical training consistent with the mission and the theatre prior the deployment phase. The FCdr should therefore be aware of all applicable policy, and should define the policy requirements, for example through a Memorandum of Intent, published Standard Operating Procedures (SOPs), or other similar directives. Consideration should be given to TCNs' requirements, EU policy, and force-specific directives. References to all relevant policy should be included in the Operations Plan (OPLAN).
Appropriate EP and CPP expertise at FHQ level is paramount for the conduct. Therefore, the FCdr is supported by the EP-Officer and CPP-Officer, who are members in his/ her staff

Tactical Level:
Component Cdr (CC Cdr)
Battalion Cdr (Bn Cdr)
Naval Task Group Cdr

The commanders on the tactical level need to be familiar with the EP policy, guidance and orders from the OHQ/ FHQ, in order to ensure full implementation of EP aspects during the conduct of the operation.

They are responsible for the training of their troops and their environmental awareness.

The CC Cdr is supported by the CC EP Officer (level 4/3). The Bn Cdr's/ Naval TG Cdr's are supported by their designated Environmental Protection Point of Contact (EP PoC) within their staffs.

Troop Contributing Nations (TCNs)

TCNs should provide appropriate EP education and training to their forces. National Support Elements should provide appropriate EP expertise in their staff to plan, coordinate and control unit level EP measures. A (CPP-Ad) should be appointed for operations with a high risk of damage to cultural heritage.

OHQ level:
EP Advisor (EP-Ad)
CPP Advisor (CPP-Ad)

- Know and understand the mission objectives
- Work effectively within the established chain-of-command
- Advise the OpCdr (EP-Ad/ CPP-Ad)/ FCdr (EP Officer/ CPP Officer) resp. CC Cdr (CC EP Officer)

FHQ level:
Force EP Officer
Force CPP Officer

- Study prior lessons learned
- Ensure initial, current, and final site conditions are accurately and correctly assessed and documented

CC level:
CC EP Officer

- Collaborate with other staff members, participate actively in the planning phase and during the conduct of the operations and ensure that all relevant EP resp. CPP concerns are implemented in the staff work
- Support agencies, stakeholders, and experts
- Maintain and archive pertinent documents and records
- Be trained and technically cultured personnel
- Train staff personnel and contingent members in the proper application of EP resp. CPP principles and standards

EP-Ad/ Force EP Officer/ CC EP Officer:

- Understand all applicable legal and policy EP requirements
- Be familiar with general and specific environmental standards and energy efficiency measures
- Lead the environmental planning for mission sustainability
- Establish and implement an Environmental Management Plan
- Plan for mission completion and base camp closure

CPP-Ad/ CPP Officer:

- Understand all applicable legal and policy CPP requirements
- Be familiar with the underlying International Law
- Develop and update a list of protected cultural property within the area of operations, and ensure implementation of the list in the overall operations plan
- Coordinate with civilian actors in the AOR (esp. museums, archaeological and religious sites)

17. The EP-Ad could be both military and civilian personnel with experience in operational planning and with EU-led military operations, and in possess of appropriate technical knowledge, supported by legal fundamentals. Further civilian experts could be additionally provided by TCNs or contracted for specific purposes (for example chemists, biologists, physicians). The CPP Ad could be both military and civilian personnel with experience in operational planning and with EU-led military operations, and in possess of appropriate legal knowledge. The positions of the EP and CPP Officer on FHQ level should preferably be filled with an officer. Civilian EP/ CPP experts could be additionally provided by TCNs or contracted for specific purposes (for example biologists, archaeologists).
18. Among the EP and CPP experts made available, it is at the Commander's discretion to decide upon the position of the EP-Ad/ CPP-Ad in the OHQ, respective the EP Officer/ CPP Officer in the FHQ. Due to the overall accountability of the Commander in the case of a severe environmental or cultural damage, they need immediate and direct access to the Commander whenever required to prevent or contain the damage. On the other hand, to allow that EP aspects are included in the different steps and strands of the staff work, they need to closely cooperate with the respective staff personnel, and they should actively claim their involvement. For the OHQ level it is suggested to incorporate the EP-Ad/ CPP-Ad in the Command Group. For the FHQ level it is suggested that the EP Officer reports to DCOS Support, whereas the CPP Officer should be collocated with the Operational Planning Branch or the Targeting Cell, and he should report to DCOS Operations.

K. IMPLEMENTATION IN PLANNING AND CONDUCT

19. Environmental policy for military operations broadly defines the role of the parties involved in EP planning and execution, and often includes the following elements:
 - a. The tenet that EP is every individual's responsibility,
 - b. Compliance with applicable legal requirements, including international agreements, subject to any exceptions and limitations,
 - c. Recognition of the importance of environmental planning,
 - d. The goal to avoid any environmental damage respective to maintain the mission related impact at a sustainable level for the environment,
 - e. The respect for local environmental standards.

20. Environmental considerations should be undertaken throughout all phases of an EU-led military operation:

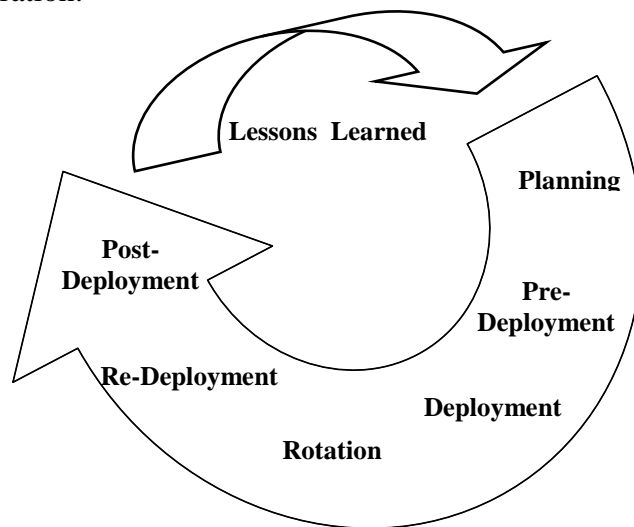


Figure 1: The phases of an EU-led military operation (Operational Cycle); see also Figure 3.

21. Planning

Once the political and military decision has been made to launch a military operation, environmental considerations should be incorporated into each phase of the planning process. Initial environmental analyses are instrumental in facilitating early, informed decision making so that the Operations Plan (OPLAN) and other deliberate planning documents account for known environmental risks and other relevant concerns. The annexes connected with the OPLAN are more detailed planning documents for selected functional areas, and a typical OPLAN includes an annex for environmental considerations. The Environmental Annex should detail the roles and responsibilities for environmental management throughout the chain-of-command. In addition to the Environmental Annex, there may be other annexes of interest (e.g., Engineering, CIMIC, Medical, Logistics, HNS). The initial environmental analysis for the OPLAN typically consists of four key tasks:

- a. Identify EP requirements and limitations,
- b. Identify "who, what, why, and when" of EP considerations,
- c. Develop and prioritize EP Courses of Action (COAs) for the Concept of Operations (CONOPS) and Statement of Requirements (SOR),
- d. Identify EP resources needed.

The duration of the operation also has a significant impact on environmental considerations and resources required for environmental sustainability, although it is important to note that requirements may be event driven rather than time-driven. Even under the most austere conditions, there are minimum environmental standards for the protection of human health and the environment. As the operation stabilizes and resources become more available, the ability to comply with more protective standards will increase in steps, resulting in an overall increase in environmental stewardship. This scalable approach to environmental considerations is critical in the development of flexible courses of action for environmental sustainability, while maintaining minimum environmental standards for the protection of human health and the environment.

Due to the transversal nature of environment protection, environmental staff needs to operate in a very close interface with all other staff areas to establish the required coordination of resources and support for the environmental plans. The extent of this interface is shown in diagrammatic form at Figure 2. The list demonstrates the areas where the EP Ad, CPP Ad and EP Officer need to work with other staff areas.

Command Group Support Staff	
Environmental Incident Reporting System ¹	
J1 - Personnel & Administration	
EP Personnel qualifications	International Law (e.g. Environmental Conventions)
EP Personnel assignments	
J2 – Intelligence	
Environmental Intelligence	Geographic Factors: Climate, Terrain
J3 – Operations	
Equipment Development	Major Incident Plan
Contingency Plans	Current & Future Operations
Operational Planning	
J4 – Logistics	
Movement	Procurement
Host Nation Support	Infrastructure
Supply and Resupply	Accommodation
Equipment Support	

¹ The Environmental Incident Reporting System is an information management process, with the Information Management Cell (IM Cell) being in charge. According to the EU HQ Manning Guide IM Cell is part of the Command Group Support Staff.

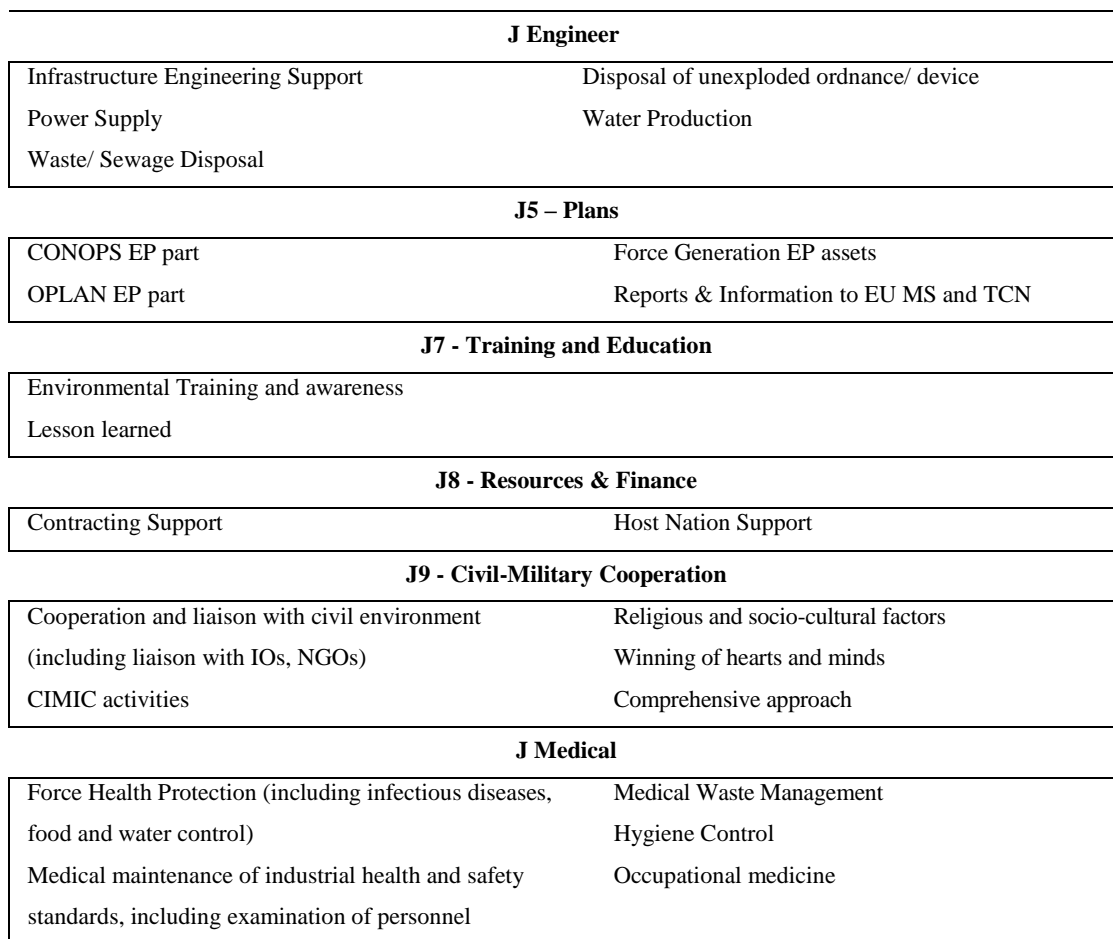


Figure 2: Illustrative interface between EP and other staff functions

22. Pre-Deployment

In the pre-deployment phase, risk assessments are conducted to identify and quantify the risks to military personnel and to the environment arising from conditions within the proposed area of operations. The environmental risk assessment determines the extent to which operations may significantly and permanently affect the environment or well-being of the local community. In conducting risk management, preliminary surveys, such as a site-specific Environmental Baseline Survey (EBS) should be undertaken (preferably by the FHQ) 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.

As the force prepares to mobilise, environmental officers and planners should check that all available forces have received proper EP training by the respective SN. Furthermore they should identify environmentally related supplies and equipment required to support the mission in light of the OPLAN's Environmental Annex, reports from site reconnaissance or

pre-deployment site surveys, intelligence assessments, and known facts about existing conditions in the deployment area.

23. Deployment

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. The creation and periodic updating of such a deliberate, written Environmental Management Plan (EMP) by the FHQ 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. An effective EMP must be approved by the Commander and should include, at a minimum, the recommended elements:

- a. Environmental Roles and Responsibilities,
- b. Environmental Management Board (EMB),
- c. Applicable Environmental Protocols, Standard Operating Procedures (SOPs) and Best Management Practices (BMPs), Training Requirements and Training Deficiencies,
- d. Auditing of Compliance,
- e. Reporting, Recordkeeping & Archiving,
- f. EMP Evaluation and Updating Process.

24. Rotation

Rotation of forces means the relief in place and Transfer of Authority (TOA) of forces by the same Troop Contributing Nation. In preparation for the rotation of forces the designated Commander's EP Advisor (EP-Ad) should prepare to transfer key information and responsibilities to the replacement or HN.

25. Re-Deployment

Once the decision has been made to redeploy forces and close or transfer a site, the planning for the site transfer or closure should begin. It is important to remember that site closure and transfer to the original owner or to another nation as part of the force redeployment affects both parties. Unnoticed or undocumented contamination could influence future land use and lead to unforeseen liability issues. It is therefore essential to properly assess and document the final condition of the site as part of the redeployment and camp closure process to determine

the extent to which the site was damaged by the force and if there are legal or health and safety concerns and obligations.¹

The first phase of the environmental closure process should include a desk study with an associated site visit in order to identify possible environmental risks. If risks are evident, the study would be followed by a second phase consisting of a site survey and possibly a third phase describing necessary actions. This should happen in cooperation with those nations that take over the site and the results should be approved by them.

26. 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 OHQ. Post-deployment functions include archiving important documents, reviewing operational environmental management, collecting lessons learned and monitoring the environmental status in the AOR.

27. Lessons Learned

Throughout all stages of an operation's life cycle the importance of identifying and documenting lessons observations from all phases of the operation are paramount. The foundation and process for the collection, management and development of lessons observations from all EU Military Operations is detailed in the EU Military Lessons Learned Concept (Ref. O). Additionally, further detailed information will be available in OHQ/ FHQ LL Standard Operating Procedures (Ref. R/ S) and in the relevant OPLAN and will include, but not be limited to:

- a. OHQ/ FHQ lessons structures and organisations,
- b. Lessons collection effort requirements,
- c. Provision of lessons support, which will be determined by the operational phases,
- d. Transferring of relevant lessons both between rotations and from theatre to the troop contributing nations' joint forces command.

The CSDP Lessons and Best Practices Portal (available through the classified EU Wide Area Network) contains the EU Lessons Management Application (ELMA¹). This LL Database management tool should be utilised for the recording and development of lesson observations.

¹ 'Site closure' means the transfer of property from the troop contributing nation back to the HN. 'Site transfer' refers to the hand-over of property from one troop contributing nation to another.

L. EP ASSOCIATED ACTIVITIES

28. Training

Environmental awareness training and education should be pragmatically incorporated into existing national military personnel training programs through individual, collective and continuing education. It is particularly important to conduct an early analysis of EP training requirements so that pre-deployment training may be modified or adjusted to address any identified shortfalls or deficiencies. In addition, subject matter expert seminars and courses for EU personnel could be conducted by the EU or a EU MS to enhance the overall knowledge within areas related to EP and CPP².

29. Engineering

Military Engineering Support to EP is focusing mainly on the development of environment friendly infrastructures, of waste and sewage plants and of remediation solutions for mitigating the impact of military activities on environment (see Ref. J).

30. Logistics

EP has several implications for the execution of logistic functions in support of EU-led military operations, which must be taken into account (see also Ref. K):

- a. Real Life Support: EP puts high demands on real life support, and particularly on the logistic task of waste management.
- b. Logistic Chain: EP can influence the logistic chain both in positive and negative ways. The rectification and disposal of environmental damage requires additional transport, whereas increased energy efficiency and use of renewable energies may potentially reduce transportation to and within the theatre of operation.
- c. Funding and Contracting: Contractor Support to Operations (CSO) for EP will be requested in order to execute the contracting process for engineer works and infrastructure projects, and to co-ordinate with other contracting agencies involved. EP staffs should contribute to the development of requirements by the designated contracting authorities at all levels. The defined EP standards apply for the military as well as for the civilian contractors and their activities. Contracts in support of initial military operations must include expected EP standards. As the number and quantity of supporting contracts grows,

¹ According to Ref. O, ELMA contains lessons observations from all CSDP military activities and acts as the management tool for the collection, management and development of all military lessons from CSDP activities.

² An excellent example is the CPP Pilot Course, which was conducted by AT in November 2011.

operational planners must ensure that contracts have measureable and enforceable EP standards.

- d. HNS: Continuous cooperation and coordination should be maintained with the HN during the operation, in order to assure an efficient EP support work (see Ref. L).

31. Civil-Military Cooperation (CIMIC)

The support of CIMIC activities must be clearly defined in order to support the commander's intent and to avoid the dilution of EP effort in tasks not essential to the implementation of the mission (see Ref. N).

32. Information Operations and Public Information

The EP officer/ advisor often provides essential services, to meet both military and civilian requirements during and after the operation. In that sense, as visibility and credibility multipliers, EP officer/ advisors may be considered part of the Information Operations and Public Information effort. If decided, EP could be incorporated in the Information Operations coordination process, to promote the operational outcome.

33. Rules of Engagement (ROE)

Operational activities can have a great impact on an area of operation in shaping the environment. The EP officer/ advisor may support the ROE officer in developing EP considerations for ROE. In consequence, EP related ROEs have to be very clear and unambiguous, in terms of restrictions, limitations and authorised actions.

34. Force Protection

By increasing the use of renewable energy sources during military operations fuel transport to and within the theatre could be significantly reduced. As a result, less convoys would need to be protected, which would significantly lessen the risk for own forces, and furthermore would increase operational efficiency (an EU Force Protection concept is under development).

35. Preventive Medicine

The interrelationship between environmental and health considerations needs to be considered.

M. FACTORS AFFECTING EP

36. Responsible Acquisition of Materiel

Strongly associated with operations is materiel. While in some cases materiel is specifically acquired for an operation, more complex systems are often acquired in order to contribute to sustaining a capability beyond one operation and might thus see recurring deployment. In this light one can consider two types of life-cycles.

- a. Life-Cycle of Operations: The cycle that encompasses all phases of operations. Its duration is variable and depends on the evolving complexity of each operation.
- b. Life-Cycle of Materiel: The cycle that revolves around materiel that can be deployed to operations but can also be used in the homeland. The duration is typically longer than that of an operation and can be several decades with the possibility of extensions accommodated by appropriate system upgrades.

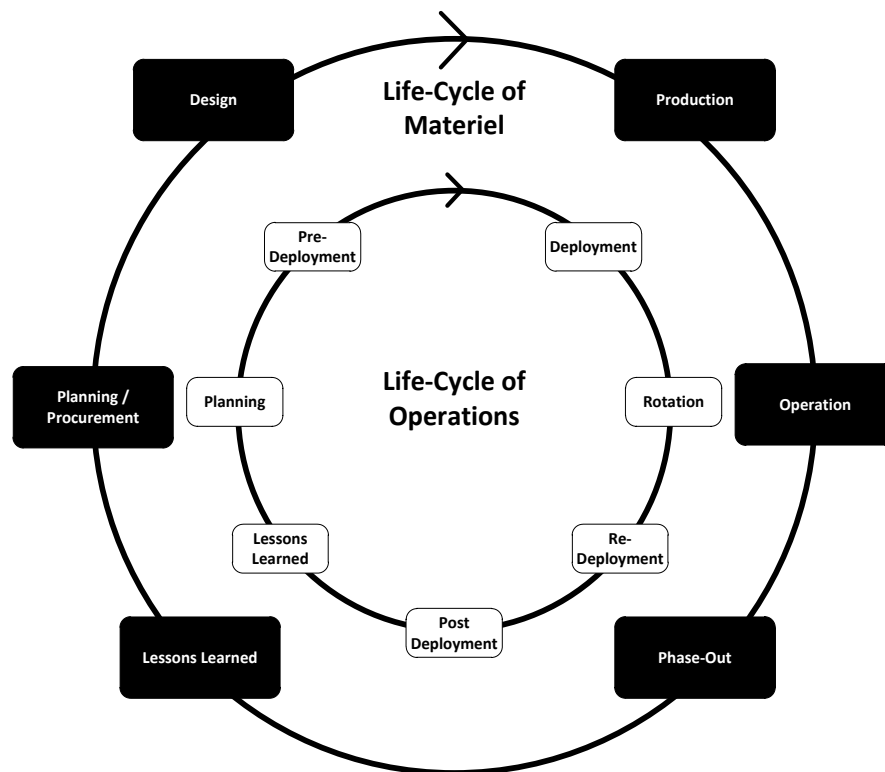


Figure 3: Life Cycles of Operations and Materiel

All materiel can have an adverse impact on the environment in all phases of the life-cycle. Responsible acquisition of materiel implies taking ownership of the adverse impact in all phases and taking the necessary measures to mitigate it to the extent possible.

- c. Planning and Procurement: In the earliest stages of an acquisition programme or project the capability requirements are defined and translated into technical requirements, which acts as a basis for a subsequent contract. Here lies the opportunity to introduce appropriate technical requirements and introducing suitable incentives for the contractor-to-be that address the full scope of adverse through-life environmental impact. A thorough effort in drafting the technical specification can help mitigate adverse effects that can happen decades later.
- d. Design: The design process is nowadays often in the hands of the Contractor. High level technical specifications these days are more prescriptive than in the past, often encouraging the Contractor to come up with creative solutions, rather than proposing economical traditional solutions . Requirements and incentives in the technical specifications to go for responsible designs with regard to both energy and environment is key. A thorough environmental risk assessment is beneficial to support choice of systems configuration.
- e. Production: Often overlooked is the fact that energy consumption as well as hazardous emissions and bi-products are associated with production of materiel. By introducing mechanisms in the technical specification that reward limiting these factors, the environmental influence of the manufacturing process can be tackled.
- f. Operation: The Operation Phase is where the design of materiel comes into play and the systems context becomes evident. The integration challenge is to achieve environmental neutrality taking all aspects of operations into account including the logistical footprint. Awareness and procedures are also contributors to making a difference.
- g. End-of-Life: Engineering a responsible end-of-life is a challenge that needs to be dealt with already in the design phase. This should take into account aspects such as minimising the overall content of hazardous materials, optimising reuse and maximising recyclability.

With the current legislation as the foundation, emerging best practices for responsible acquisition along with established standards could be used in support of mitigating adverse environmental effects during the whole life-cycle of a system.

37. Operational Environment

The type of operation and the likely evolution of the situation will help to determine the type of EP tasks and the required capabilities to deploy. The operational environment results from numerous parameters, each with its own influence. EP considerations and planning aspects will depend on the quality of the operational environment, resulting from the mix of these parameters and becoming more important with challenging conditions.

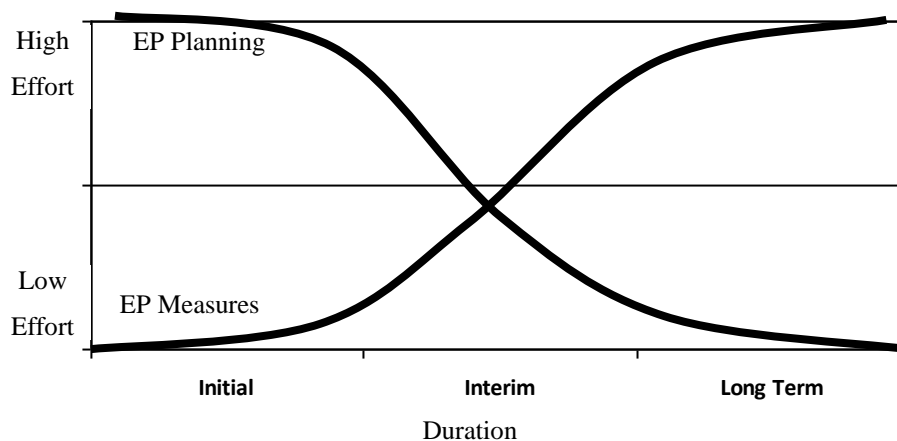


Figure 4: Duration of an operation vs. EP efforts

38. Limited Resources

a. Local Resources

EU-led military operations are likely to be undertaken in areas with scarce local resources, such as potable water. Competition for limited local resources amongst MS, national and local contractors, International Organisations and Non-Governmental Organisations involved directly or indirectly in EU-led military operations, can have negative impacts on the availability of resources and subsequently the social and economic environment, particularly where resources are in high demand. This requires co-ordination at the highest level of activity and cooperation between the actors involved in order to assess the potential impacts, to ensure resources are used in the most effective manner to avoid their deterioration, and to determine additional mitigating measures.

b. Operational Resources

Scarce operational resources for military support of EP must be kept under central control for use where and when most required. Operational planners have to take this into account and, check and revise the planning process on a continuous basis.

c. Funding

The successful implementation of EP tasks depends largely on timely and sufficient funding, because costs for specific material, for infrastructure and related services are high. Close cooperation and co-ordination with financial staffs is required, and all alternatives that produce effective and efficient solutions at lower cost must be considered.

39. Standardisation

Equipment and materials vary amongst EU MS, covering many functions, with little standardisation. Even if some tasks are similar, the structures, organisations and procedures often differ between EU MS. It is essential to understand the differences in national organisations, policies, tasks and procedures. It is probable that national standards and regulations vary among EU MS, and that these national standards are stricter than those standards of the HN. Awareness of these issues will benefit the military operation. Exchange of information and training is key in this regard, in order to improve the interoperability. These effects could be mitigated by defining quantifiable environmental standards for CSDP missions and operations (EU CSDP EP standards), and by monitoring the potential level of environmental damage. These EU CSDP EP standards need to be coherent with environmental standards defined by the UN and NATO. They should be included in the EU OHQ and EU FHQ SOP's.

40. Environmental Health and Safety Aspects

The nexus between elements of EP and Environmental Health and Safety is obvious (Figure 4) and needs to be addressed accordingly.

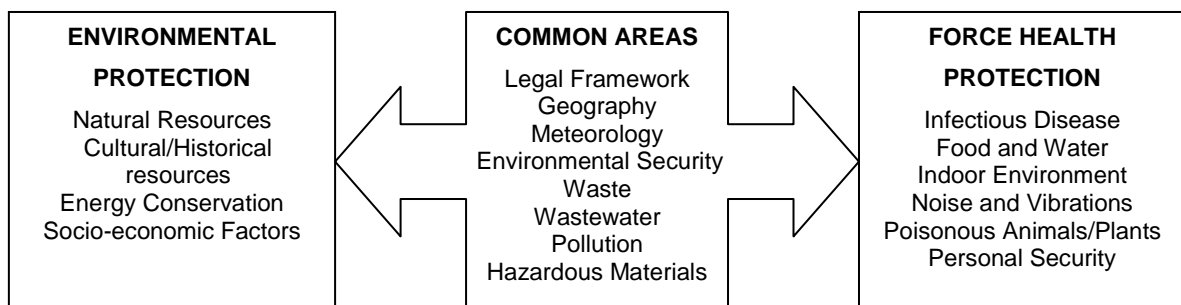
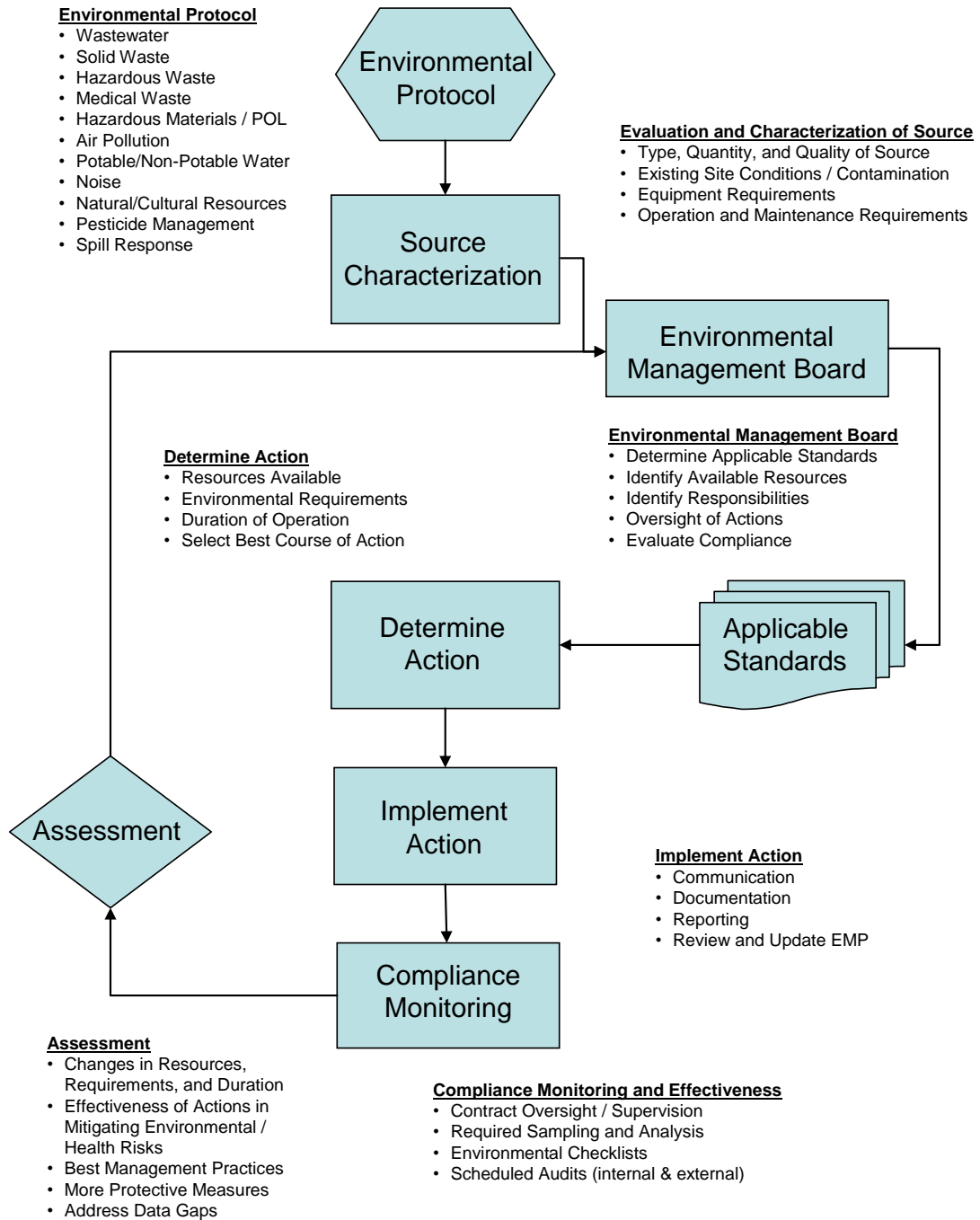


Figure 5: Interrelationship between EP and Force Health Protection

41. Environmental Management Plan

Depending on the characteristics of a military operation, and especially its anticipated duration, size and corresponding impact on the environment, an environmental management plan could be implemented. Such a plan aims at institutionalising environmental policy, standards and procedures throughout the whole EU contingent, which would allow an even more formalized approach to EP and to sustainable development in the operations area. It should lay out clear and measurable environmental procedures, standards and guidance for that specific EU operation. An example for civilian environmental management programs is the EU Eco-Management and Audit Scheme (EMAS), which was adopted by the EU Commission. Further guidance could be drawn from the Environmental Management Plan of operation EUFOR ALTHEA, which was issued in March 2006.

ANNEX A: ENVIRONMENTAL STANDARDS PROCESS



ANNEX B: CONSIDERATIONS FOR EP STANDARDS

Environmental Protocol	Duration of Operation		
	<i>Initial</i> <i>(within 60 days of deployment)</i>	<i>Interim</i>	<i>Long-Term</i>
Wastewater – Black (human waste)	Field expedient methods: burn barrels, slit trench, pit latrines, and chemical toilets (contracted disposal)	Field expedient methods, chemical toilets (contracted disposal), semi-permanent latrines, facultative ponds/lagoons, municipal or camp WWTP (primary & secondary treatment) Sewage Sludge: Contract off-site disposal, land apply, or compost	Chemical toilets (contracted disposal), semi-permanent latrines, facultative ponds/lagoons, municipal or camp WWTP (primary & secondary treatment with disinfection) Sewage Sludge: Contract off-site disposal, land apply, or compost
Wastewater – Gray	Field expedient methods: evaporation beds, soakage pits, and French drains	Facultative lagoons, municipal or camp WWTP (primary & secondary treatment). Consider the use of tactical, mobile wastewater treatment systems for water reclamation and reutilization systems to reduce the amount of wastewater treated off-site.	Facultative lagoons, municipal or camp WWTP (primary & secondary treatment with disinfection). Consider the use of tactical, mobile wastewater treatment systems for water reclamation and reutilization systems to reduce the amount of wastewater treated off-site.

Environmental Protocol	Duration of Operation		
	<i>Initial</i> <i>(within 60 days of deployment)</i>	<i>Interim</i>	<i>Long-Term</i>
Solid Waste	Field expedient methods: burn pits, bury-in-place, back-haul/retrograde	Engineered landfill, incineration. Consider the use tactical, mobile of waste to energy conversion (WEC) systems to reduce the amount of waste to be treated off-site.	Engineered landfill, incineration, recycling, composting. Consider the use of tactical, mobile waste to energy conversion (WEC) systems to reduce the amount of waste to be treated off-site.
Hazardous Waste	Field collection, consolidation, storage, segregation, secondary containment, labelling. Retrograde.	Centralized collection, consolidation, storage, segregation, secondary containment, labelling. Retrograde or disposal in compliant HW facility	Centralized collection, consolidation, storage, segregation, secondary containment, labelling. Retrograde or disposal in compliant HW facility
Medical Waste Non-contagious and non-sharp waste (e.g. blisters, packs, boxes)	handle as solid waste		
Medical Waste Non-contagious but sharp (e.g. needles to prepare drugs)	store in special container ('used needles container') and handle it as solid waste		
Medical Waste Contagious and sharp (e.g. used scalpels from operation room)	store in special container ('used needles container') and handle it as contagious but non-sharp medical waste (see below)	Contract off-site disposal, retrograde, two-stage incinerator	Contract off-site disposal, retrograde, two-stage incinerator
Medical Waste Contagious, but non-sharp	Field collection, storage, labelling, transport back in a secure way, chemical disinfection and autoclave	Contract off-site disposal, secure back haul, chemical disinfection, microwaves or incinerator for medical waste (best solution)	same as interim

Environmental Protocol	Duration of Operation		
	<i>Initial</i> (within 60 days of deployment)	<i>Interim</i>	<i>Long-Term</i>
Hazardous Materials / POL	MSDS, segregation, safety, secondary containment, HAZCOM/HAZMAT training, HAZMIN	MSDS, segregation, safety, secondary containment, HAZCOM/HAZMAT training, HAZMIN	MSDS, segregation, safety, secondary containment, HAZCOM/HAZMAT training, HAZMIN
Air Pollution	Minimize open fires/burning, dust suppression	Control open fires/burning, dust control and suppression	Compliant generators, aqueous solvents, proper vehicle maintenance, Minimize emissions and traffic
Potable/ Non-Potable Water	Bottled water, wells, field expedient methods, water treatment system, and municipal water systems.	Bottled water, wells, field treatment methods, water treatment system, and municipal water systems. Consider the use of tactical, mobile wastewater treatment systems for water reclamation and reutilization systems to reduce water demands.	Bottled water, wells, water treatment system, and municipal water systems. Consider the use of tactical, mobile wastewater treatment systems for water reclamation and reutilization systems to reduce the water demands.
Noise	Field expedient methods: sand bags, vehicles, or other physical barriers	Field expedient methods: sand bags, Construction of physical barriers, distance/relocation	Engineered sound proofing/physical barriers, centralized generator farms, low-noise generators
Natural Resources	Limit impacts, avoid/ minimize damage due to mission requirements	Limit impacts, avoid/ minimize damage due to mission requirements Consider a natural resources management plan	Limit impacts, avoid/ minimize damage due to mission requirements. Consider a natural resources management plan

Environmental Protocol	Duration of Operation		
	<i>Initial</i> (within 60 days of deployment)	<i>Interim</i>	<i>Long-Term</i>
Cultural/ Historical Resources	Obtain lists, survey base camps, limit impacts, avoid/ minimize damage due to mission requirements	Obtain lists, survey base camps, limit impacts, avoid/ minimize damage due to mission requirements. Consider a cultural/historical resources management plan	Obtain lists, survey base camps, limit impacts, avoid/ minimize damage due to mission requirements. Consider a cultural/historical resources management plan
Pest Management	Use approved pesticides, record pesticide use, follow HAZMAT guidelines	Use approved pesticides, record pesticide use, follow HAZMAT guidelines	Integrated pest management plan using approved pesticides. Record pesticide use, follow HAZMAT guidelines
Spill Response	Unit SOP, spill response plan, equipment and reporting. Field expedient secondary containment.	Unit SOP, spill response plan, equipment and reporting. Interim spill prevention and control containment structures	Semi-permanent spill containment structures. HAZMIN. Regular inspections Spill prevention control and countermeasures plan
Energy Conservation	Use natural lighting as much as possible. Choose energy-efficient appliances where possible (i.e. fluorescent lights). Achieve personnel awareness about energy saving.	Establish power grids including micro grids for load balance and off load power. Plan and establish thermally insulated buildings only, where possible with eco-efficient materiel (i.e. cellulose insulation). Plan and establish resource-saving installations. Consider waste to energy conversion systems.	Plan and establish alternative, renewable energy resources and waste to energy converters. Use newest techniques for efficient air-conditioning (i.e. heat-pumps). Establish a benefit system for successful energy/resources saving. Consider waste to energy conversion systems.

Environmental Protocol	Duration of Operation		
	<i>Initial</i> <i>(within 60 days of deployment)</i>	<i>Interim</i>	<i>Long-Term</i>
CITES (Convention on the International Trade of Endangered Species)	Briefing of all personnel	Briefing of all personnel + check the application	Briefing of all personnel + check the application