

# Crisis, Conflict/ Peacbuilding, and the Environment: A Military Perspective

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# Agenda

- Today
  - Military/peacekeeping and the environment
  - Drivers for environmental considerations
  - UN PKO best practices
- Tomorrow
  - SWE NATO/PfP event 2014: *Improving the social and environmental performance of military and civilian actors operating in the same area*

# Defence and the Environment

## Reactive



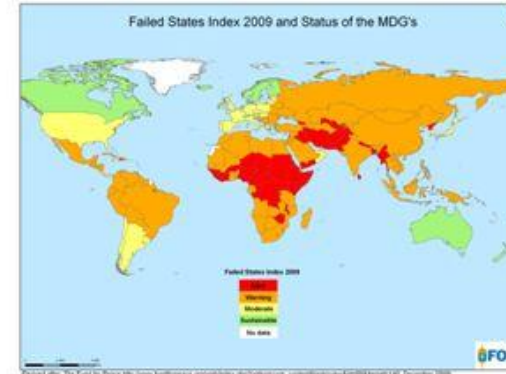
*Environmental Risk Assessments of polluted areas*

## Active



*Impacts on environment during peace keeping operations*

## Proactive



*Foresight and proactive approaches (Environmental Intelligence)*



# Drivers for Environmental Considerations

- Protecting the **health and well-being** of deployed troops
- Reducing the **environmental impact** of the mission, and thereby improving relations with local communities
- Reducing **direct costs** (e.g., for fuel) and potential costs (e.g., for cleanup of contaminated land)
- Where appropriate, **assisting the local population** to move sustainably toward the next phase of the post-conflict period.
- **Delivering on the mandate**

# ”VA to look into effects of 'burn pits' on veterans”



Source: CNN 090317 <http://www.cnn.com/2009/US/03/17/burn.pits/>



# Haiti could happen anywhere....

## The Washington Post

NEWS | LOCAL | POLITICS | SPORTS | OPINIONS | BUSINESS | ARTS & LIVING | GOING OUT GUIDE | JOBS | CARS | REAL ESTATE

### UN probes base as source of Haiti cholera outbreak

By JONATHAN M. KATZ  
The Associated Press  
Thursday, October 28, 2010; 2:51 AM

MIREBALAIS, Haiti -- U.N. investigators took samples of foul-smelling waste trickling behind a Nepalese peacekeeping base toward an infected river system on Wednesday, following persistent accusations that excrement from the newly arrived unit caused the cholera epidemic that has sickened more than 4,000 people in the earthquake-ravaged nation.

Associated Press journalists who were visiting the base unannounced happened upon the investigators. Mission spokesman Vincenzo Pugliese confirmed after the visit that the military team was testing for cholera -- the first public acknowledgment that the 12,000-member force is directly investigating allegations its base played a role in the outbreak.

Meanwhile the epidemic continued to spread, with cases confirmed in two new departments in Haiti's north a Humanitarian Affairs spokeswoman Imogen Wall. At least 303 people have died and 4,722 been hospitalized.

International aid workers and the United Nations are focusing their efforts on stemming the spread of the outbreak and are increasingly turning their attention to its origins: How did a disease which has not been seen in Haiti since the 1970s reach the countryside?

The mission strongly denies its base was a cause of the infection. Pugliese said civilian engineers collected samples for cholera and the mission's military force commander ordered the additional tests to confirm. He said no member of the force was sick.

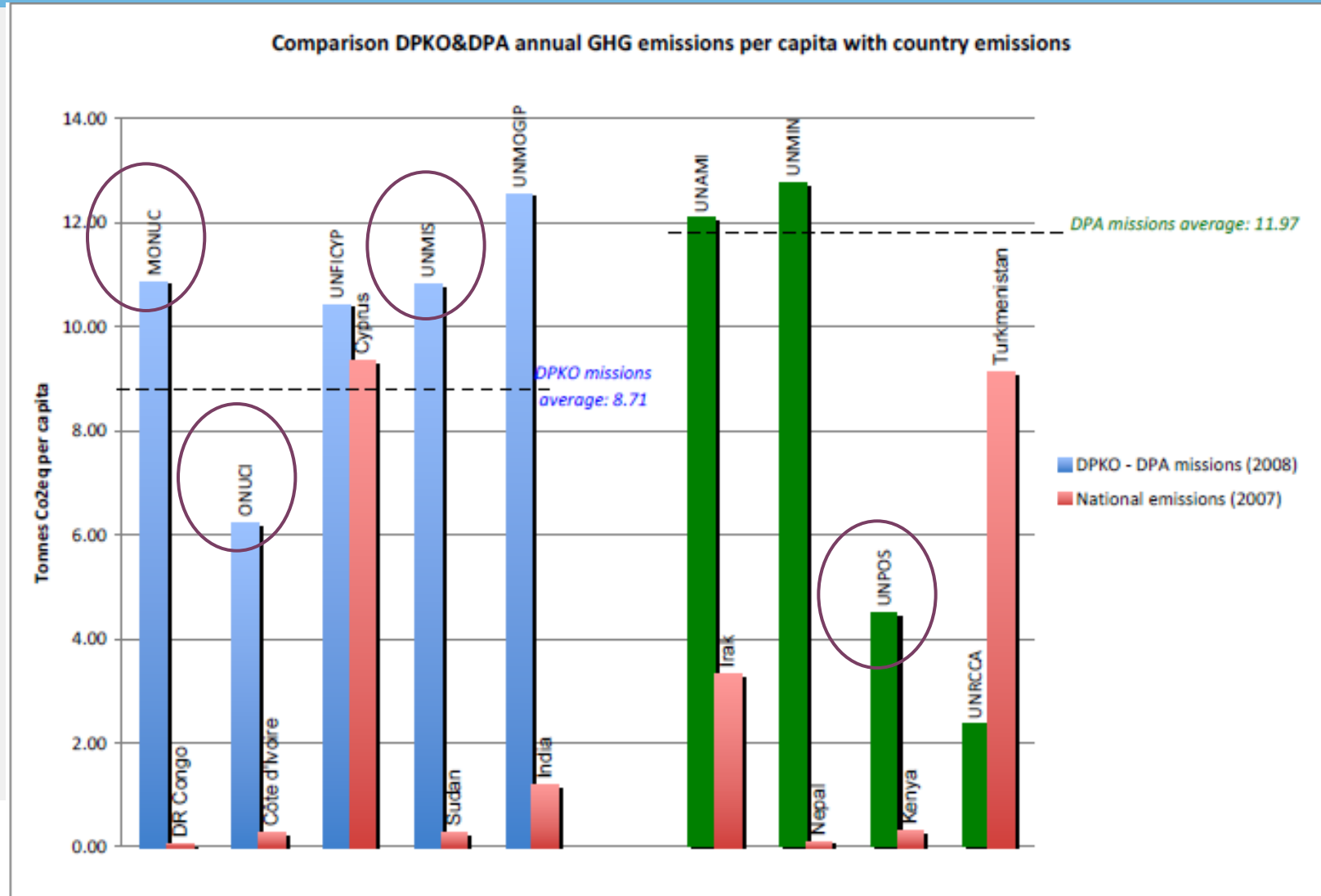


Photo Credit: FOI

*Resolution A/RES/64/292. United Nations General Assembly, July 2010* explicitly recognized the human right to water and sanitation and acknowledged that clean drinking water and sanitation are essential to the realisation of all human rights



# 2008 GHG inventory (UN-wide climate neutrality strategy decided by Chief Executives Board)



# Lack of Contractor Oversight results in financial claims

- A local contractor was hired to haul waste oil from a base camp. He dumped the oil in a local landfill and sold the barrels. Result: a claim by the host nation for clean-up compensation of \$1.25M.
- Lessons learned:
  - The contracting officer should have included the proper procedures into the contract statement of work.
  - The unit receiving the services should have reported all potential safety, health, or environmental incidents





# The role of the military

- The military has valuable expertise in e.g. the areas of logistics, **intelligence**, and new **tools**/technologies
- However, tasks needs to be
  - Clearly defined to avoid mission creep
  - Matched with existing troop expertise and/or capacity
  - Coordinated with civilian authorities to avoid unintended consequences
- Nevertheless **within a defined role**, the military can help determine how the overall operation is perceived and facilitate a successful transition to civil authorities

# UNSC mission mandates

- MONUSCO, UNMIL and most recent MINUSMA
  - *S/RES/2100(2013) on the establishment of MINUSMA, OP32.* Requests the Secretary-General to **consider the environmental impacts of the operations** of MINUSMA when fulfilling its mandated tasks and, in this context, *encourages* MINUSMA to manage them, as appropriate and in accordance with applicable and relevant General Assembly resolutions and United Nations rules and regulations, **and to operate mindfully in the vicinity of cultural and historical sites**

”All of the above”

•Health protection aspects



•Environmental impact

•Aviation Safety!



Project credit to Fernando Grybowski, UNMIS/S

Photo credit FOI

# Interoperability and harmonisation

- **Between**

- Organisations (UN, EU, NATO, OSCE)
- Nations, e.g. SWE, NOR, FIN, DNK, USA, CAN

[Govt Comm. 2007/08:51 National strategy for Swedish involvement in international peace operations]

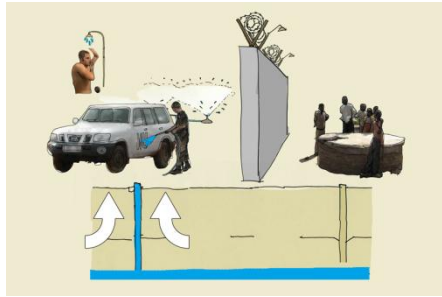
- Authorities, e.g. SwAF, MSB, Sida etc
- Disciplins; e.g. engineering, preventive medicine, legal etc



Photo credit FOI



# Aggregate (cumulative) footprint



**UN PKO Camp**  
(SwAF part of UN mission)



**Refugee camps (UNCHR)** with over 100000 inhabitants, *excluding domestic animals*

**MSB** supports UNHCR with camps, financed by **Sida**

**NGO camps**



**Local community** expanded by 100 % in one year, *excluding domestic animals*

UNDPKO/UN FS Environmental Guideline for UN Field Missions, 2009.  
UNDPKO/UN FS Environmental Policy for UN Field Missions, draft.



NATO Military Principles and Policies for Environmental Protection (EP). MC 469, 2003.  
NATO. Joint NATO Doctrine for Environmental Protection During NATO-led Military Activities. Standardization Agreement 7141, Edition 5, 26 February 2008.  
NATO. Joint NATO Waste Management Requirements During NATO-led Military Activities. Standardization Agreement 2510, Edition 2, 11 September 2009.  
NATO. Environmental Protection Requirements for Petroleum Facilities and Equipment. Standardization Agreement 7102, Edition 2, 27 February 2009.



STANAG 2581 EP (Ed 1) (Ratification Draft 1) – Environmental Protection Standards and Norms for Military Compounds in NATO operations. AJEPP-1  
STANAG 2582 EP (Ed 1) (Ratification Draft 1) - Best Environmental Protection Practices for Military Compounds in NATO operations -AJEPP-2  
STANAG 2583 EP (Ed 1) (Ratification Draft 1) - Environmental Management System in NATO operations -AJEPP-3.

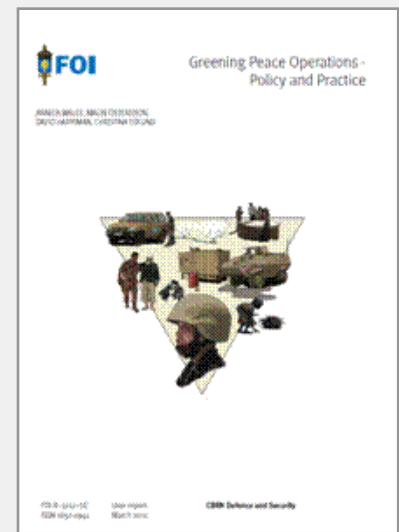
EP concept i EU Military Concept Development  
Implementation Programme 2010-2011 (CDIP 10-11).  
ESDP/PESD. 8475/10. COSDP 295





# Gap analysis

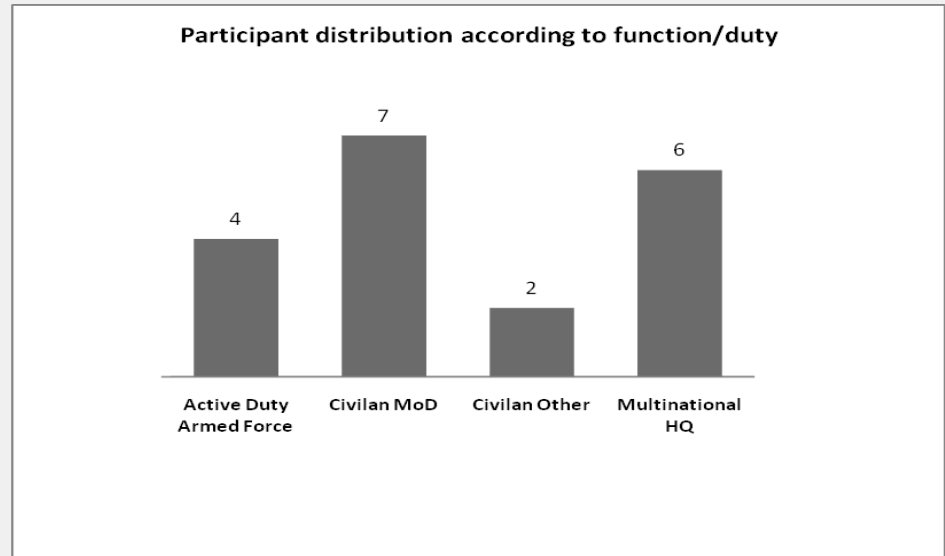
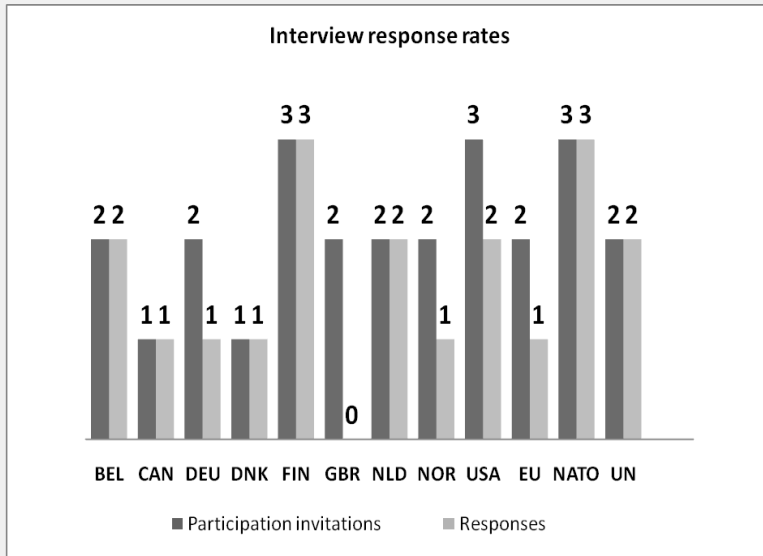
- Research questions
  - What are the main difficulties with handling environmental issues in peace operations?
  - Which environmental policies or other strategic or high level documents in the field of military operations exist, and are peace operations specifically addressed?
  - What could be done to overcome the difficulties encountered, enabling environmental considerations to be 'operationalised'?



FOI-R-3112-SE

# Method

## Policy/doctrine review, questionnaires (n= 19) and interviews



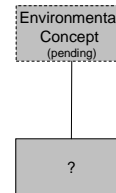
	BEL	CAN	DEU	DNK	GBR	NLD	NOR	USA	FIN	SWE
EU	√	-	√	√	√	√	-	-	√	√
UN	√	√	√	√	√	√	√	√	√	√
NATO	√	√	√	√	√	√	√	√	-*	-*

\* = Partnership for peace

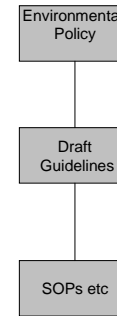
# Aim and objective

- Policy (etc) exist but is not operationalised
- Why is that
- What to do about it?

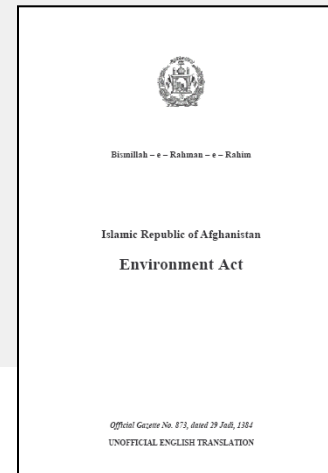
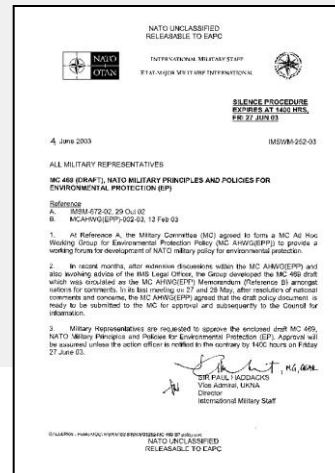
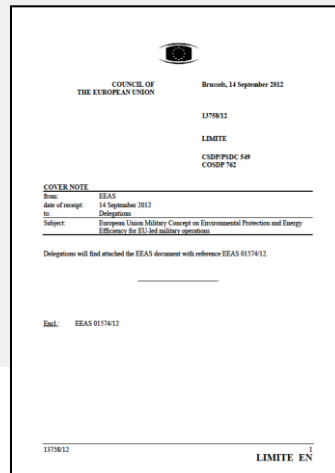
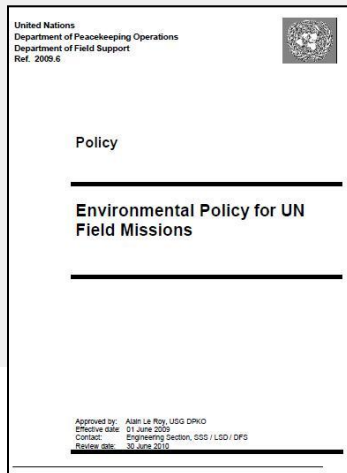
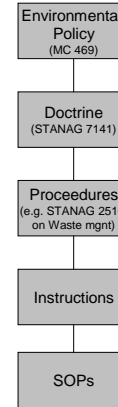
EU



UN



NATO

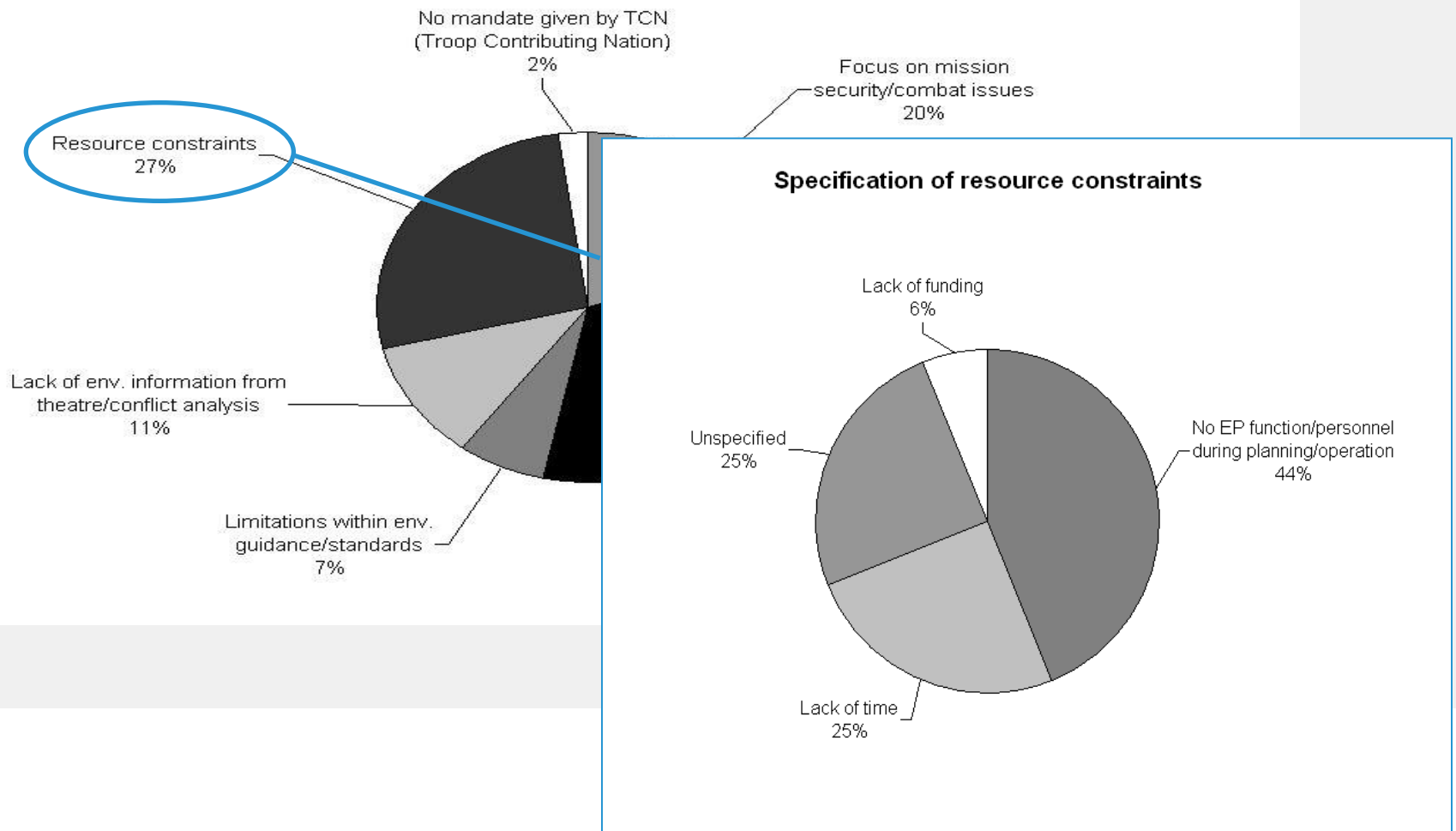


# Survey

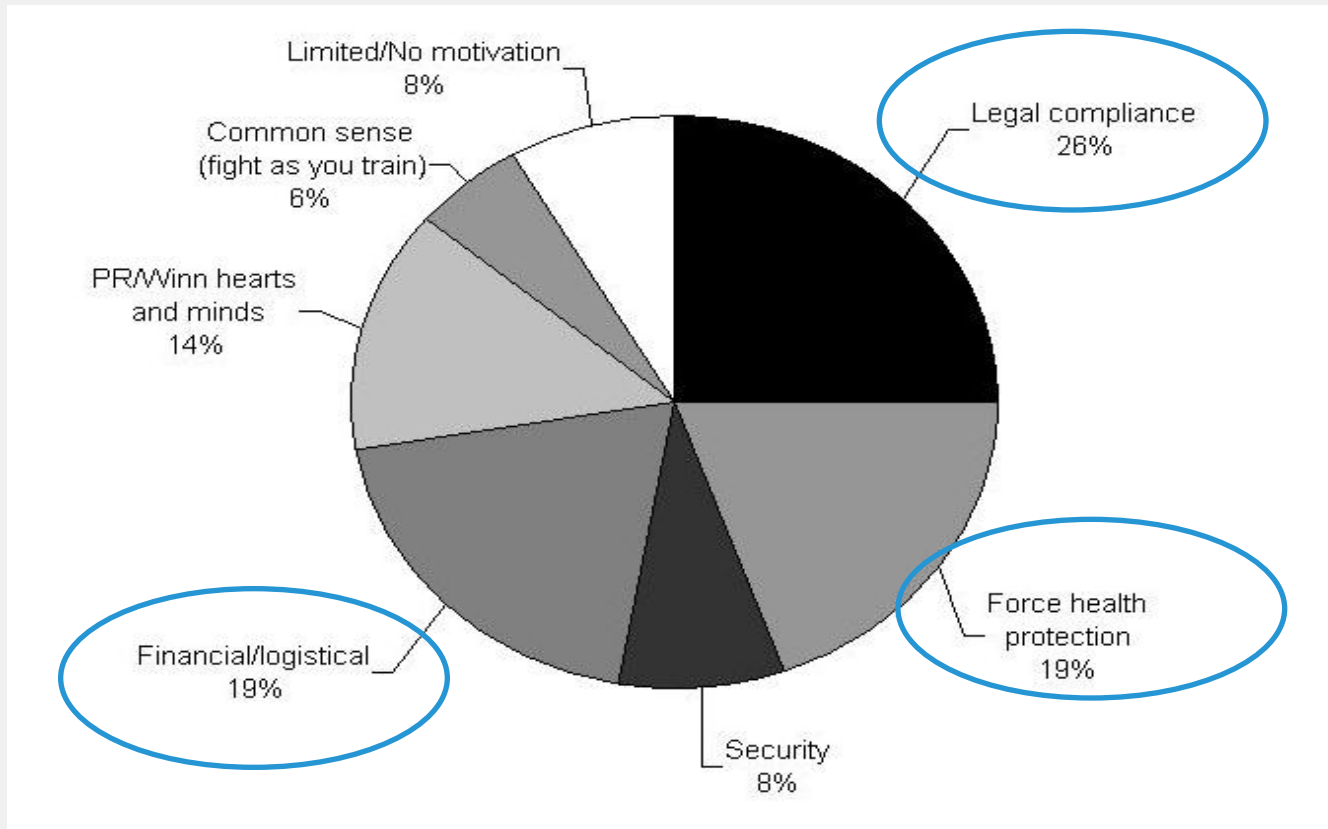
- Q1: How are environmental policies motivated in the planning and execution of complex peace operations?
- Q2: What difficulties and problems do you see as primary for the ability to integrate environmental considerations into strategic and operational planning?
- Q3: Could increased emphasis on the importance of environmental issues for mission success facilitate the integration of environmental considerations into strategic and operational planning?
- Q4: What should an organisation ideally look like in order to make sure environmental considerations get appropriately addressed (as opposed to how it may look today)?

# Q1: challenges

## Difficulties and problems with integrating environmental considerations in planning



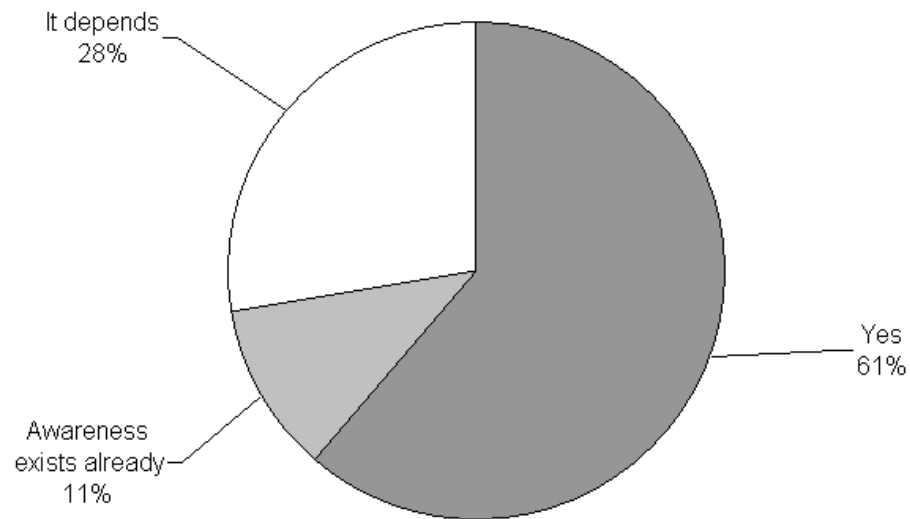
# Q2. Drivers for environmental considerations



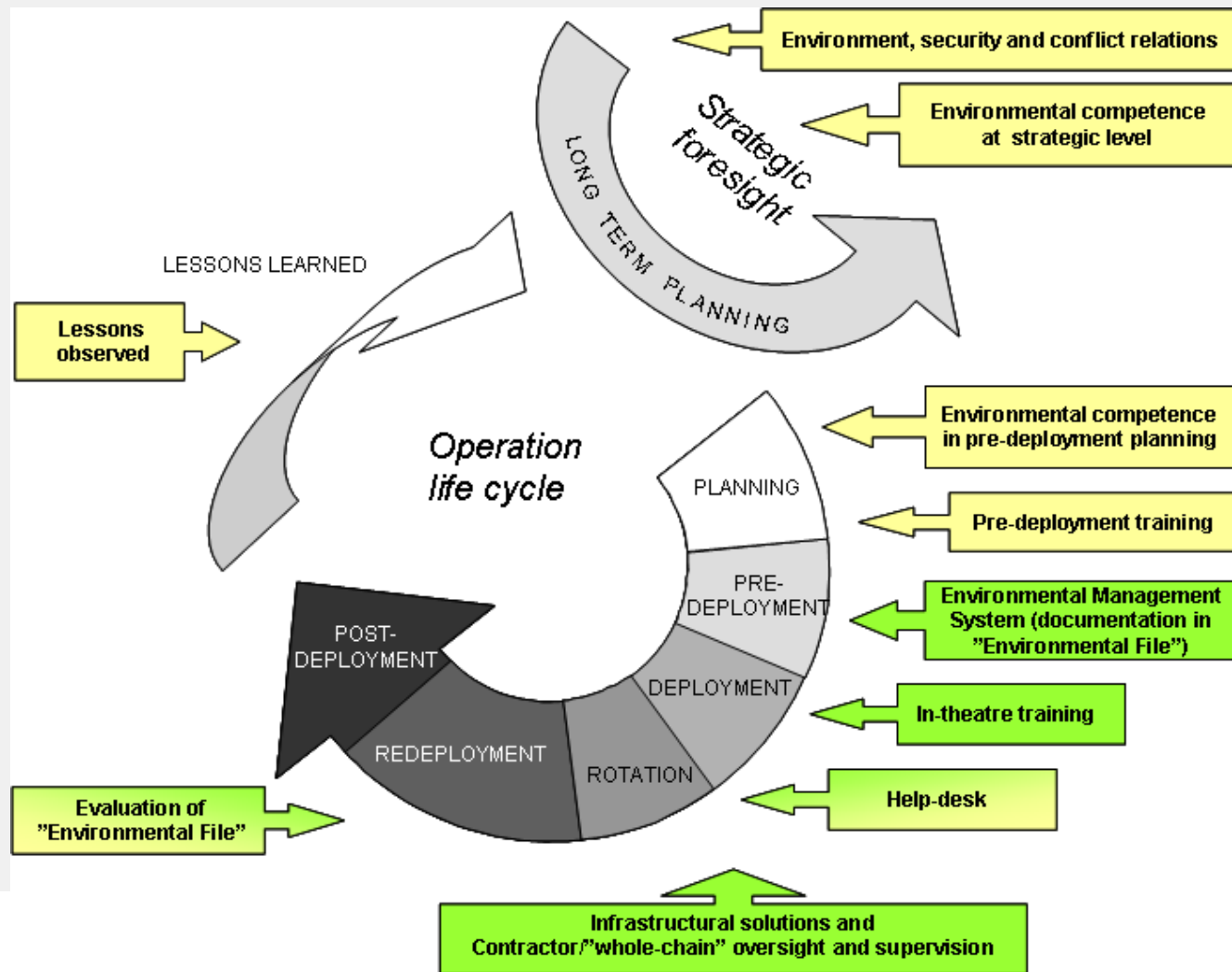


# Q3: Way ahead?

**Could increased emphasis on the importance of environmental issues for mission success facilitate the integration of environmental considerations into strategic and operational planning?**



# Recommendations



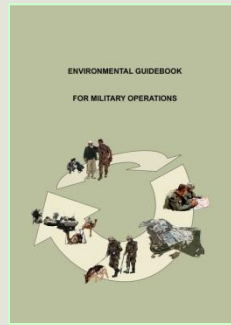
# Begin with the end in mind...

Lessons Identified

Medical/Environmental Intelligence  
Strategic Environmental  
Assessment

Environmental  
Vulnerability  
Assessment

Environmental Closure Report



Initial Analysis

Environmental  
Baseline Survey  
Environmental Impact  
Assessment

Post-deployment

Planning

Re-deployment

Pre-deployment

ANNEX TILL  
OPLAN

Rotation

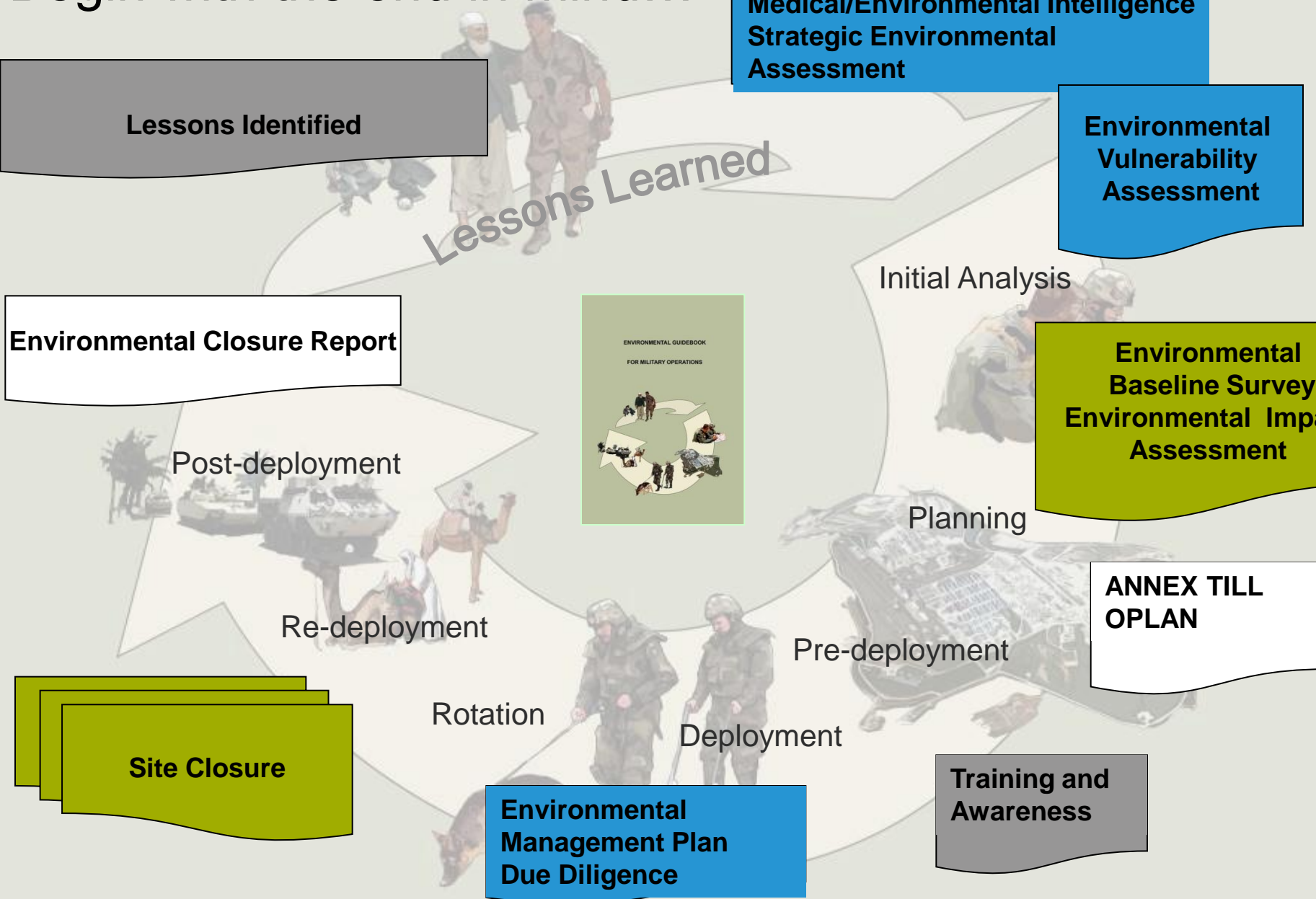
Deployment

Site Closure

Environmental  
Management Plan  
Due Diligence

Training and  
Awareness

Lessons Learned



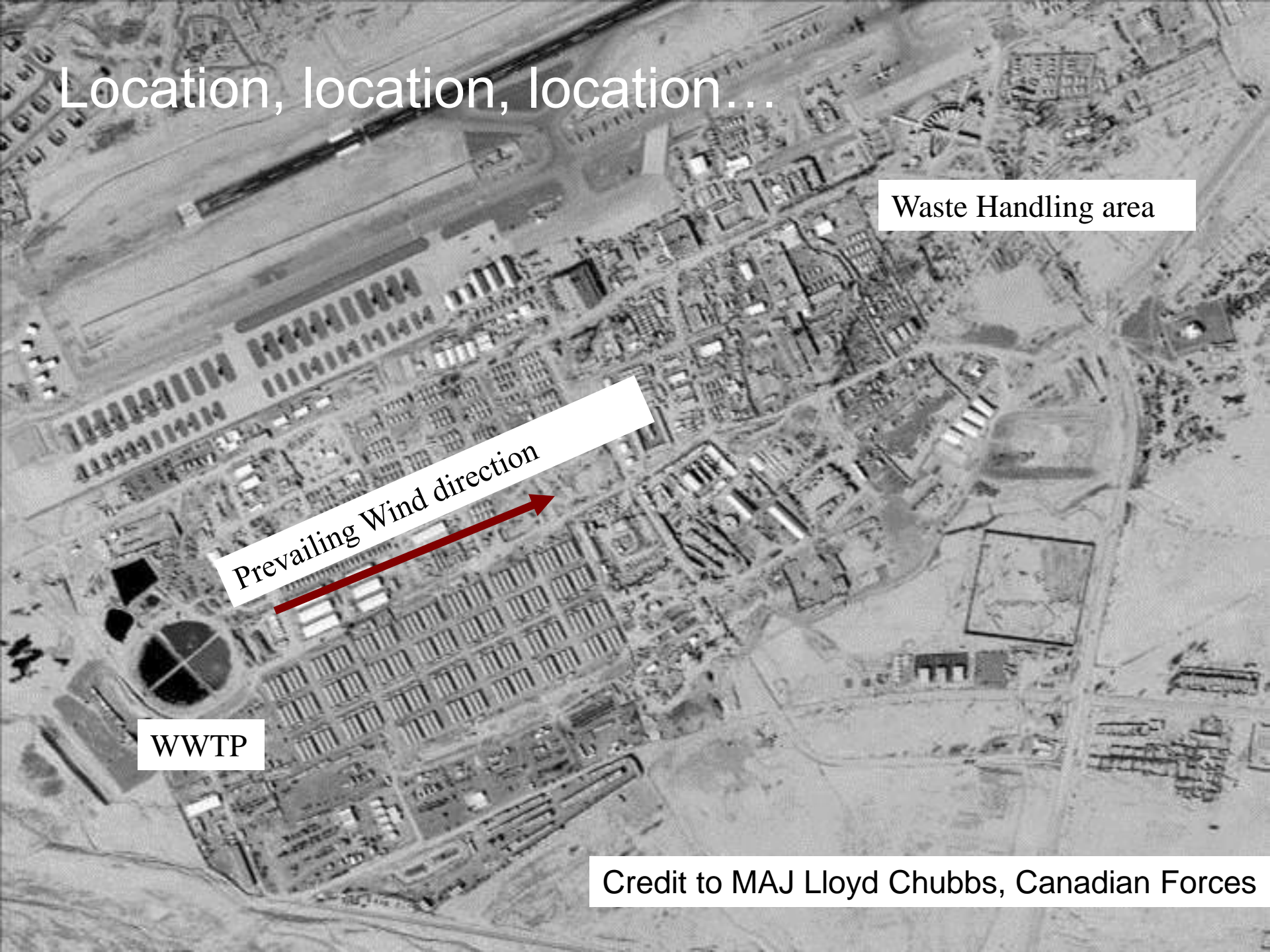
Location, location, location...

Waste Handling area

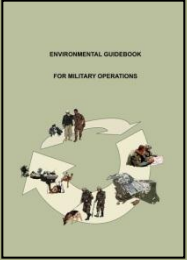
Prevailing Wind direction

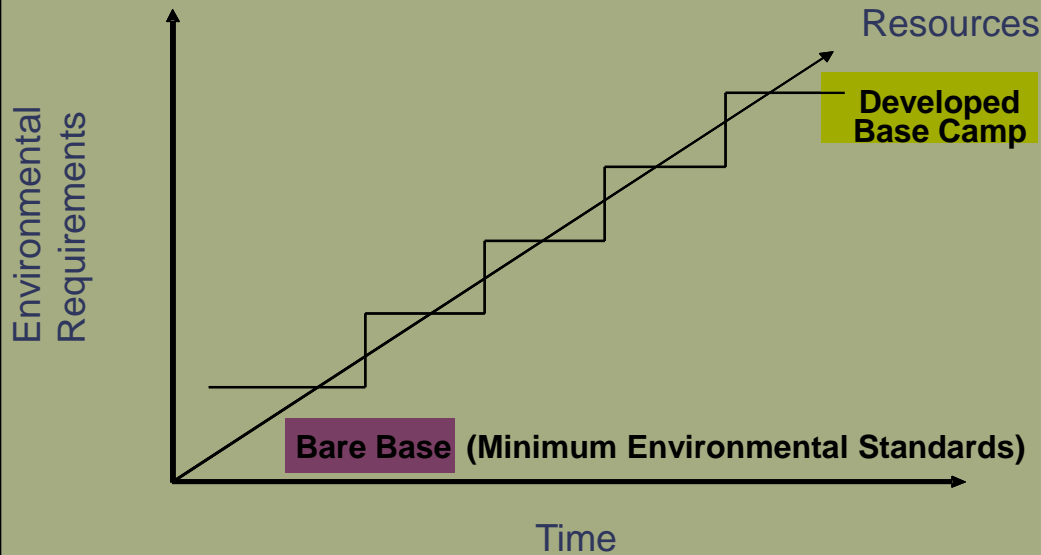
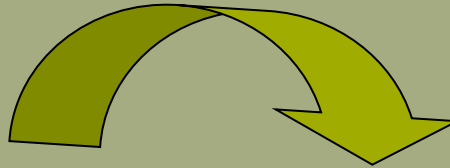
WWTP

Credit to MAJ Lloyd Chubbs, Canadian Forces





Environmental Protocol	Duration of Operation		
	Short-Term	Medium-Term	Long-Term
<b>Solid Waste</b> 	Field expedient methods: burn pits, bury-in-place, back-haul/retrograde	Field expedient methods: burn pits, bury-in-place, back-haul/retrograde. Engineered landfill, incineration	Engineered landfill, incineration, recycling, composting

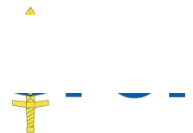


# Host nation infrastructure?

- WWTP Mombasa Kenya



Photo Credit: Swedish Armed Forces





# Contractors?

- Knowledge?
- Equipment?
- Personnel?



**Contractor oversight and supervision is paramount!**

Photo Credit:  
Swedish Armed Forces





# Environment and health considerations in UN peacekeeping operations

## **UN Contact:**

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www: <http://unmiss.unmissions.org/>

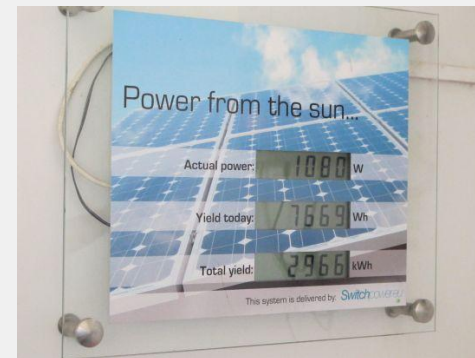


SWEDISH ARMED FORCES



# “Juba III/ UN House Pilot Project”

- Renewable energy and power conservation system
- Water Conservation
- Sustainable Waste Management and GHG reduction
- Performance monitoring



Credit to Fernando Grybowski,  
UNMISS, FOI and partners

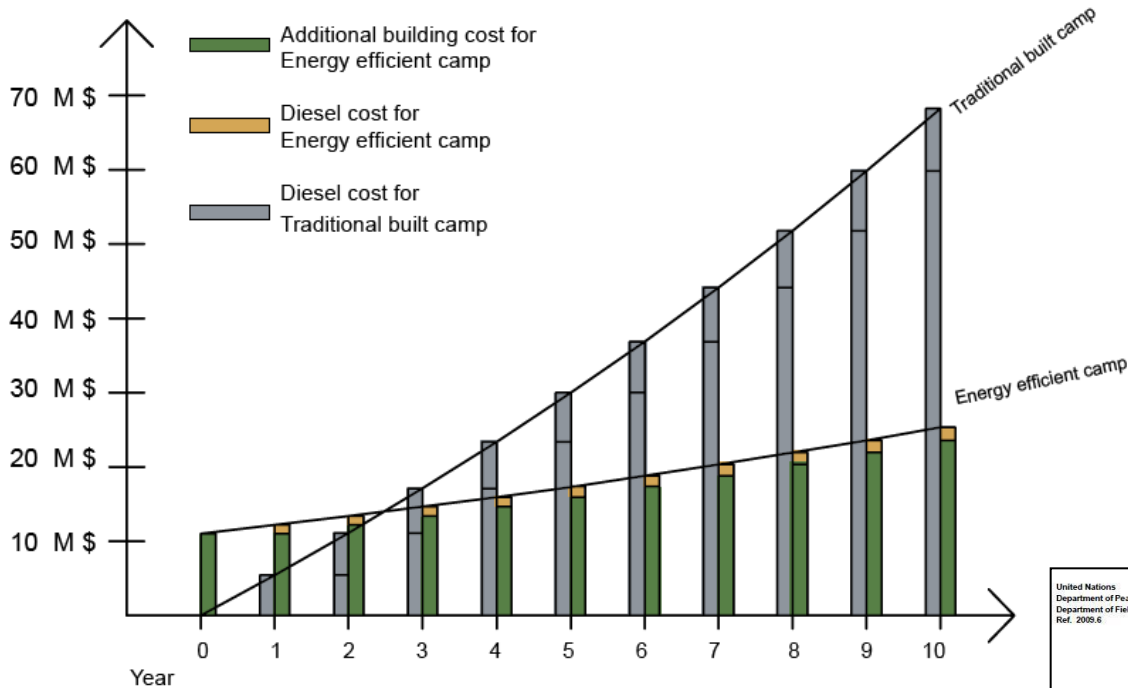


SWEDISH ARMED FORCES

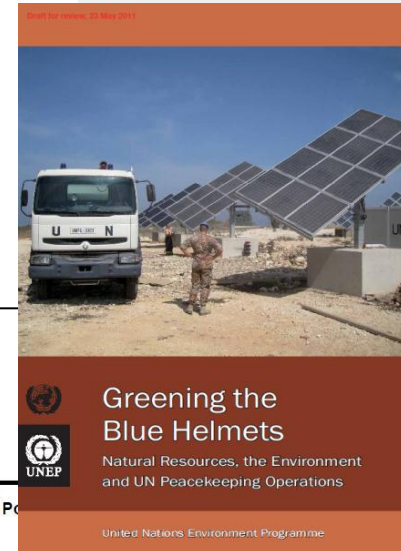


FOI

# Calculated data (ROI)



Repayment on additional investment



United Nations  
Department of Peacekeeping Operations  
Department of Field Support  
Ref. 2009.6

Policy

Environmental Policy  
Field Missions

Approved by: Alan Le Roy, USG DPKO  
Effective date: 01 June 2009  
Contact: Engineering Section, OSS / LSD / OPS  
Review date: 30 June 2010





(soon) validated field data





# FOI Camp CoE CAT screen dump

The screenshot displays the CAT (Camp Assessment Tool) interface. The central 3D view shows a camp layout with various structures. A text overlay in the top left of the 3D view reads: **AVERAGE FPS: 75.404**, **TRIANGLE COUNT: 841010**, and **BATCH COUNT: 1861**.

On the right side, the **Object Class Summary** panel features a pie chart titled **Water Consumption [m³/month]**. The chart is divided into 15 categories, with the largest being **HYGIENE\_CONT...** at 21.1% and **OFFICE\_CONTA...** at 17.4%.

At the bottom of the interface, the **Total Summary** panel contains four gauges:

- Water Consumption [m³/month]:** 265
- Fuel Consumption [m³/month]:** 1229.39978
- Produced Greenhouse Gases [ton/month]:** 13731
- Non Hazardous Waste [ton/month]:** 1746

The left sidebar shows a **Scene** tree with categories like **Vehicles** and **SupportFacilities**. The **Properties** panel for a selected **StorageFacilityMedium** object lists various attributes such as **GUID**, **Position**, and **WaterConsumption**.

# Environmental Awareness Training

- Strategic, operative and tactical level
- From theory to practice
- Lessons shared



Environmental training , UNMIS



Environmental awareness training  
MONUC (civilian and military)



Environmental field remediation  
UNMIS (civilian and military)

# Other accomplishments in UN PKO missions

- Environmental Baseline Studies and Environmental Impact Assessment (UNSOA)
- Wastewater treatment plants
- Compactor/Baler and industrial shredder, landfills (UNMIS)
- PV-diesel hybrid power system
- Using CarLog System to monitor vehicles' idle time (UNMIT)
- AAR on 'Greening Campaign' (UNMIT)



- Solar panels for VHF radio (UNIFIL)
- Solar water heater for ablution unit
- New Generation of Prefabs – improving insulation and self sustainability
- Removing Ozone Depleting Refrigerants
- UNAMID Water conference

Picture Credit: Sophie Raviers, UNDFS



# Key take aways!

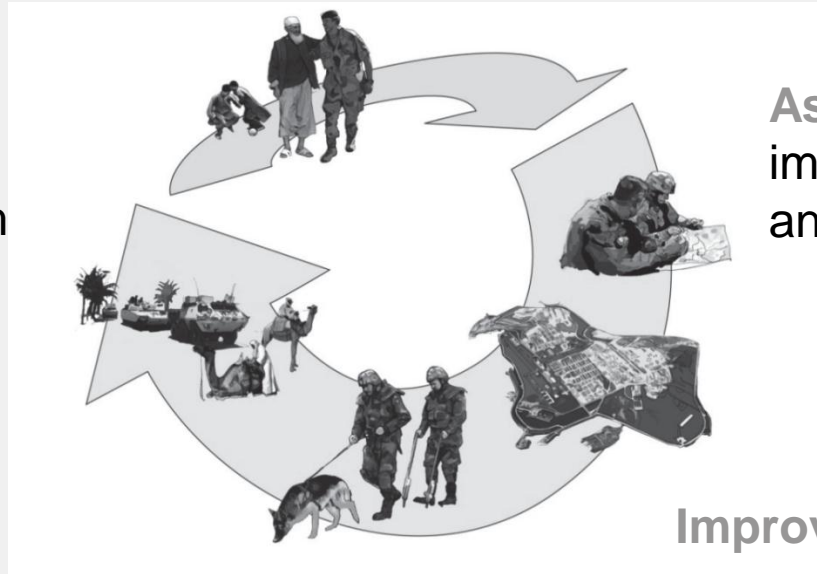
- Environmental issues needs to be integrated early in the planning process
- Complex reality requires decision tools and templates, process needs to be systematic
- Credibility of data; need for on-site verification!
- No silver bullet, capability to choose the right solution at the right time is paramount

# Overall: tools for improvement

Urgent need for standards for environmental information systems and for data sharing

Horizon scanning and Environmental intelligence as an iterative process throughout the life cycle of a mission

Collect and transform lessons observed/heard, to true lessons learned



Assessment tools can improve foresight capacity and interoperability

Due diligence, oversight and supervision is paramount

Improved training and awareness campaigns

# FOI and SwAF publications



FOI – an innovative partner in camp solutions

SwAF MedInt report  
Northern Afghanistan



Version 5  
Cut off date 2009-03-15

VERSION 5 (March 2009)

ENVIRONMENTAL GUIDEBOOK

FOR MILITARY OPERATIONS



**FOI**

Greening Peace Operations - Policy and Practice

ANNA WALLE, MALIN DOTTORSSON, DAVID WARRIALL, CHRISTINA LILJEDAHN

FOI R-3112-SE  
ISSN 1650-1942

User report  
March 2012

CBRN Defence and Security

**FOI**

Base Camp Solid Waste Management

Challenges and way forward, towards sustainable management practices

EMIL MARTINSSON, ANNIKA WALLE, JEFFREY LEWIS, BIRGITTA LIJEDAHN

FOI R-3112-SE  
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Base Camp Water Management

Challenges and way forward, towards sustainable supply practices

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FOI R-3112-SE  
ISSN 1650-1942

Scientific report  
April 2012

CBRN Defence and Security

**FOI**

Avveckling av Camp Victoria, Kosovo

Miljöspekter under avvecklingsprocessen

CHRISTINA EDLUND, SEBASTIAN STÅLGRIM, CAMILLA E. ANDERSSON

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Avveckling av Camp Victoria, Kosovo

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FOI R-3112-SE  
ISSN 1650-1942

Arvändningsrapport  
2010-2012

September 2012

CBRN skydd och säkerhet

**FOI**

Managing Unintended Consequences of Peace Support Operations

CECILIA HULL, MIKAEL ERIKSSON, JUSTIN MACDERMOTT, FANNY RUDEVAND ANNIKA WALLE

FOI R-3112-SE  
ISSN 1650-1942

User report  
December 2009

Defence Analysis

UNEP 東京大学 McGill PRIO

Chapter first appeared in *Assessing and Restoring Natural Resources in Post-Conflict Peacebuilding* and by D. Jansen and S. Lowenig. It is one of 6 edited books on *Post-Conflict Peacebuilding and Natural Resource Management* for more information, see [www.environmentalpeacebuilding.org](http://www.environmentalpeacebuilding.org). The full book can be ordered from Routledge at <http://www.routledge.com/books/details/9781134971121/>.

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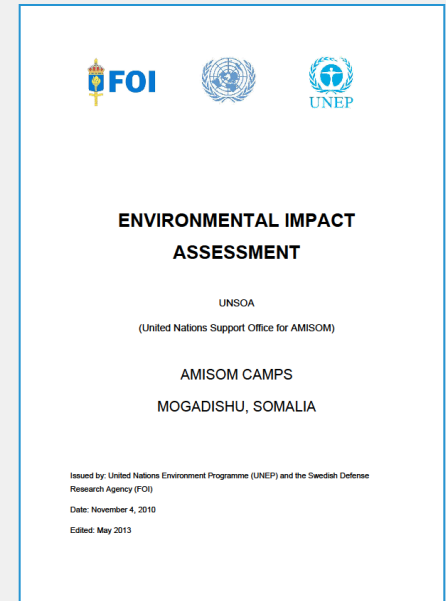
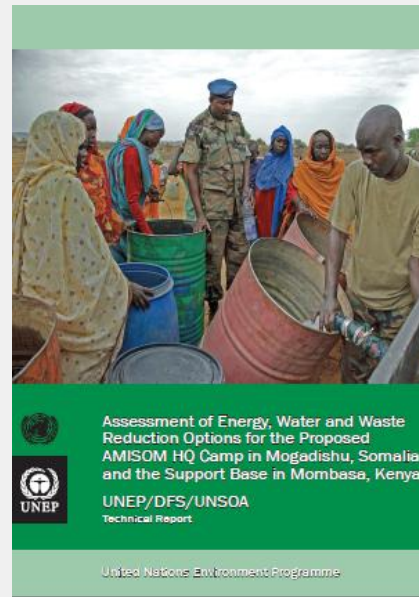
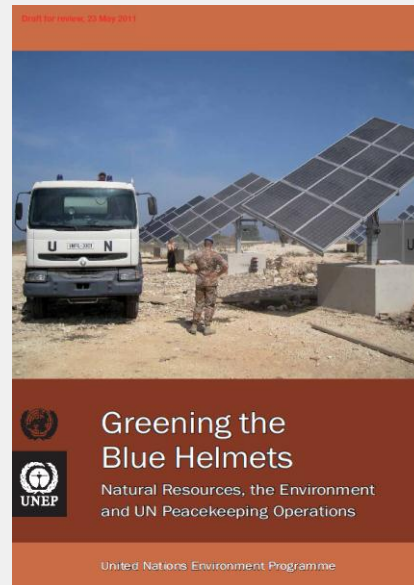
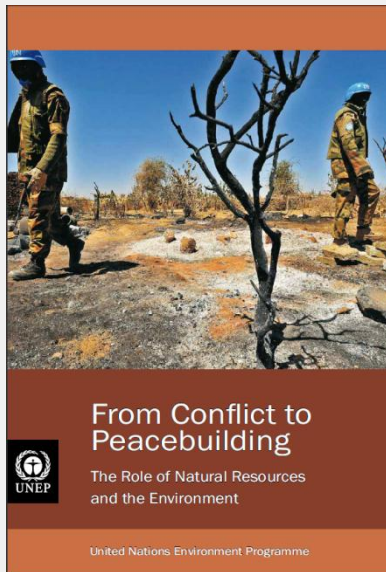
**Medical and environmental intelligence in peace and crisis management operations**  
Birgitta Liljedahl, Annika Walle, Björn Sandström, and Louise Simonsson  
Former Defense Research Agency (FOU)  
Online publication date: May 2012

Suggested citation: Liljedahl, A. Walle, B. Sandström, and L. Simonsson. 2012. Medical and environmental intelligence in peace and crisis management operations. In *Assessing and Restoring Natural Resources in Post-Conflict Peacebuilding*, ed. D. Jansen and S. Lowenig. London: Earthscan.

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# UN publications





# Questions?

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