Environmental Intelligence for Contingency Operations

The Use of Non-Classified Information to Supplement and Enhance the Planning and Execution of Military Operations

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JSEM Conference
23 Mar 06
Agenda

• Issue
• Open Sources
• Define Environmental Intelligence
• Uses of Environmental Intelligence
• Preliminary Findings
• Recommendations
The Issue...

The Army could improve its understanding of environmental considerations and better incorporate them into plans and operations.

“How Can Open Source Information in Whole or Part address this Actionable Issue?”

“Engineer... Doc... Look here... I’m considering a basecamp right there... Look at the environment... terrain, soils, prior land use, infrastructure, local industry, pests & diseases, and anything else you can think of... and give me a recommendation.”
“Open sources can provide much of the information required to support peacetime needs and stabilization and reconstruction operations. They could be utilized to better effect, however. It is almost always the case that, because anyone can do open source analysis, no one really does it. Or, at least no one does it really well.” (page 147)
“The knowledge required to be effective in achieving U.S. objectives without conflict or in conducting stabilization and reconstruction is different from the military knowledge required to successfully prevail during hostilities. This type of knowledge has not always been thought of as a military requirement or commander’s critical information requirement.” (page 110)
Environmental Intelligence (EI) and Information

- **Potential Definition**: information on the spectrum of natural or developed environment, resources, or programs that may impact on, or are affected by, the planning and execution of military operations.

- **Environmental Military Intel**
  - Regional Info
  - Site-Specific Info

- **Environmental Sciences**
  - Scientific Data & Technology
  - Best Practices

Following the “Threads” ... the need for EI

- **Military Operations**
  - Vulnerabilities (Friendly & Threat)
  - Areas of Strategic/Tactical Importance
  - Predictive Analysis

- **Policy Implementation**
  - Health & Welfare
  - Compliance
  - Stewardship
  - Environmental Sustainment

- **Decisive Operations**
- **Sustain Forces**
- **Stabilization and Reconstruction**
Environmental Domains

Natural Environment

• Meteorologic
  – Includes Air Quality; Climate
• Oceanographic
• Geologic
• Hydrogeologic
• Hydrologic
• Topographic
• Ecologic
  – Vegetation and Fauna (esp. poisonous; rare or endangered)
  – Wildlife (esp. poisonous; rare or endangered)
  – Wetlands

Social Environment

• Public Involvement
  – Communication, Coordination, Consultation, Collaboration
• Legal
  – Laws, Treaties, SOFAs
  – Transboundary transport of HM/HW

Developed Environment

• Environmental/Land-Use History
  – UXO
  – Mines
  – Prior Contamination (chemical, industrial, radiological)
• Economic
  – Agriculture; Industry; Mining
• Industrial
  – Hazardous Wastes; Hazardous Chemicals
  – Constituents of Concern
• Health
  – Disease; Water; Air; Industry
• Civil Infrastructure
  – Roads; Water; Sewage/Trash Disposal; Power Grid
  – Bases; Camps; Basecamps
• Natural/Cultural Resources
  – Archeological and Historical

Different Domains have Differing Availability of Open Source Data
Environmental Products

• CONPLAN/OPLAN Annex L
  “Environmental Considerations”
  – Environmental Assessments
    • Environmental Impact Statement (EIS)
    • Environmental Study (ES)
    • Environmental Report (ER)
  – Site Assessments
    • Environmental Baseline Survey (EBS)
    • Environmental Health Site Assessment (EHSA)
    • Closure Report

• Analytic and Predictive Narratives (Within CONPLAN Annexes)
  • Meteorologic
  • Oceanographic
  • Geologic
  • Hydrogeologic
  • Hydrologic
  • Topographic
  • Ecologic
  • Public Involvement
  • Legal
  • Engineer
  • Civil Infrastructure
  • Economic
  • Health

• PAO
  • Environmental/Land-Use History
  • Natural/Cultural Resources
  • Industrial

• J2
  • Engineer/J2

• JAG
  • Surgeon/Prev. Medicine; Chemo

• Engineer
  • Directive, Not Necessarily Technical

• Engineer; Surgeon/PM; Env’l Extra Duty Officer

• Unit SOPs
  • J4, Envir’l Coordinator

• Support Contracts
  • Acquisition Contracting; JAG
Joint Planning and Execution System Annexes and Appendices with Significant Environmental Considerations

<table>
<thead>
<tr>
<th>Joint Planning and Execution System (JOPES) Location</th>
<th>Propone nt Staff</th>
<th>Principal Staff and Special Capabilities</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annex B, Appendix 1</td>
<td>J2</td>
<td>All, primarily ENGR, Surgeon, and CA</td>
<td>Environmental priority intelligence requirement (PIR) may include information on planned base camps and other sites.</td>
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<tr>
<td>Annex B, Appendix 4</td>
<td>J2</td>
<td>Fire Support Element, ENGR, CA, Staff Judge Advocate (SJA)</td>
<td>Cultural considerations and the environmental effects of specific targeting must be addressed.</td>
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<td>Annex C, Appendix 2</td>
<td>Chemical Officer (CHEMO)</td>
<td>SJA, Surgeon</td>
<td>Use of riot control agents and herbicides require the integration of environmental considerations.</td>
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<td>Annex C, Appendix 7</td>
<td>J3</td>
<td>J2, CHEMO, ENGR</td>
<td>Reconnaissance in general, to include the use of specific engineer and chemical, biological, radiological, and nuclear (CBRN) reconnaissance assets and expertise may be necessary for verifying base camp (or other similar) locations.</td>
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<tr>
<td>Annex D, Appendix 1</td>
<td>J4</td>
<td>ENGR, Surgeon</td>
<td>Petroleum, oils, and lubricants (POL) always has significant embedded environmental considerations.</td>
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<td>Annex D, Appendix 2</td>
<td>J4</td>
<td>ENGR, Surgeon</td>
<td>Water sampling, well site selection and preparation contain environmental considerations.</td>
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<td>Annex L</td>
<td>ENGR</td>
<td>J4, SJA, Surgeon</td>
<td>Civil affairs, engineering, legal, medical, this may involve all members of the joint environmental management board (JEMB)</td>
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</table>
Simultaneous & Synchronous “System Pyramids”

**Analysis**
- CDR
- J3/G3/S3
- Coordinating & Special Staff
- Technical and Scientific Support Organizations & Tools
  - CHPPM
  - AFMIC
  - TEC
  - CIA
  - USAEC
  - USMA
  - GSAT
  - NGA

**Information**
- Predictive
- CAA
- Analytic
- Raw
  - Open-Source
  - “Gray” Literature
  - DOEHRS
  - Lim’D Distro
  - Databases
  - Sensors

NCOW Principles
Users Pull Data Collaboration Technologies

Improve Information *Between* the “Pyramids”, and *To* the Commander
Preliminary Findings

- Useful to “Flowchart” flow of environmental info from source to user

- Much Open Source Info… not in all domains

- No “1st Stop” assistance for environmental intelligence (EI)

- Support Tools are Emerging
Example - Flowcharting

Surgeon/Preventive Medicine; Chemical Officer

Unclassified
- Running Searches
- Peer Review Literature
- NGO and OGA Self Reporting

“Gray Literature” (Conferences)
- Foreign News Translation

DOEHS
- Web
- Library & Abstract Searches
- For. Lang. Doc’ts

Classified

AFMIC

CHPPM

MSAT

GSAT

NGA

AFMIC

CHPPM

NASA

NGA

ID POCs/Concentrations of Expertise; Best Research Practices; Good Sources of Data
Much Open Source Info…
But Keep in Mind…

• **Some Areas of Abundant Info**
  – Meteorology; Geology; Hydrogeology; Topography

• **Some Areas with Little Info**
  – Environmental History; Ecology
  – Specific Site Info

• **Predictive Analysis**
  – Generalities can be Appropriate

• **Much Open Source Info is Unvetted**
  – “Gray” Literature

• **OPSEC**
  – Searches from .mil and .gov sites can be telling
No Discernible “1st Stop” for Environmental Intelligence

• Many DoD and OGA “Centers of Expertise”
  • CHPPM, AFMIC for Environmental Health
  • NGA for Land History & Use
  • CIA for General Country Information
  • TEC for Hydrogeology; Hydrology; Urban Visualization
  • … many others

• Helps (significantly) to be familiar with Organization & Capabilities

• Begin with Reference Lists (POCs; Websites)
## Research References

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<th>Name</th>
<th>Phone #</th>
<th>Web Address</th>
<th>Notes</th>
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<td>Organizations</td>
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<tr>
<td>★★★★ USACHPPM, (United States Army Center for He (800) 222-9698</td>
<td><a href="http://chppm-www.apgea.army.mil/">http://chppm-www.apgea.army.mil/</a></td>
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<td>★★★★ AFMIC</td>
<td>301-619-7574</td>
<td><a href="http://www.afmic.detrick.army.m">http://www.afmic.detrick.army.m</a> Must Register for a access</td>
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<td>Web Sites</td>
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<td>None - Prototype</td>
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<td>NR DOEHR</td>
<td>1-800-600-9332</td>
<td><a href="https://doehrswww.apgea.army.mil/dohrsdr/">https://doehrswww.apgea.army.mil/dohrsdr/</a></td>
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<td>★★★ Public Involvement Toolbox</td>
<td><a href="https://www.asaie.army.mil/pitoolbox">https://www.asaie.army.mil/pitoolbox</a></td>
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Notional Ratings Provided for Example
Support Tools are Emerging

- **“Expert” Systems**
  - GeoBEST
    - Basecamp Engineering and Design
    - Army’s Standards developed by ERDC (Joint Tool)
  - MSAT
    - Emerging Medical Threats; Health-related Trends
    - DoD ACTD
  - Global Situational Awareness Tool (GSAT)
    - Web-Based Expeditionary Planning
    - Proponent is AFSOC

- **Existing Sites & Portals for Info Access & Searches**
  - OSD “DISDI Portal” (IGI&S, GeoBase; GeoReadiness; GeoFidelis)
  - DNI “OSIS”
  - (…Many Others Exist)

- **Deep Web “Mining Tools”**
Potential “Way Ahead”

• Web-Based “1st Stop” for EI Research …
  – Post Info for “Smart Pull” (vice “Smart Push”)
    • POCs; Best Practices; “Learn the System”
  – Interaction (Collaboration) with the Field
  – Informative/Educational
  – Initial AEPI “Quick Start” with Follow-On Sponsorship?

• Endorsement for Environmental Technologies…
  – Search Tools
  – “Expert” Systems
  – Remote Data Collection

• Education …
  – Know where Env’l Info comes from and how it’s Processed

• Awareness of Technical Organizations
  – Wider Dissemination of Info and Skills
One Vision of the Future

- Quality CONPLAN Annexes
- Regional Environmental Concerns
- Standard Basecamp Design & Maintenance
- Data Repositories
- “1st Stop” Environmental Intelligence Portal
- UN, NGO Sites
- Foreign/Comm’t Sites
- Gov’t Sites
- Field Training
- Basecamp Support Contracts
- Sustainability Model
- Lessons Learned & Continuous Learning
- New Technologies
- Standard Basecamp Design & Maintenance
- Field Training
- Sustainability Model
- Lessons Learned & Continuous Learning
- New Technologies
Contact Information

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  (303) 422-1525
Questions?

EDITORIAL CARTOON  By Cam Cardow/The Ottawa Citizen

I SEE THERE'S BEEN A FEW CHANGES SINCE OUR LAST VISIT TO EARTH...
Backup Slides
Engineer Proponency Products (1)

Geology  Hydrogeology  Hydrology  Topography  Ecology  Civil Engineering  Env’l History

Engr School  Corps of Engineers  Regional & District Offices  G2/J2  AFMIC  CHPPM

See earlier for Data Sources

Regional Studies

Preliminary Env’l Assessment

Country Studies

Maps

National Sources  Commercial Imagery  Other Open Sources

Unclassified

Classified

Regional Studies

Country Studies

TEC

Engr School
“Weather” Proponency Products

Current Conditions
Forecast - 72 Hrs
Forecast - 5-7 Days
Climatological
Operational Assessments
- Air, Maritime, Ground Mobility
- Other (Coordinate with other staff)

Post Processing
• Air Force Weather Agency

NWS
AFCCC
DAMI-TOB (Army)

Unclassified
WMO
NOAA
Special Sensors
Equipment Capabilities

Classified
Environmental Coordinator
Proponency Products

SOPs
- HW Storage, Management, Disposal
- HM Management
- Solid Waste Management
- Non-Hazardous Liquid Waste Management
- Water (Potable) Certification
- Spill Prevention and Response
- Air Pollution Management
- Noise Pollution Management
- Pollution Prevention and Conservation
- Pesticide Management

Compliance Checklists

Env. Engineering Solutions
- Engr School

Internal Library

Field & Technical Manuals
JAG Proponency Products

Pertinent Laws, Treaties, and SOFAs
Legal Rationale for Environmental Assessment
Transportation of HW Assessment

Higher SJA Office

Unclassified
Laws, Treaties, SOFAs
Legal Precedent

 Classified
J2 Proponency Products

Economy

Natural Cultural Resources

Country Studies

Unclassified

Classified

CIA

Country Studies
PAO Proponency Products

Press Releases
Community Roundtables
Meetings with Concerned Entities

Post/Facility Env. Experts

- Concerned Entities (e.g. NGOs)
- Community Relations

Public Involvement Website

Unclassified

Classified