

CANADIAN
ARMY



ARMÉE
CANADIENNE

Toward Army 2040: A Methodology to Address Capability Development in an Uncertain Future



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FORTS. FIERS. PRÊTS.

Background



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The Canadian Army Land Warfare Centre (CALWC) advises the Commander Canadian Army (Comd CA) on **the future security environment**, the **capabilities that will be required** to operate in that environment and **alternative concepts and technologies** to achieve the **required capabilities**.



FUTURE

VISION



Hybrid Warfare

Net Wars *Unrestricted Warfare*

“Revolution in Military Affairs”

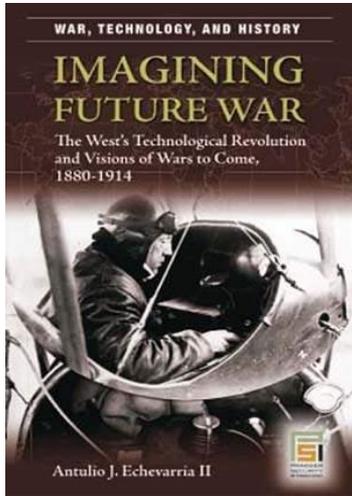
Virtual Wars **New Age Wars**

Asymmetric Warfare

Small Wars Generation ? Warfare







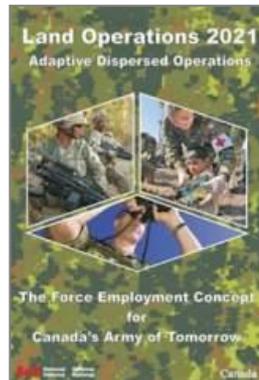
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FORTS. FIERS. PRÊTS.

Three Army Model

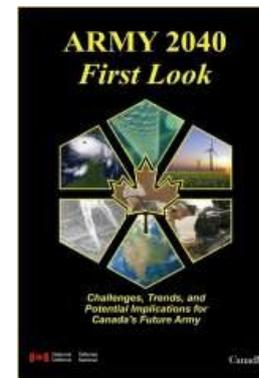
**Army of Today
(now +5 yrs)**



**Army of Tomorrow
(10-15 yrs)**



**Future Army
(25-30 yrs)**



2013

Manage



Build



2016

Design



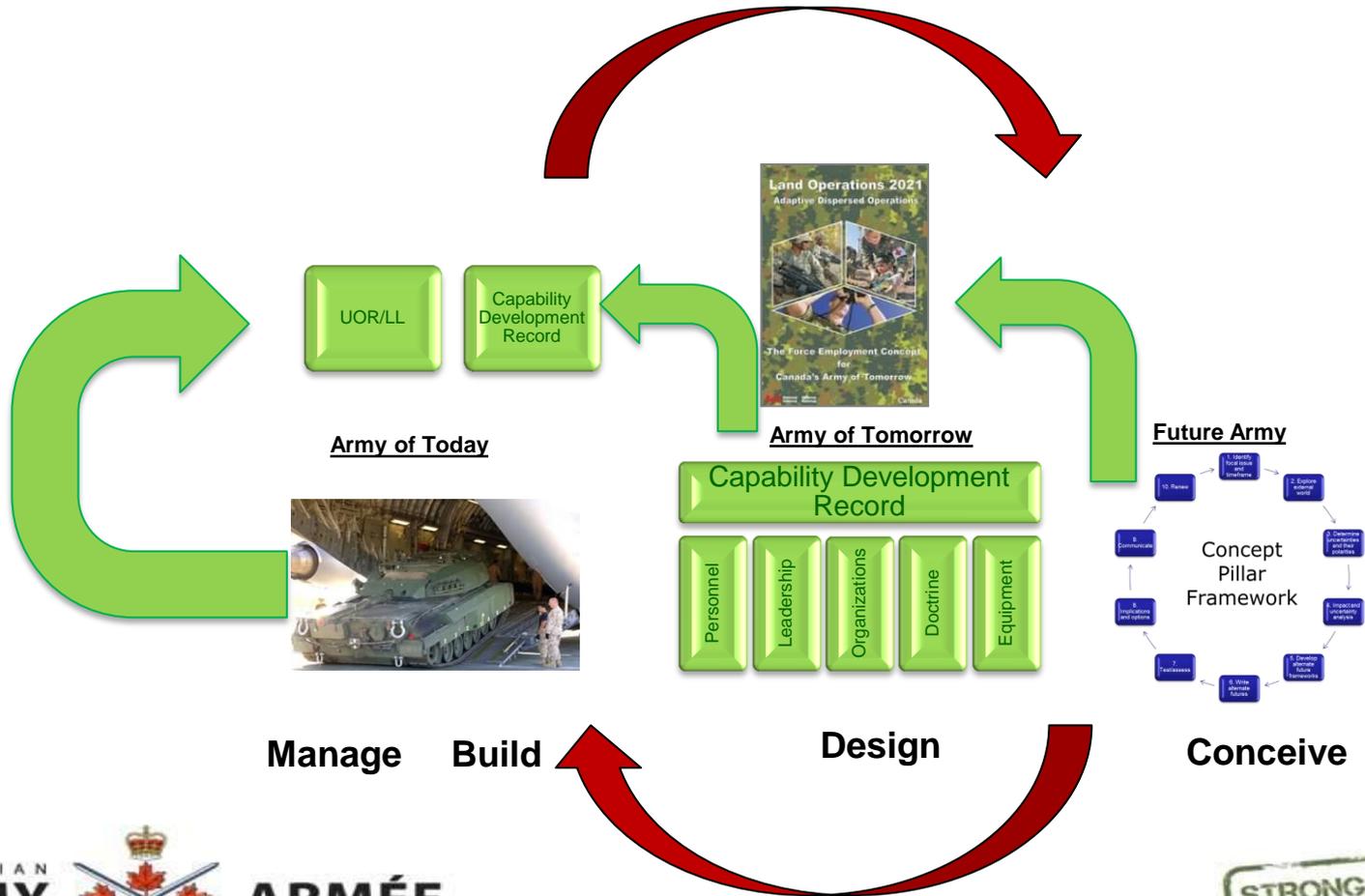
2021

Conceive



2040

Dynamic Army Capability Development



Methodology

Three yellow directional signs are mounted on a green metal post against a clear blue sky. The top sign points left and says '← PAST'. The middle sign says 'PRESENT'. The bottom sign points right and says 'FUTURE →'.

← PAST

PRESENT

FUTURE →

**WHY
2040?**



Capability Development



Process

INTRODUCTION TO DOCTRINE

In the absence of sound doctrine that you have developed yourself, someone else will decide how your forces will be deployed and employed.

- Major-General J. J. C. Bouchard

People

**Training &
Education**

Equipment

Anticipate





Future

SUCCESS

FAILURE

Procurement Decisions

**Life cycle
Relevance?**

**CHANGE
AHEAD**

Creativity

The word "Creativity" is rendered in a light blue, serif font against a dark blue background. Each letter is decorated with a different object: a white hat on the 'C', a string of colorful beads arching over the 'a', a red heart on the 'v', a small figure on the 't', and a green landscape on the 'y'. A string is also attached to the bottom of the 'e' and 'i'.



**“THE”
FUTURE**



**TOUGH
DECISIONS
AHEAD**

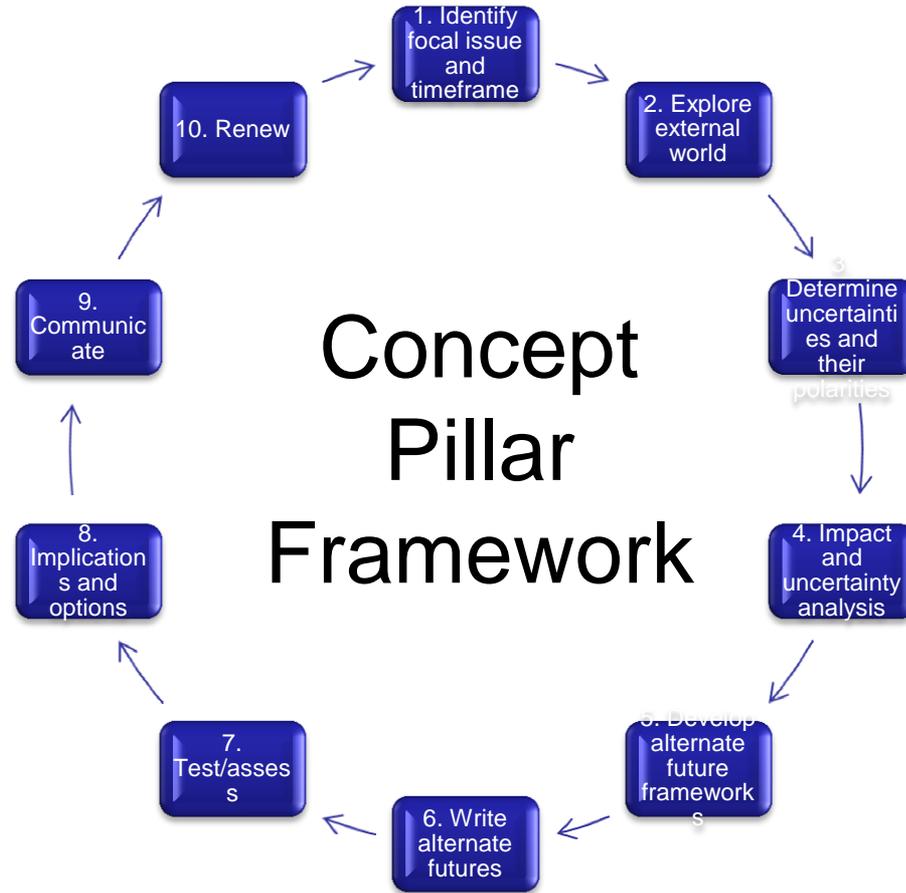
**Future
capabilities?**



FORESIGHT

It never hurts to be prepared.

Conceive Methodology



Land Capability Development Continuum

Conceive

ACDB

Design

ACDB

Build

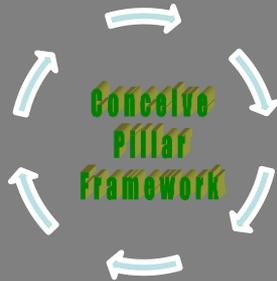
APB

Manage

Capability Development

Concept Development

Operating concepts are conceived and translated into capability requirements.



Capability Design

Selected capability requirements are translated into validated designs for force employment – doctrine and structures.

Capability Integration

Integrates the PRICIE components to realize the implementation of the capabilities.

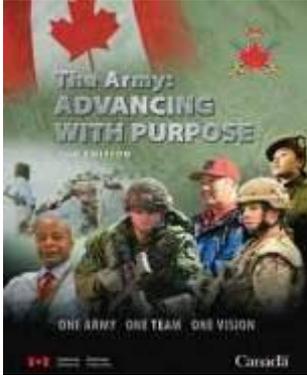
Force Management

Force Management

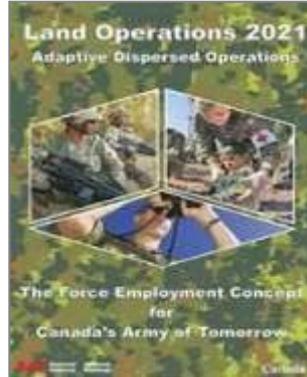
Manages the daily operation of the Land Force in keeping with the Managed Readiness Program.

Land Force Planning Horizons

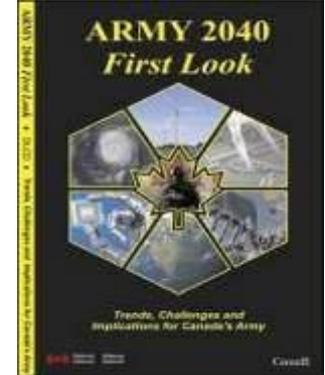
Army of Today



Army of Tomorrow



Future Army



2010

2015

2018

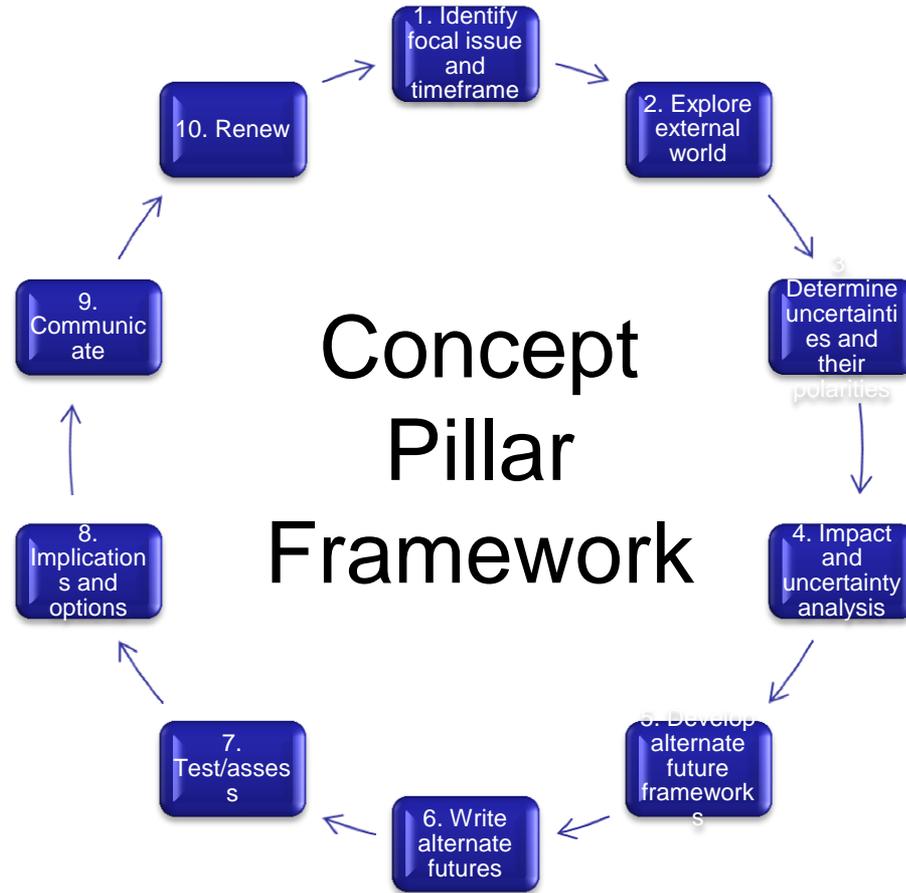
2021

2028

2033

2040

Conceive Methodology

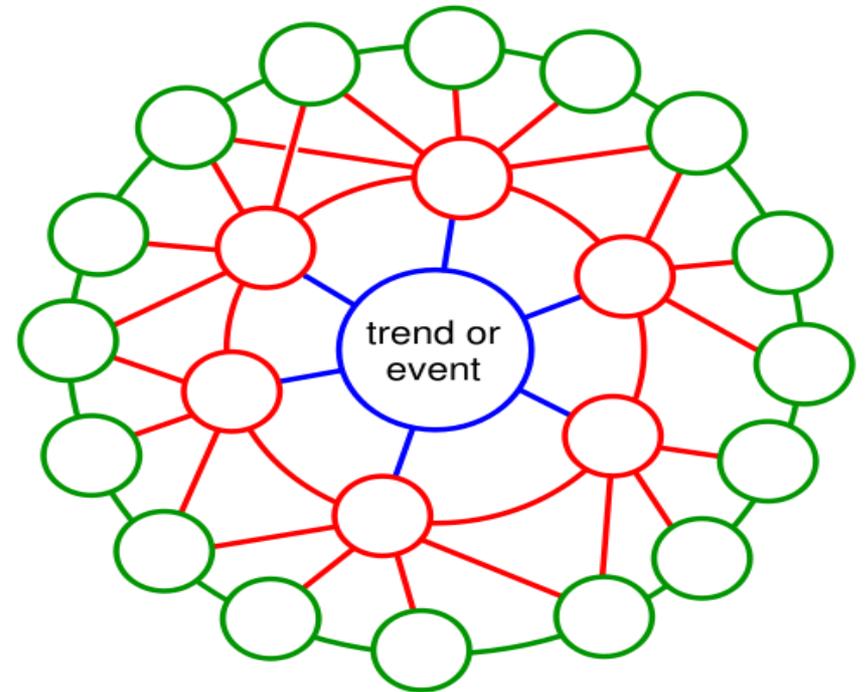


1. Focal Issue and Time Frame

- A2040 aim is to establish a foundation for strategic dialogue based on key areas where Army senior leadership should focus attention today in order to remain relevant in 2040.

3. Determine Uncertainties and their Polarities (Futures Wheel)

- Futures Wheel methodology is one of the most common methods among futurists
- A way of organizing thinking and questioning about the future - a kind of structured brainstorming
- Designed to show complex interrelationships between drivers
- Flexible and relatively easy and straightforward to use



3. Determine Uncertainties and their Polarities

- **Impact of age & demographics on military composition**
- **Energy Security**
- **Exponential Technology Growth**
- **Human/Social response to technology**
- **Expansion of operating environments**
- **Global Environmental Change**
- **Globalization**
- **Conflicting / Shifting Identities**
- **Shifting Power Balance**
- **Resource Security**
- **Distribution of Wealth**
- **Weapons Proliferation**

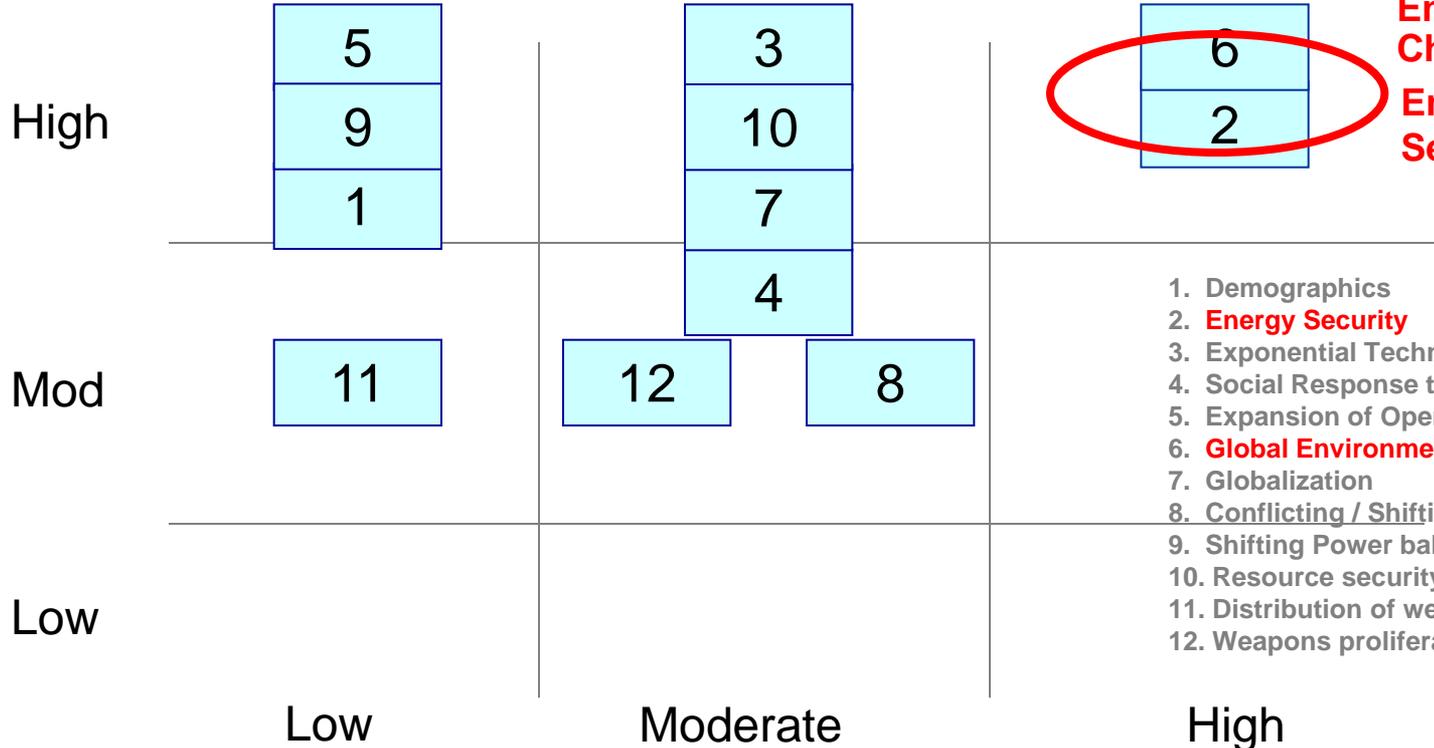
3. Determine Uncertainties and their Polarities

- Impact of age & demographics on military composition – **Older vs. younger through immigration**
- Energy Security – **Sustainable vs. unsustainable**
- Exponential Technology Growth – **Set the pace vs. fall behind**
- Human/Social response to technology – **Reject technology vs. embrace technology**
- Expansion of operating environments – **defensive capability vs. exploitation**
- Global Environmental Change – **crisis reaction vs. proactive action**
- Globalization – **acceleration vs. deceleration**
- Conflicting / Shifting Identities – **global community vs. fragmentation**
- Shifting Power Balance – **cooperative: less friction vs. competitive: more friction**
- Resource Security – **sustainable supply vs. unsustainable supply**
- Distribution of Wealth – **uneven vs. even**
- Weapons Proliferation – **disarmament vs. proliferation**

4. Impact and Uncertainty Analysis



Impact



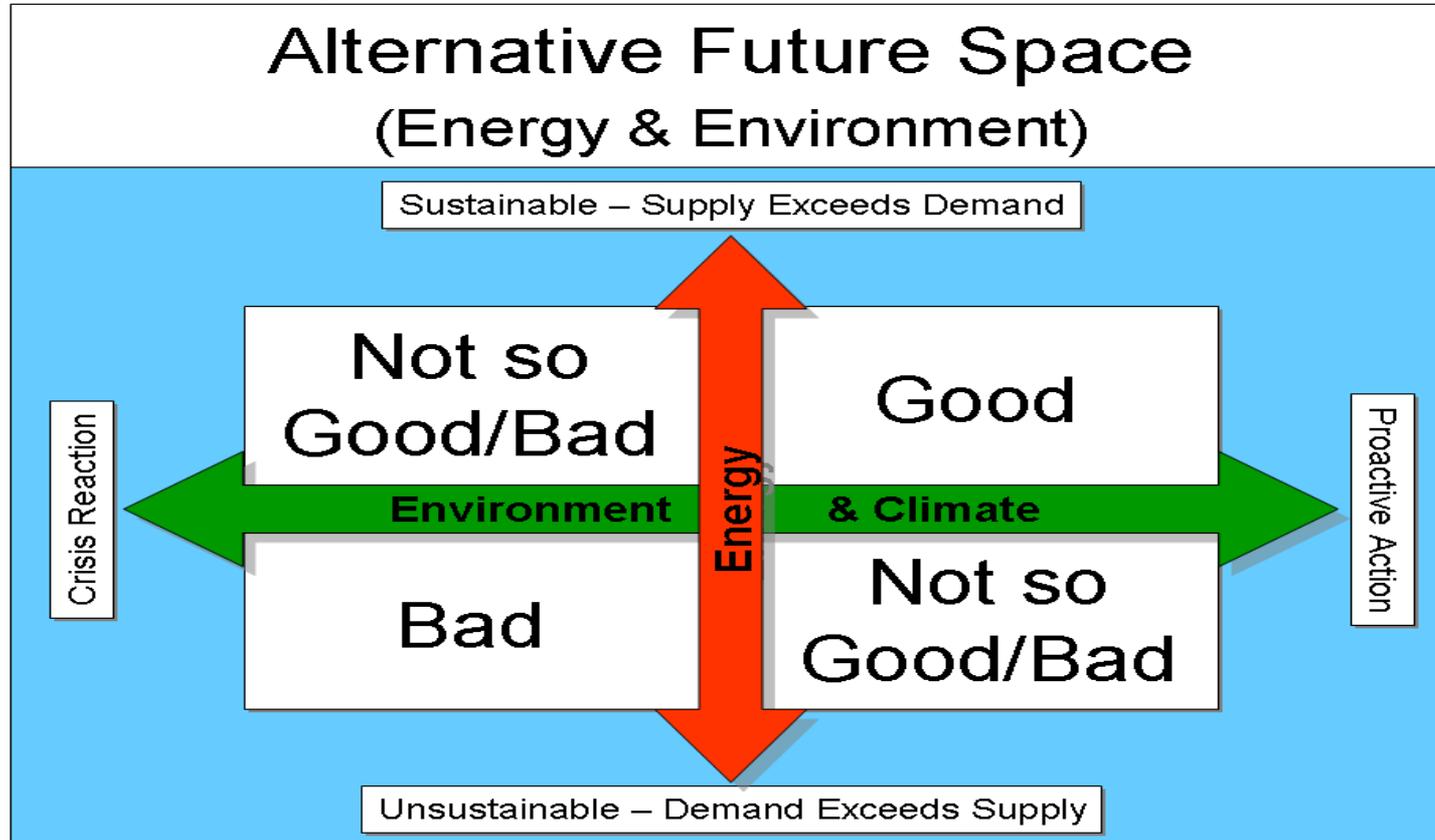
Environmental Change
Energy Security

1. Demographics
2. **Energy Security**
3. Exponential Technology Growth
4. Social Response to Technology
5. Expansion of Operating Environs
6. **Global Environmental Change**
7. Globalization
8. **Conflicting / Shifting Identities**
9. Shifting Power balance
10. Resource security
11. Distribution of wealth
12. Weapons proliferation

Uncertainty

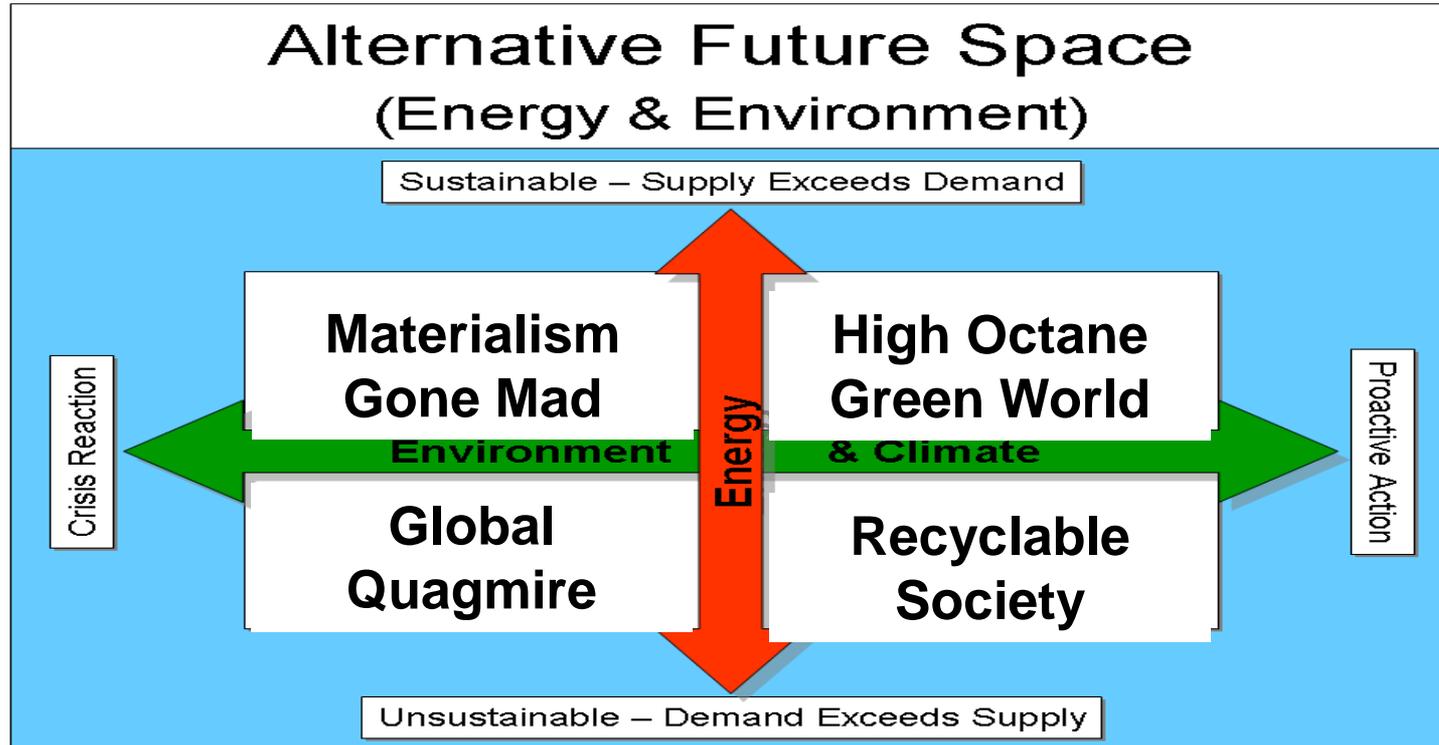
Conceive Methodology

■ Step 5: Develop Alternate Future Frameworks



Conceive Methodology

■ Step 6: Write Alternate Futures

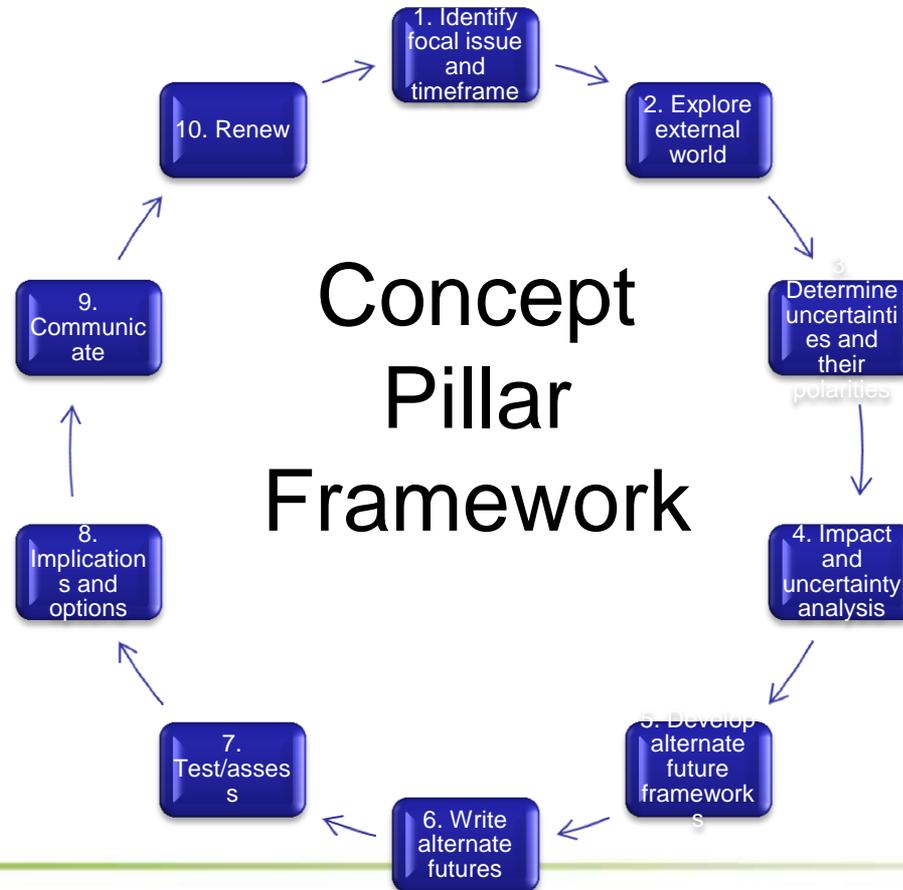


6. Write Alternate Futures

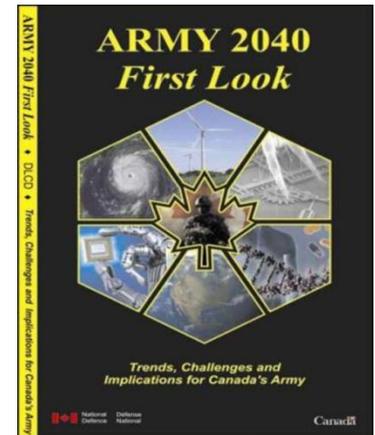
Assumptions	High-Octane, Green	Global Quagmire	Materialism Gone MAD	Recyclable Society
Main Goal	Prosperity	Survival	Material Gain	Survival
Chief Means	Cooperation	Self-Help	Self-Help	Cooperation
Attitudes	When world prosper – I prosper.	World a jungle – look out for No. 1 – or die.	World is a producer & consumer. I want more.	We sink or swim together.
Concept of Self-Interest	Broad	Narrow	Narrow	Broad
Rough Analogies	Concert of Europe, Early Post WWI & II	Late Pre WW I & II, Middle East 56, 67, 73	Late Roman Empire, Pre & Post 9/11	Pre-Westphalian System

Futures Development Methodology

- Conceive the Future Army a 10 step foresight process.



Describes output of steps 1-6

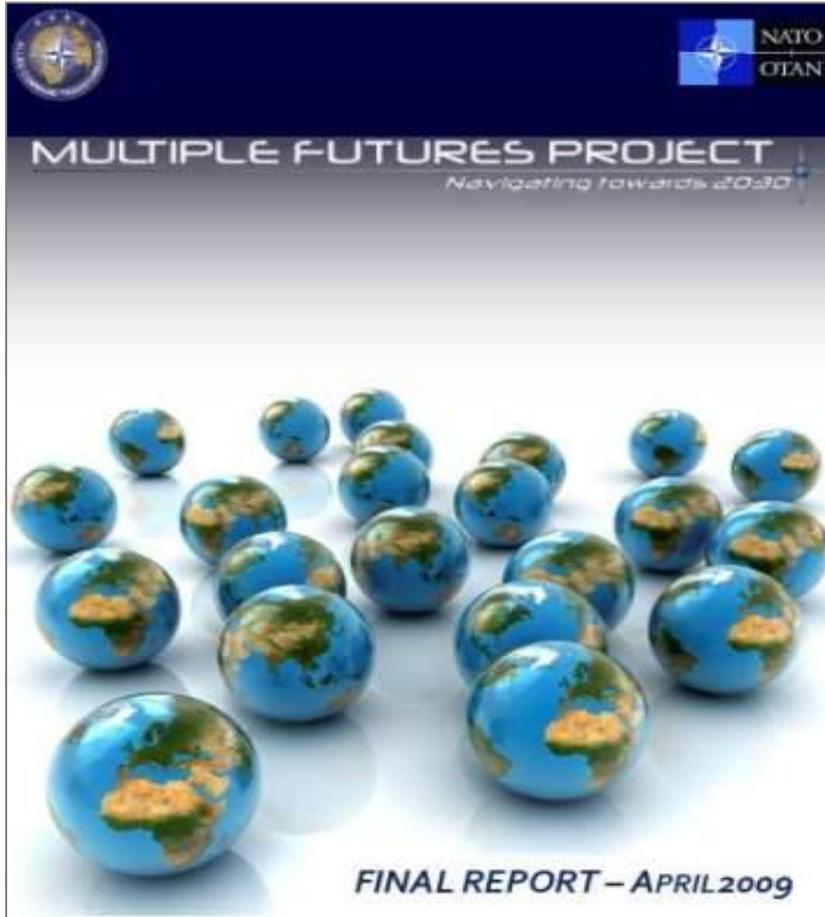




Why Alternative Futures?



Alternative
futures
speculate
on what
might
happen in
the future



Future 1 – Dark Side of Exclusivity

Future 2 – Deceptive Stability

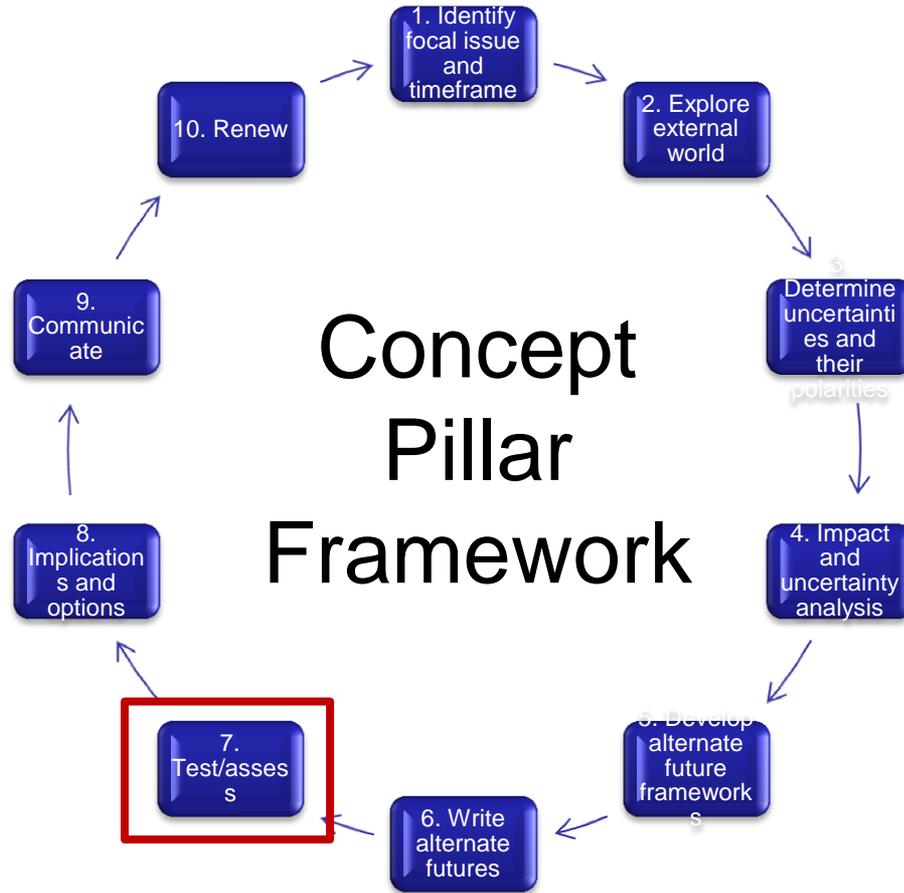
Future 3 – Clash of Modernities

Future 4 – New Power Politics

Strategic Surprises – The Challenge of Disruption

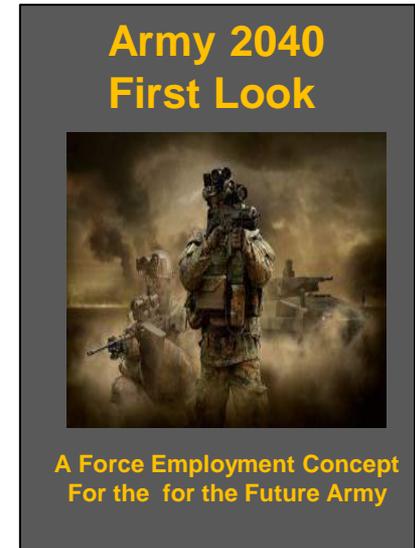
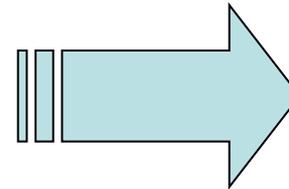
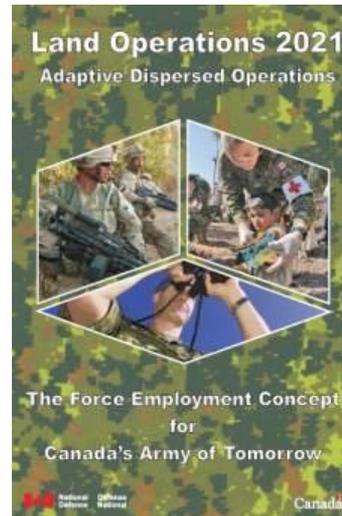
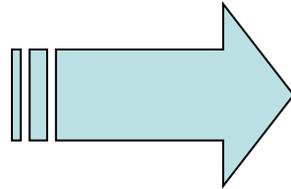
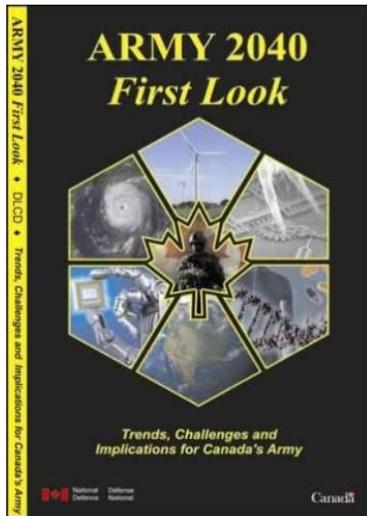


An alternative
future should
not be
confused with
a prediction
of the future

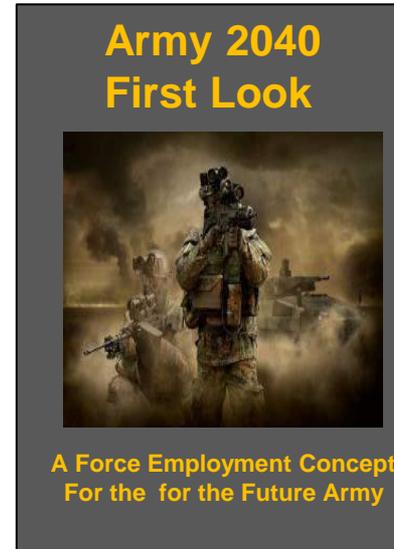
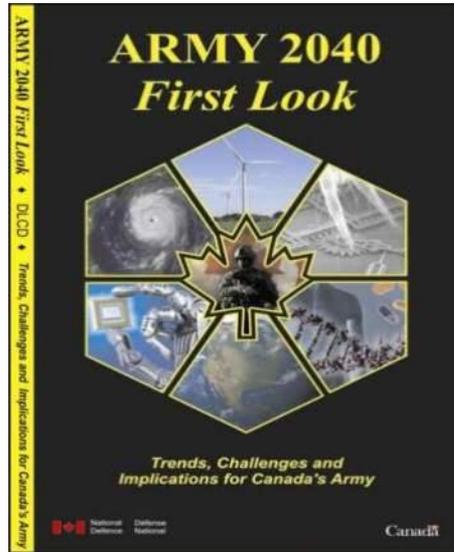


8. Implications & Options

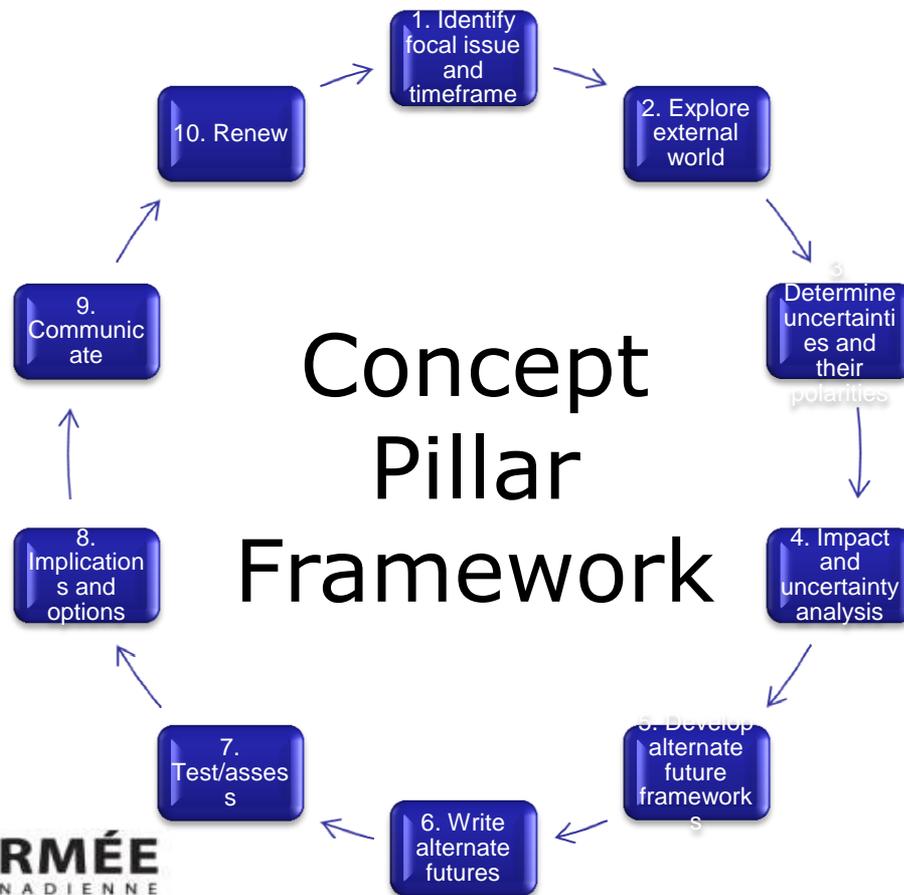
- Capabilities within each alternative future will be measured against Land Operations 2021 in order to highlight gaps requiring further evaluation and development. Leading to a new force employment concept.



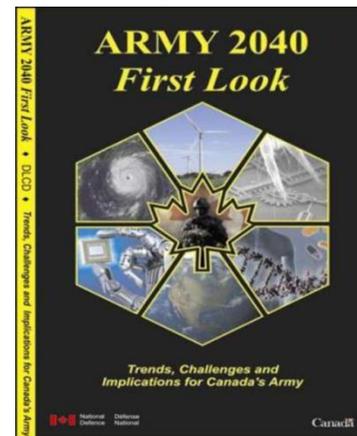
9. Communicate



Futures Development Methodology



Describes output of steps 1-6



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Way Forward and Lessons



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Army 2040 Seminar Wargame Activities

Seminar Wargames were conducted:

- Materialism Gone Mad – 26-30 Nov 12
- High Octane Green World – 10-14 Jun 13
- Global Quagmire – 25-19 Nov 13
- Recyclable Society – 3-7 Mar 14
- Supporting Efforts
 - Queen's University Engagement – 3, 10 Feb 14
 - Tactical Leaders Seminar Wargame (Gagetown) – 25-28 Mar 14
 - Young and Seasoned - ??

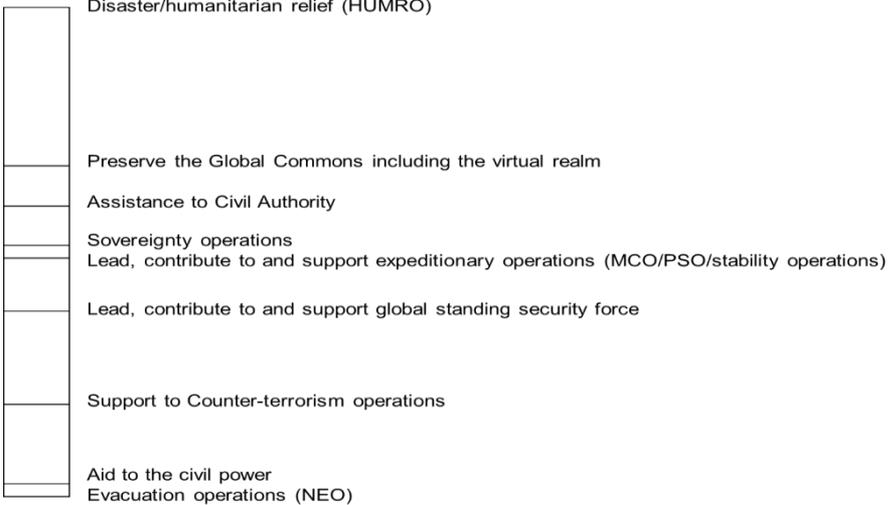


Preliminary Results - Example

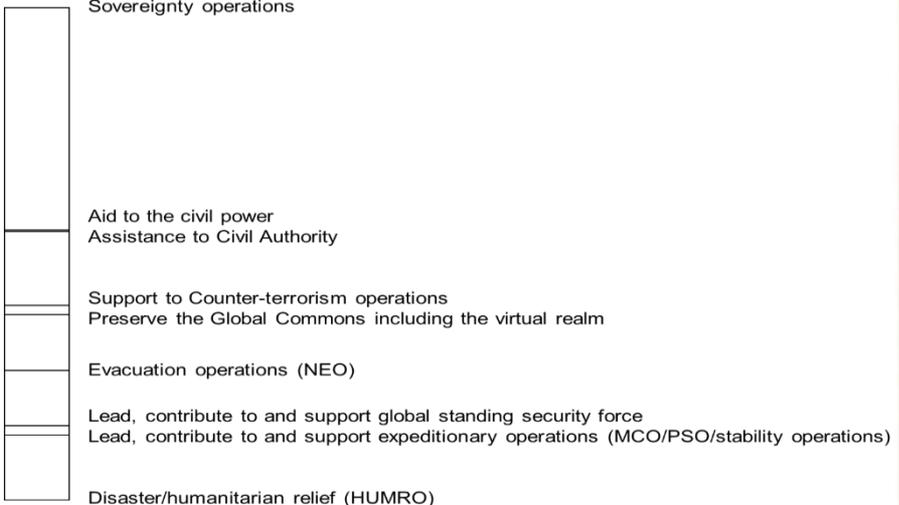
DISCLAIMER
 The results presented are preliminary only and full analysis has not been completed. Action taken to change or modify ongoing Build and Manage issues is premature and not recommended

» Missions and Tasks – High Octane Green World

Likelihood of Occurring in HOGW



Impact to Canada if Army Unable to Respond



Use of DRDC statistical tool (MARCUS) to analyze ratings of participants. Gap between missions and tasks indicates the preference of the participants. Large Gap indicates greater preference whereas a small gap indicates little preference or a tie.

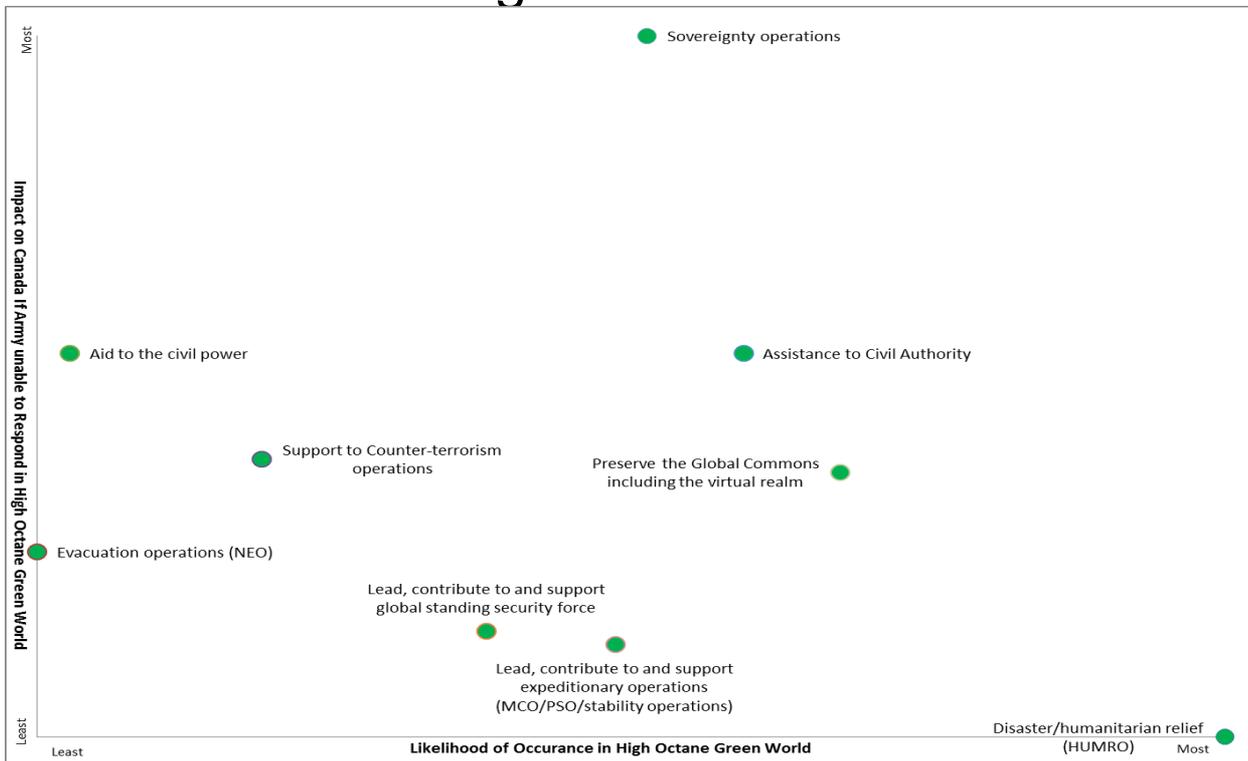


Preliminary Results - Example

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» Missions and Tasks – High Octane Green World



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Way Ahead

» Analysis

Missions and Tasks

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MGM

- Domestic Disaster relief Humanitarian assistance (manmade/natural)
- Counter/Respond to Cyber-attack
- Search and Rescue
- Coop with CSEC, CSIS, RCMP, PSC
- Expeditionary Ops Humanitarian Assistance/Disaster Relief
- Personal safety of Cdns abroad (shared multi-national resp (NEO))
- Counter/Respond to Terrorism
- COIN
- Capacity building (Nation Building/Security Force Assistance)
- Peace Support Ops
- Counter/Respond to Organized Crime
- Territorial Defence of Canada
- Respond to Domestic internal conflicts
- Counter/Respond to Weapons of Mass Destruction
- Major Combat Operations

HOGW

- Disaster/humanitarian relief (HUMRO)
- Preserve the Global Commons including the virtual realm
- Assistance to Civil Authority
- Sovereignty operations
- Lead, contribute to and support expeditionary operations (MCO/PSO/stability operations)
- Lead, contribute to and support global standing security force
- Support to Counter-terrorism operations
- Aid to the civil power
- Evacuation operations (NEO)

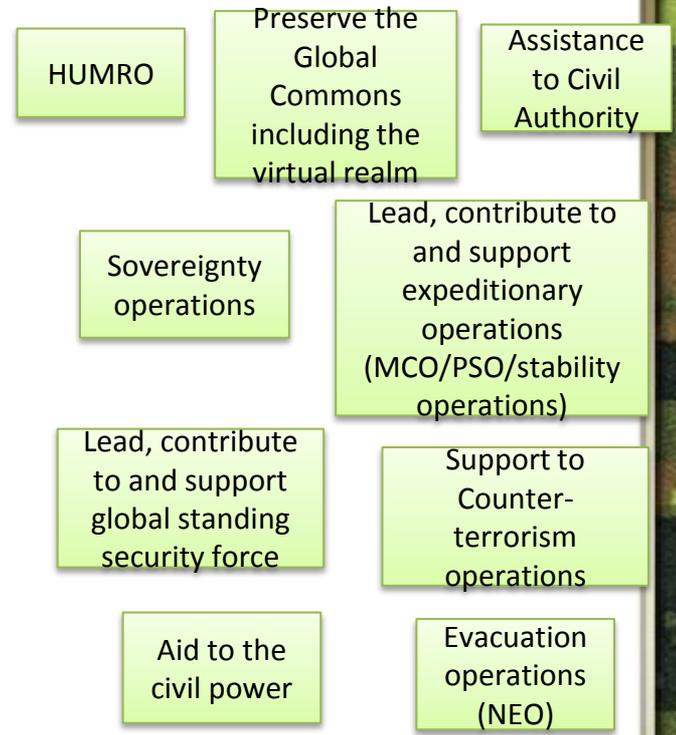
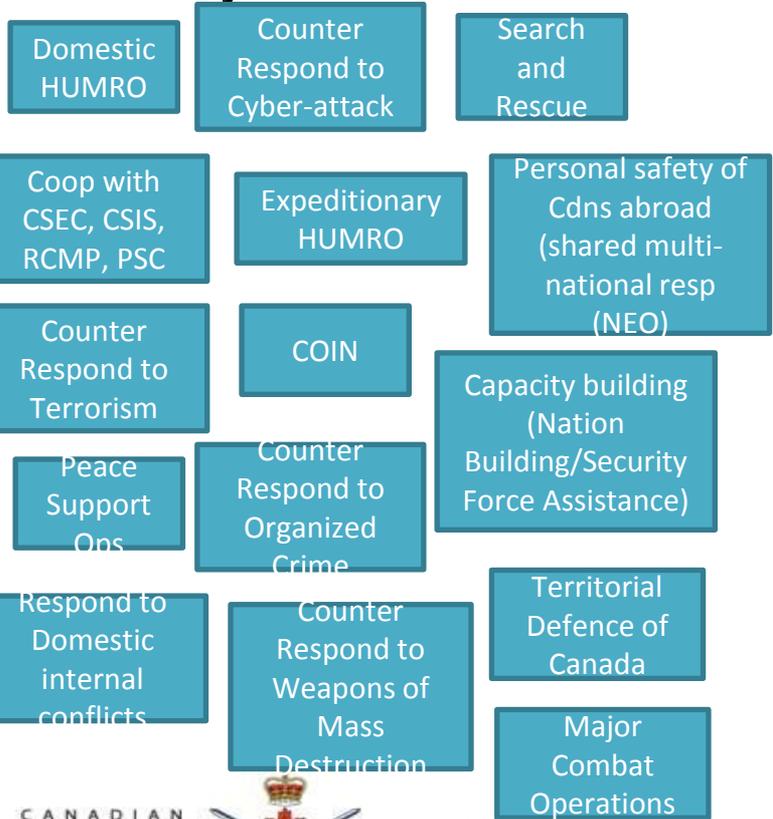


Way Ahead

>> Analysis

DISCLAIMER

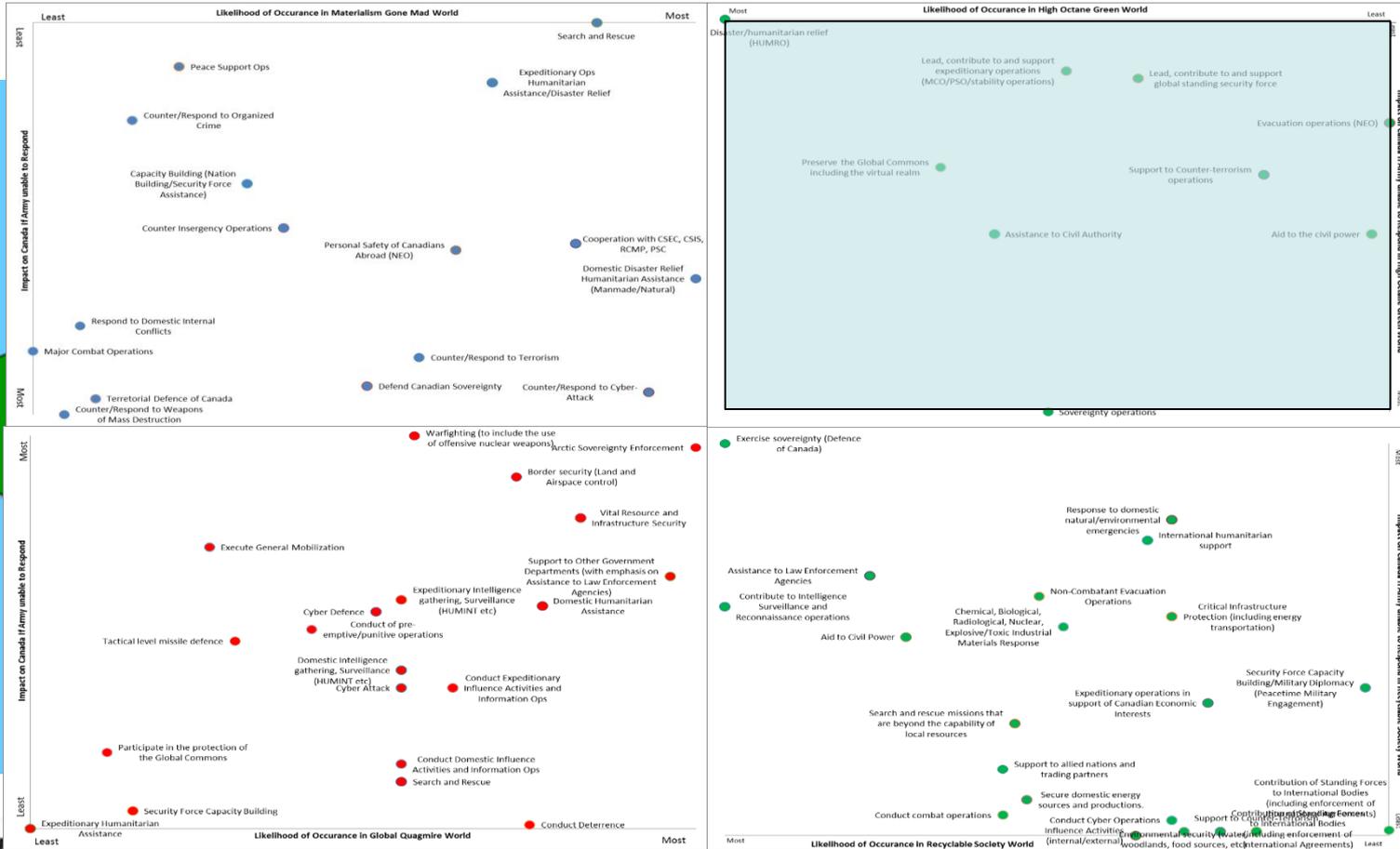
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Way Ahead

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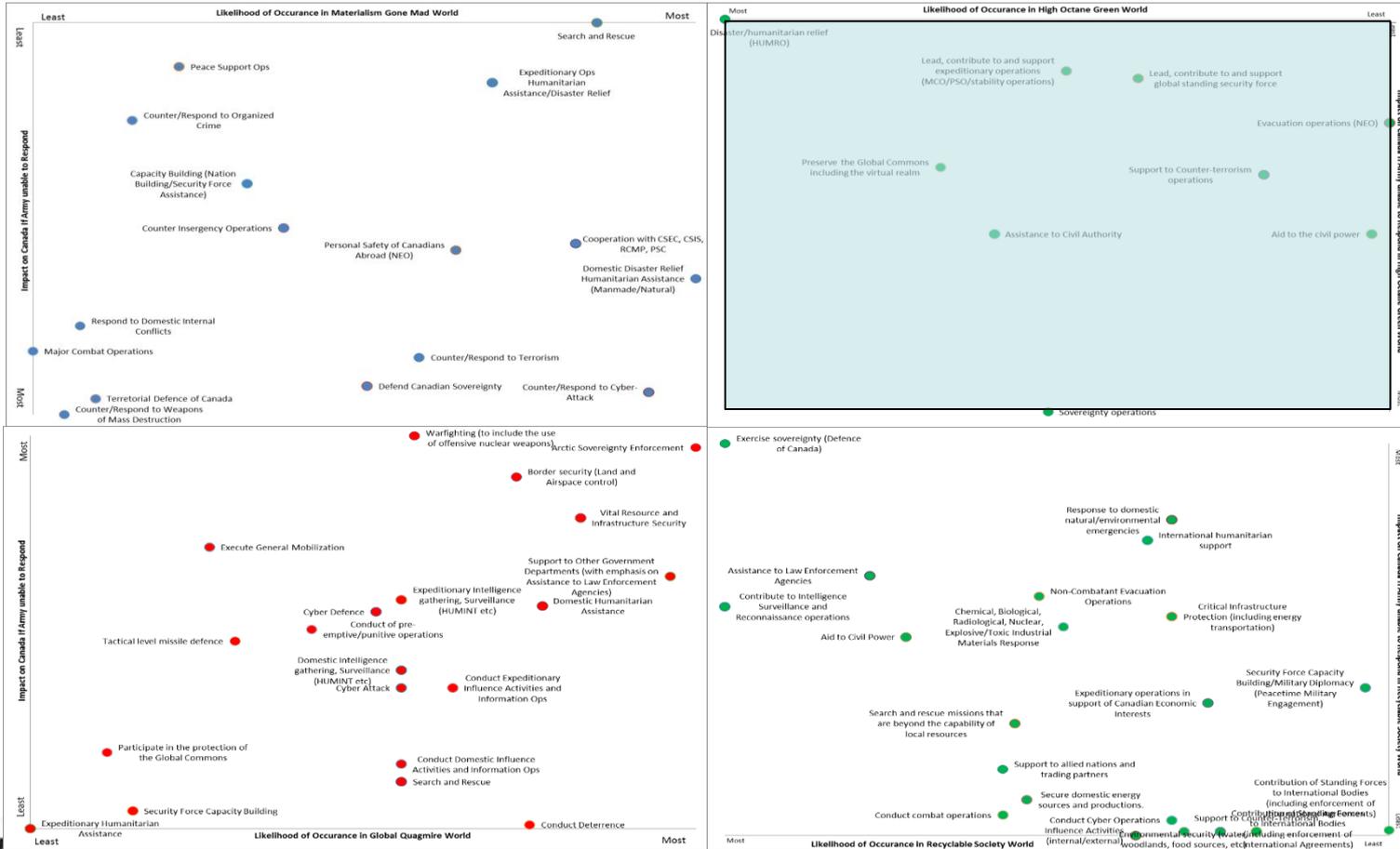
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Way Ahead

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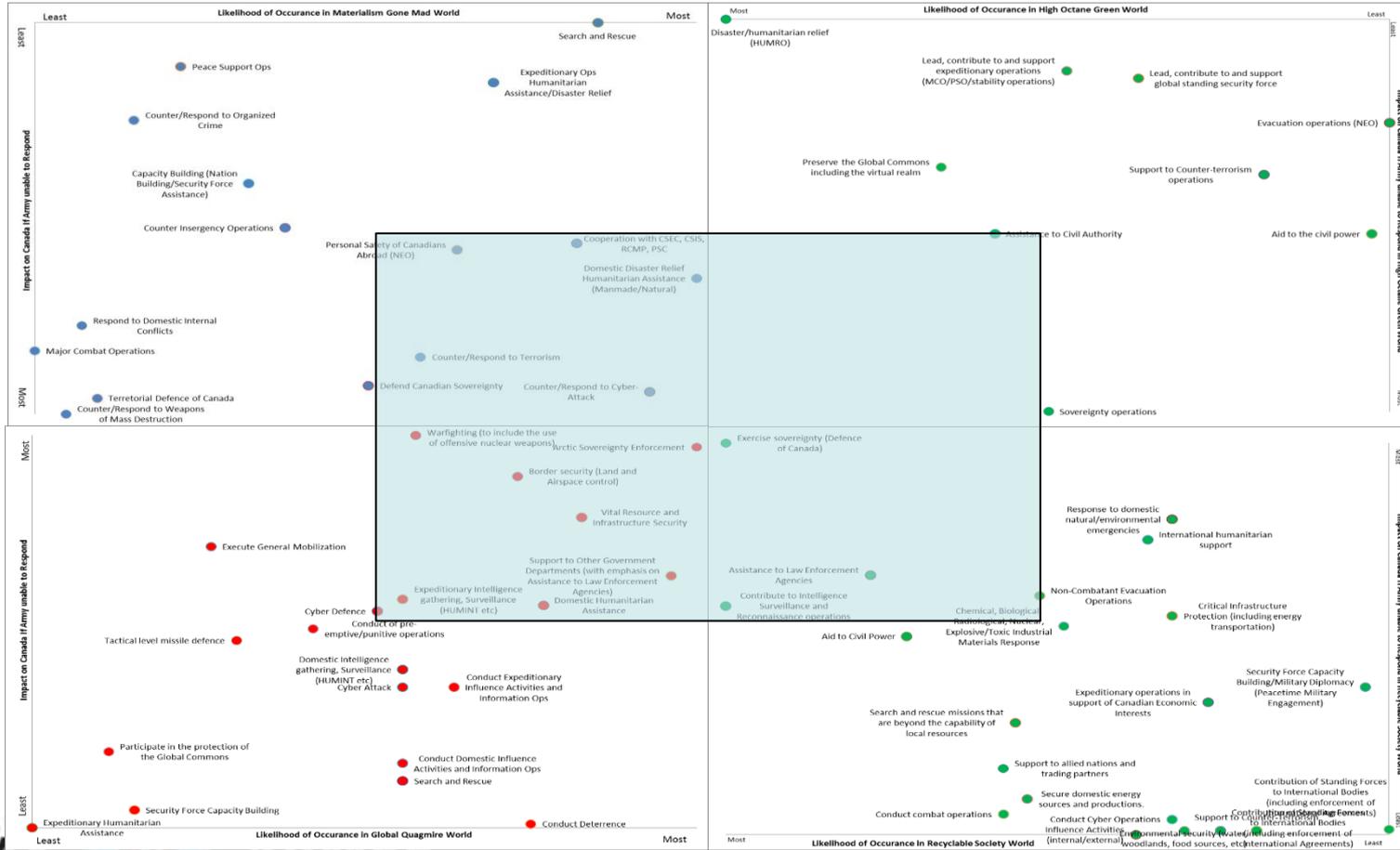
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Way Ahead

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Army Futures Way Ahead

» Further Investigation (Deep Dives)

- ✦ Cyber
- ✦ Arctic
- ✦ CBRNe
- ✦ Human Dimension/Doman
 - Ethics/Culture/understanding to prevent
 - Effectiveness and Resilience (incl augmentation/enhancement)
- ✦ Robotics/Autonomous/Automated systems.

» Products:

- ✦ *Army 2040 First Look (Volume 1 – Method, Trends, Scenarios):*
 - Formatted by Oct 2014 (e-version)
 - Hard copies by Dec 2014
- ✦ *Army 2040 First Look (Volume 2 – Implications):*
 - Formatted by APS 2015 (e-version)
 - Hard copies by Fall 2015



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Lesson/Observations

- » Don't under or over estimate the resources required to conduct a foresight method.
- » Invest up front in getting participant to 'live' in the scenario.
- » The devil is in the detail when it comes to responses to the questions.

- » Benefit of a detailed and tailored future operating environment for each scenario.
- » Benefit of more diverse key drivers
- » Skeptics defeated and converts gained by results.



Questions/Discussion

