



Lesson 3.5b

Analysis of the Operating  
Environment (AOE)

Operating Environment Evaluation;  
Analysis of the Physical Terrain (PT)



# Content

- APIR and APII
- Mapping
- Terrain features and key facilities
- LLOCs, WLOCs, relief and vegetation



# Learning Outcomes

- Explain Area of Peacekeeping Intelligence Responsibility (APIR)
- Explain Area of Peacekeeping Intelligence Interest (APII)
- Using a map conduct an analysis of PT, including identifying terrain features and key facilities
- Identify key LLOCs, WLOCs, relief and vegetation



# Relevance

- Movement is constrained and restrained by physical terrain (PT)
- Physical terrain is affected by climate and weather
- Human, information domains exist in physical terrain
- COAs can exploit the opportunities that Physical Terrain provides
- Terrain affects the COAs available to actors that pose as a threat to the UN mandate



## Activity

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### Importance of Physical Terrain in military operations

#### Instructions:

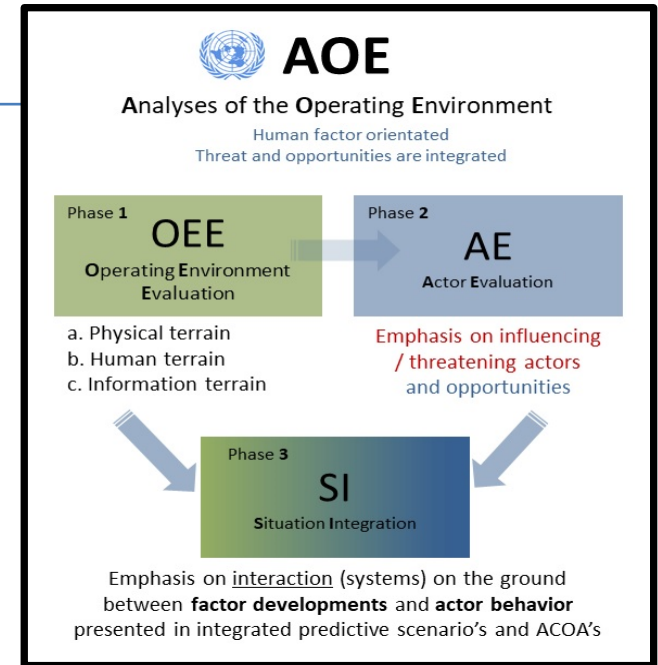
- Discuss what is meant by the "Physical Terrain" (PT)
- Discuss how the Physical Terrain is affected by climate and weather and its impact on the conduct of military operations.
- Illustrate by using examples from military history or your own experiences where a good analysis of the Physical Terrain resulted in the success of a mission and/or where a poor analysis of the Physical Terrain seriously hampered or even prevented the accomplishment of a mission

**Approximate Time:** 15-20 minutes



# Where is Analysis of Physical Terrain in the AOE process?

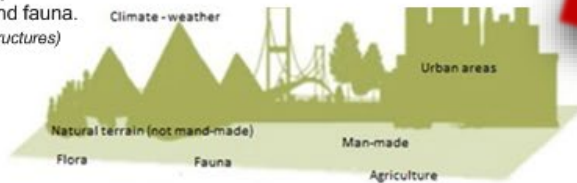
- Analysis and conclusions of PT, plus conclusions on Climate & Weather
- Analysis and conclusions on Human Terrain (HT)
- Analysis and conclusions on Information Terrain (IT)



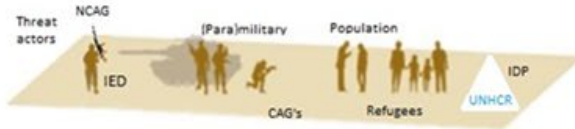


# Physical Terrain is one of 3 interconnected layers in OEE

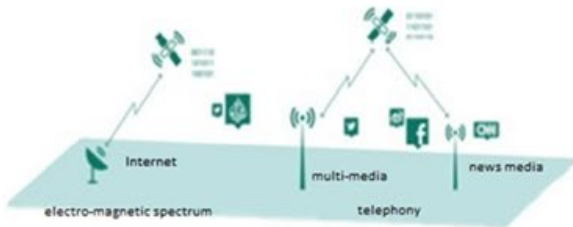
**Physical Terrain (FT)**  
incl. Climate, weather, flora and fauna.  
(Natural and man-made – infrastructures)



**Human Terrain (HT)**  
(Actors and groups)



**Information Terrain (IT)**  
(Factors and relations)



**UN Operating Environment (OE)**  
(post) conflict ECO-system



**AOE**

Analyses of the Operating Environment

Human factor orientated  
Threat and opportunities are integrated

Phase 1  
**OEE**  
Operating Environment  
Evaluation  
a. Physical terrain  
b. Human terrain  
c. Information terrain

Phase 2  
**AE**  
Actor Evaluation

Emphasis on influencing  
/ threatening actors  
and opportunities

Phase 3  
**SI**  
Situation Integration

Emphasis on interactions (systems) on the ground  
between **factor developments** and **actor behavior**  
presented in integrated narrative scenario's and ACOA's

## Three 'terrains' are interrelated



# Physical Terrain

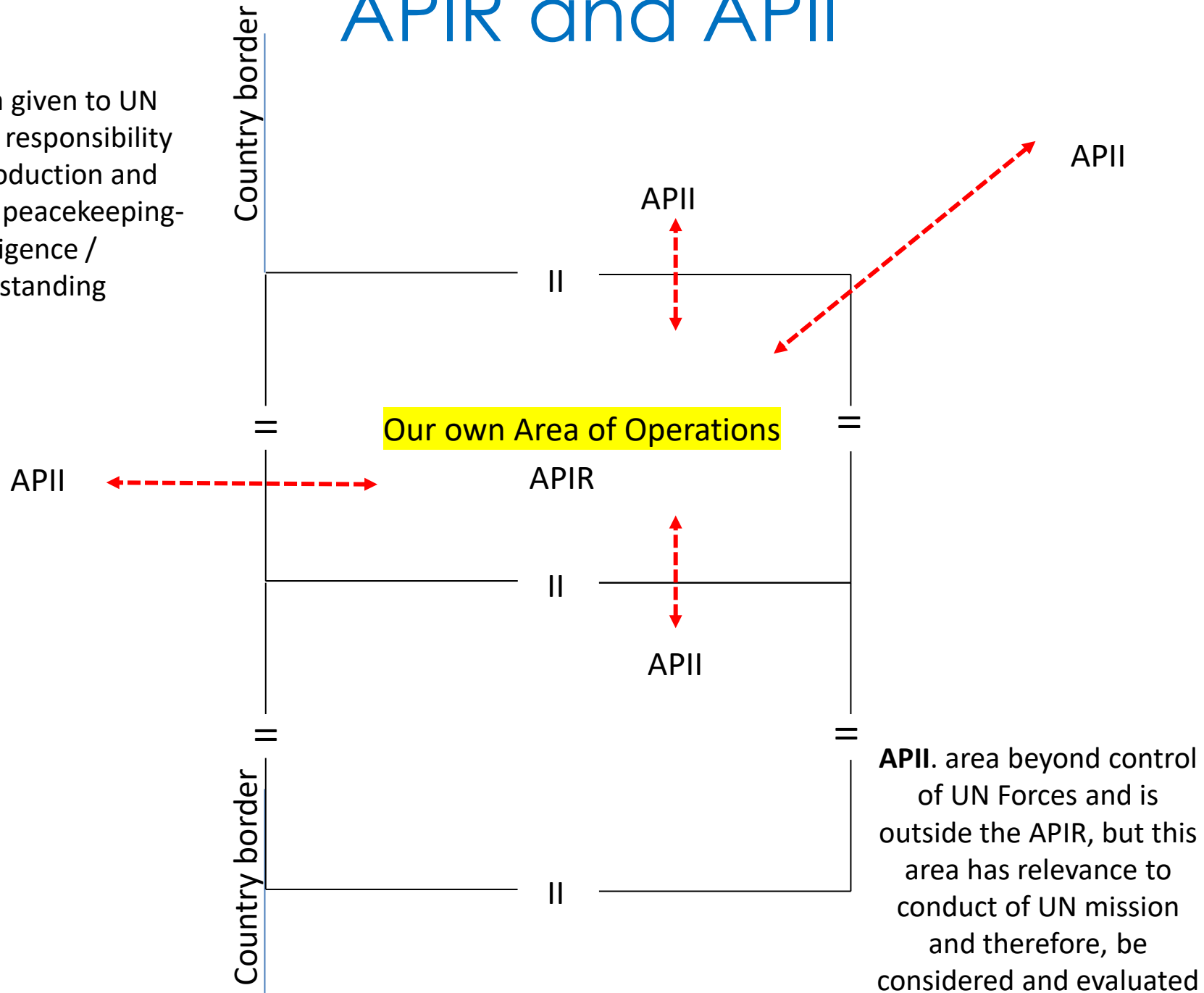
- **Living space** for actors:
  - Live on land and off
  - Influenced by where, when they can live move and work
  - How they use it
- **Focus** on Area of Peacekeeping-Intelligence Responsibility (APIR)
- And wider Area of Peacekeeping-Intelligence Interest (APII)
- Helps visualization of OE





**APIR.** area given to UN Forces; has responsibility for the production and provision of peacekeeping-intelligence / understanding

# APIR and APII





## Learning Activity

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How to analyze and evaluate the Physical Terrain (**PT**):

- **Situation:**
  - Use the scenario to identify APIR and APII
- **Task:**
  - Define the Area of Peacekeeping Intelligence Responsibility (APIR) and the Area of Peacekeeping Intelligence Interest (APII)
- **Time:** Approx. 10 min -group work and discussion



# Terrain Features

- Physical Terrain consists of two distinct terrain features:
  - Natural
  - Manmade



## Learning Activity

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- **Situation:**

- Use the scenario to identify terrain features

- **Task:**

Use mapping and other assets to:

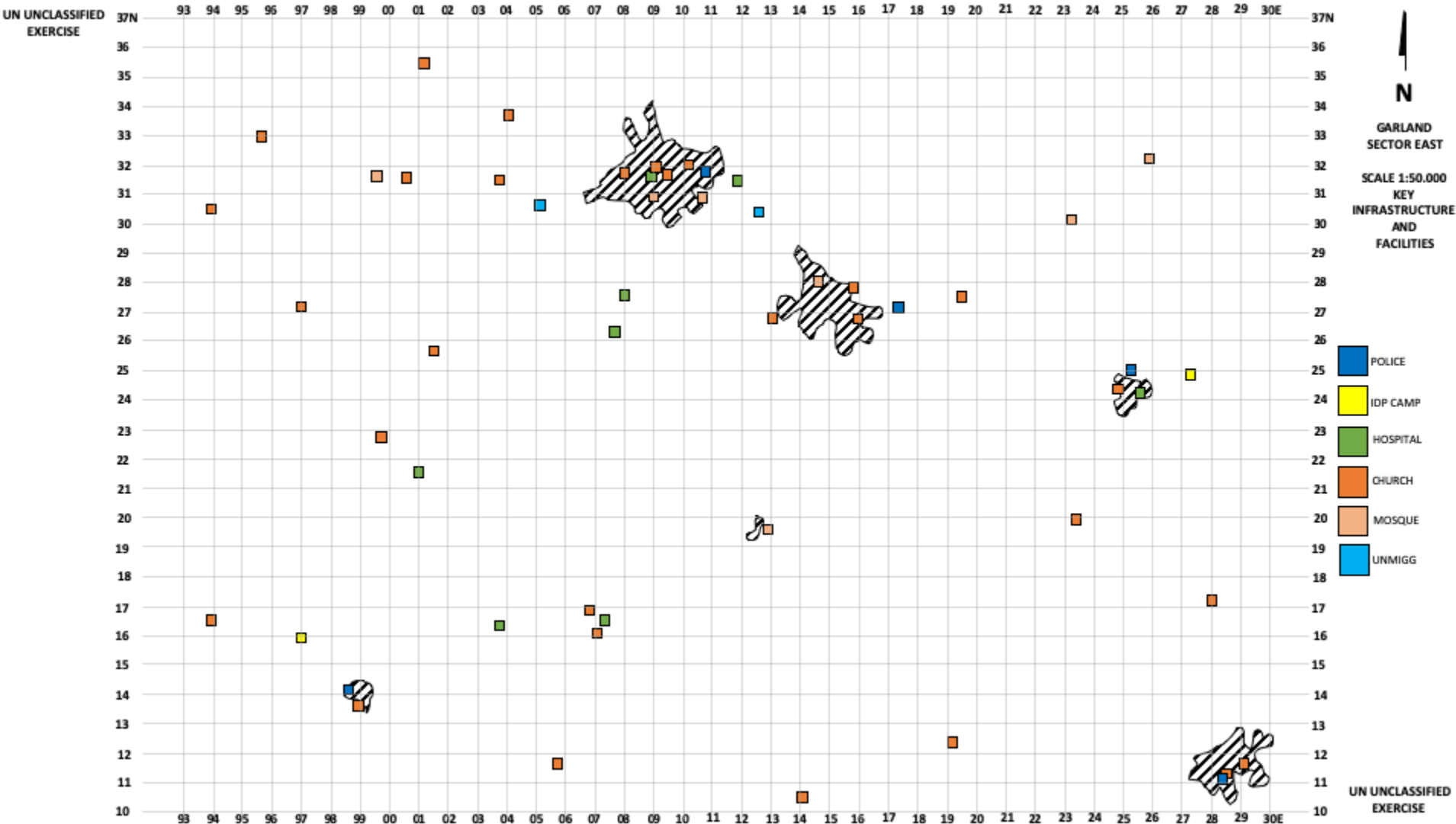
- Identify physical terrain features (Natural and man-made)
- Mark on map

**Key Question: How will this affect the actions of the human terrain?**

- **Approx. Time:** 10 Min



# Example of a map showing key facilities





# Learning Activity

## Example of 3CF analysis of key facilities in Sector EAST

| FACTOR                   | DEDUCTION   | OUTPUT  |
|--------------------------|---|---|
| Physical terrain:        | 1.1 LL EAST – WEST                                      | 1.1 IR  |
| 1. LLOC in SCT EAST      | 1.1.1 Main LL is critical for both UN / UNHCR / LP / AG | - What is the condition of the road?                      |
| 2. Entrances to SCT EAST | 2.1 Main entrance from ERIYA to GARIYA                  | - What is the type of surface                             |
| 3. Airfields in SCT EAST | 2.1.1 LLOC through mountains                            | 2.1 IR  |
| 4. Relief in SCT EAST    | 2.1.2 LLOC go's through tunnel                          | - What are the characteristics of the tunnel surroundings |
| 5. Bridges in SCT EAST   | 2.1.3 Tunnel is key entrance                            | 5.1 IR  |
|                          | 3.1 1x Airfield in SCT EAST                             | - Condition of the bridges                                |
|                          | 4.1 Strong relief EAST of SCT EAST                      | - Classification of the bridges                           |
|                          | 5.1 Bridges in SCT EAST                                 | RFI   |
|                          | 5.1.1 3x bridges are critical for entrance from ERIYA   |   |



# Learning Activity

## Key Facilities

- **Situation:**
  - Use the scenario to identify all key facilities in your AIR
- **Task:**
  - Study your sector map and identify key facilities
  - Mark on Map with a clear legend
  - Insert factors into the 3-column format (3CF) and make deductions
  - Draw up a list of IRs
- **Time:** Approx. 20 minutes (group work and discussion)

| FACTOR                    | DEDUCTION   | OUTPUT |
|---------------------------|---|--------|
| Bridges                   | Are bridge classifications sufficient for UN convoys? | RFI    |
| Dam at X                  |   |        |
| Electric power plant at Y |   |        |



# Types of Terrain Analysis and Overlays to Complete





# Use of mapping

- Accurate up-to-date mapping is essential
- Digital and analogue
- Map scale: 1:50,000 or 1:100,000 for OE
- Details and clarity important
- Close-up imagery for conducting small-unit operations
- Use separate overlays or digital overlay layers
  - Don't reproduce map, highlight objects, elements for making conclusions
- One overlay per specific topic/factor to focus information and to combine single overlays as needed



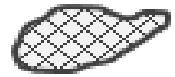
# Overlay Symbols



Key Terrain



Restricted Terrain



Severely Restricted Terrain



Built/up Areas



Rivers & Lakes



Land Lines of Communications (**LLC**)



Rail road



No go waterway



Slow go waterway\*



Bridge



No go waterway\*\*

\* **Outside** Rainy season

\*\* Already in Slow- or No go area



# Terrain Overlays

The different Terrain Overlays that allow us to conduct the analysis of military aspects of the terrain are:

- Land Lines of Communication (LLOC)
- Water Lines of Communication (WLOC)
- Relief
- Vegetation



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- SSR ELEPHANT
- SSR JAGUAR
- SSR GIRAFFE
- MSR ANTELOPE
- GUMI MOUNTAINS
- NIMBURU MOUNTAINS
- Central prov.
- North-West prov.
- West prov.
- GARIYA
- MSRs and SSRs designated and named after routes have been evaluated**

## MSRs and SSRs designated and named after routes have been evaluated





# Water Lines of Communications(WLOCs)



Key Terrain



Restricted Terrain



Severely Restricted Terrain



Built/up Areas



Rivers & Lakes



Land Lines of Communications (LLC)



Rail road



No go waterway



Slow go waterway\*



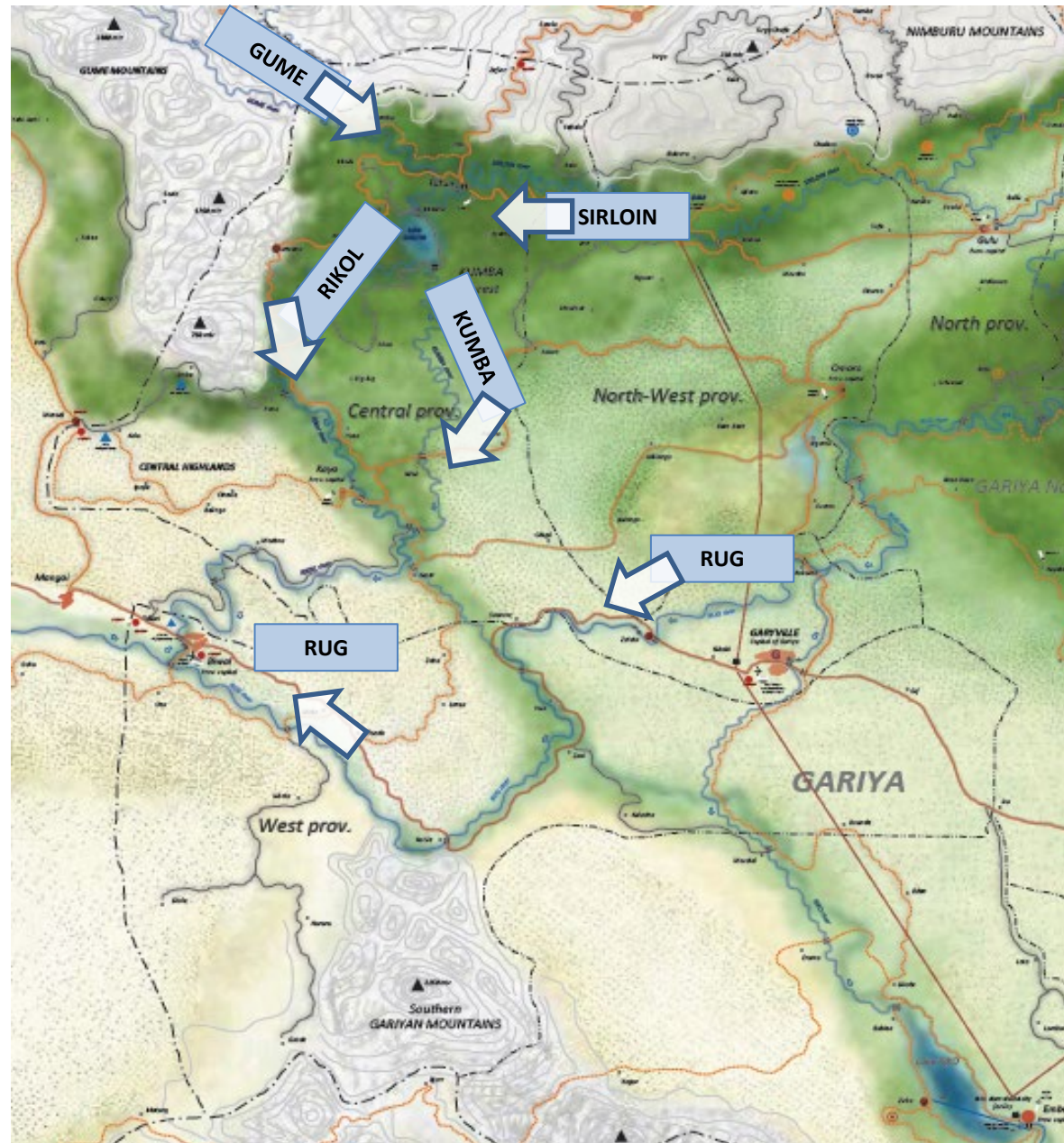
Bridge



No go waterway\*\*

\* **Outside** Rainy season

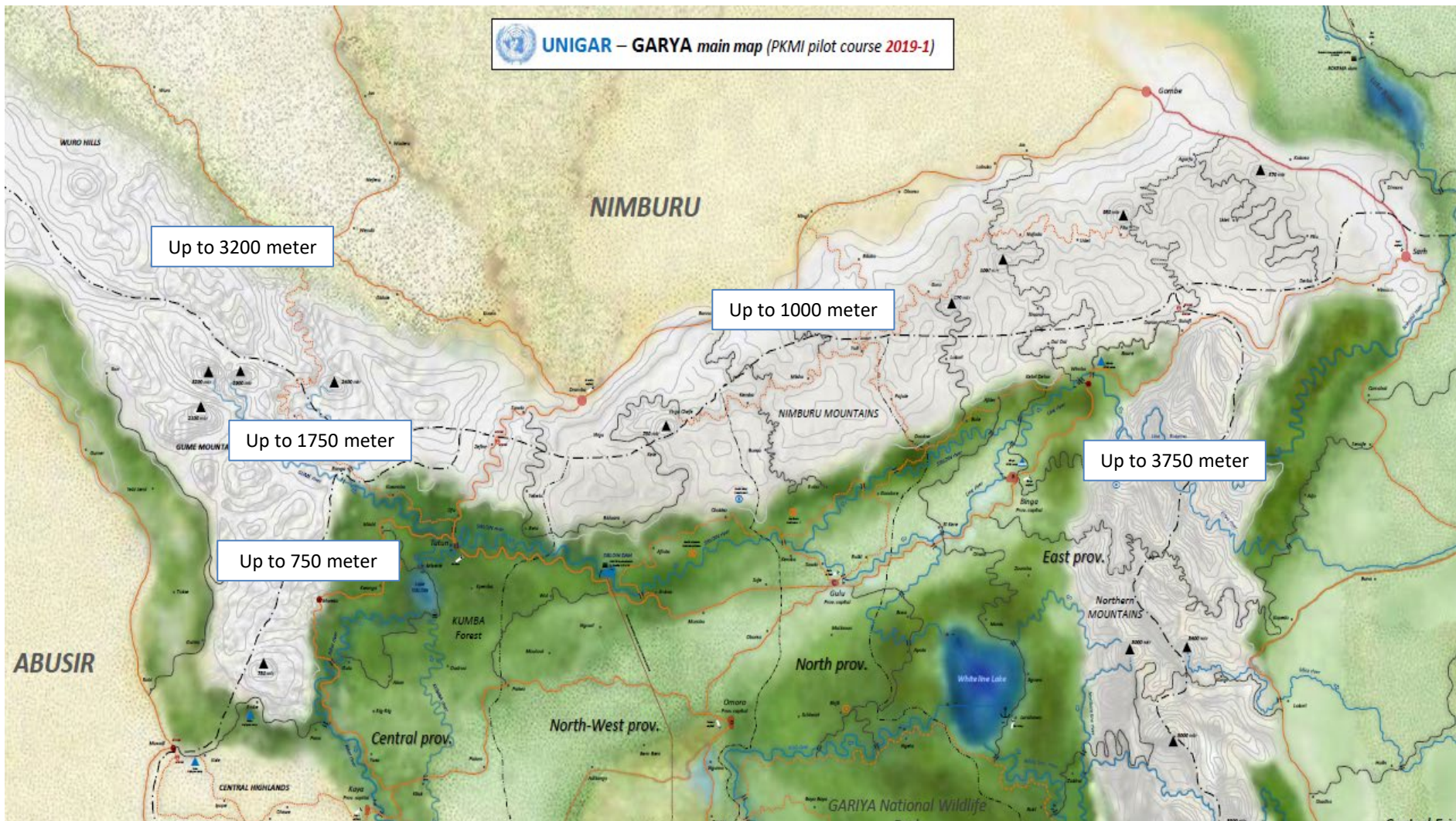
\*\* Already in Slow- or No go area







# Relief







# Vegetation

## LEGEND



Lake



Jungle / Rainforest / woodlands



Grassland type Savannah



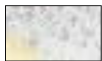
Savannah




Desert

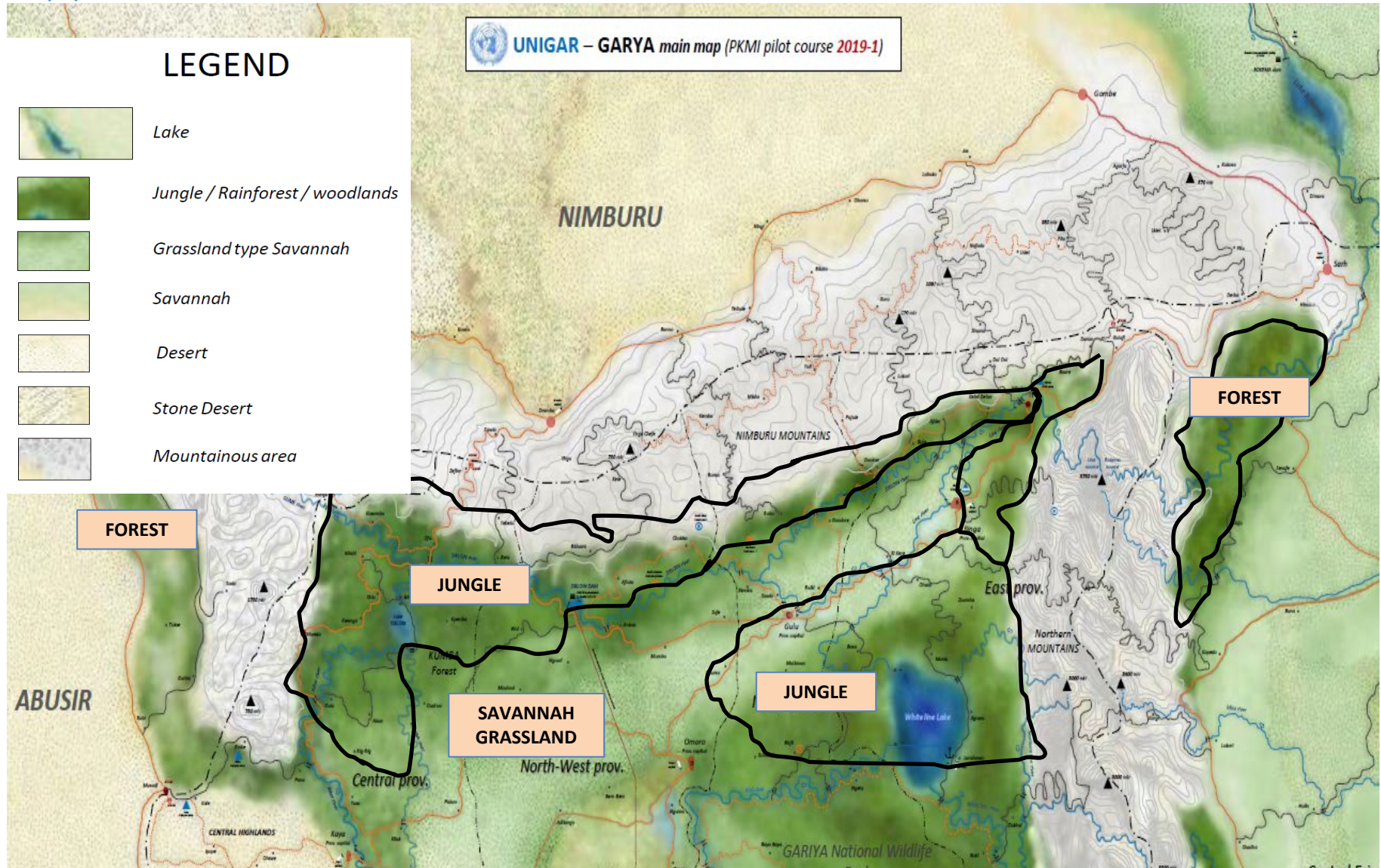


Stone Desert



Mountainous area

 **UNIGAR – GARYA main map (PKMI pilot course 2019-1)**





# Learning Activity

- **Situation:**
  - Use the scenario identify LLOCs, WLOCs, Relief, Vegetation in the AIR
- **Task:**
  - Study sector map; identify key LLOCs, WLOCs, Relief and Vegetation
  - Mark on Map with a clear legend
  - Insert factors into the 3-column format (3CF) and make deductions
  - Draw up a list of Information Requirements
- **Time:** 30 minutes (group and discussion)

| FACTOR                      | DEDUCTION  | OUTPUT  |
|-----------------------------|--|---|
| <b>MSR from Town A to B</b> | <b>Threat Actor A needs to control for supplies. May challenge UN FOM<br/>UN need to control MSR.<br/>Local population requires security in this area.</b> | <b>RFI. Where are vulnerable areas for UN convoys</b> |





# Take Away

- Understand Area of Peacekeeping Intelligence Responsibility (APIR) and term Area of Peacekeeping Intelligence Interest (APII)
- Be able to conduct a simple analysis of the PT of an area of operations
- Identify terrain features and key facilities
- Identify key LLOCs, WLOCs, relief and vegetation
- Integrate your analysis into the broader AOE/MPKI products



# Questions