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Creating a Standardized Approach for Satellite-Based Remote Sensing Analysis for Detecting International Humanitarian Law Violations

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Creating a Standardized Approach for Remote Sensing Analysis for Detecting International Humanitarian Law Violations



PRESENTER:
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BACKGROUND

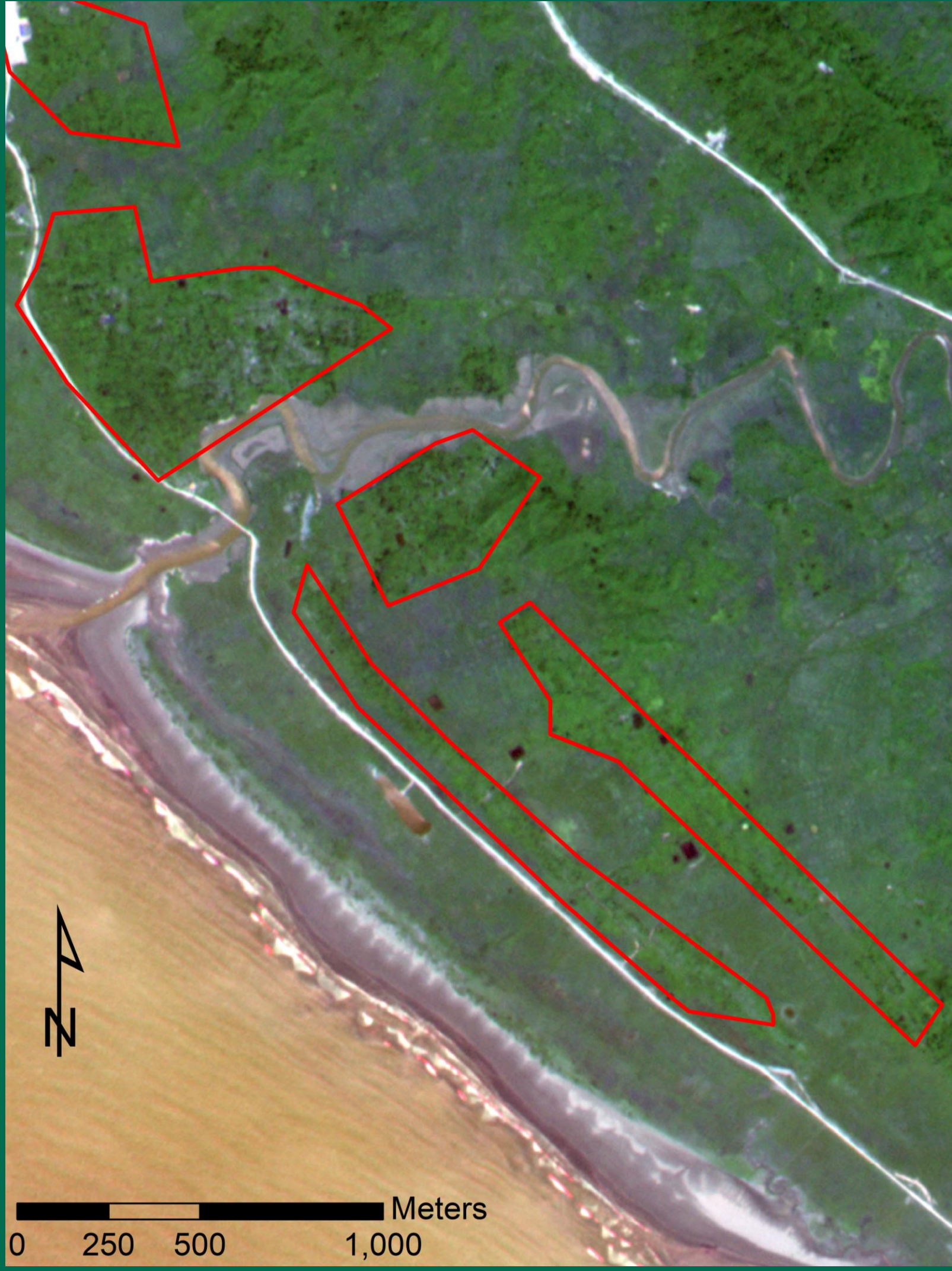
- Satellite-based remote sensing imagery holds much evidentiary potential for detecting breaches in international humanitarian law
- International courts are hesitant to utilize remote sensing data analysis because of a lack of a standardized analysis strategy.¹

METHODS

- Download high spatial resolution satellite visible light imagery
- Use change detection algorithms to automate the discovery of crimes against humanity
- Interpretation of areas with rapid change by trained geospatial intelligence analysts and humanitarian advisors

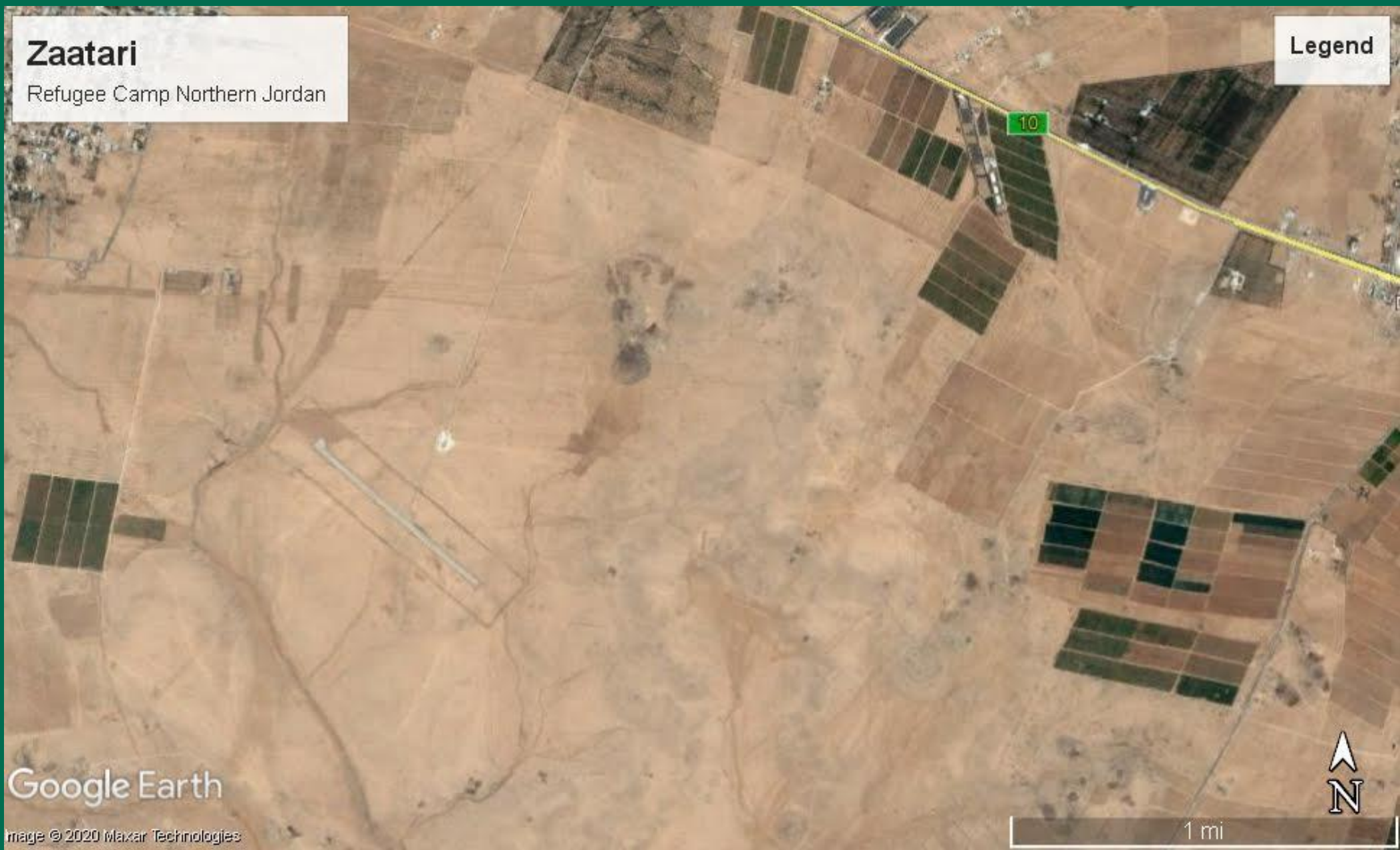


Village, Burma, 2016.



Village, Burma, 2019.

High-resolution satellite imagery containing evidence of bulldozing of civilian settlements to deter refugees from returning home to a Burmese village.



Zaatari, Northern Jordan, 2011.



Zaatari, Northern Jordan, 2014.

Evidence of the formation of a refugee camp in Northern Jordan based on change-analysis analysis between 2011 and 2014.

OBSERVABLE VARIABLES

Craters from bombs
Destruction of civilian dwellings and other protected infrastructure (i.e. humanitarian and religious sites)
Excavations of mass graves
Composition of displaced persons camps

HIGH SPATIAL RESOLUTION SATELLITE IMAGERY SOURCES

- DigitalGlobe’s WorldView-3 (0.31m)
- GeoEye-1 (0.41m)
- QuickBird (0.6m)
- IKONOS (0.8m)
- Planet (varies)
- Google Earth (varies)

RESULTS

- Detection of circumstantial evidence of international humanitarian law breaches in Burma and Jordan found using high-resolution satellite imagery.
- We recommend continued testing with other case studies

REFERENCES

1. Kroker, Patrick. “Emerging Issues Facing the Use of Remote Sensing Evidence for International Criminal Justice.” (Harvard Humanitarian Initiative, 2015).