Evidence-based analysis to understand vulnerabilities and achieve sustainability in a rapidly changing world.
What is environment-security analysis?

How do you define environment-security analysis?

(respond in Zoom chat box so all of us can see)
What is environment-security analysis?

**Frames**
- Vulnerability
- Sustainability
- Resilience
- Capacity Building
  - Coping Capacity
  - Adaptive Capacity

**Domains**
- Facility Security
- Supply Chains Security
- Enterprise Sustainability
- Human Security
  - Food
  - Water
  - Energy
  - Public Health
  - Governance
- Nation-State Security
  - Political Instability
  - Humanitarian Assistance
  - Balance of Power
  - Projection of Force
Attributes of Human and Environmental Systems

**Vulnerability:** Expected harms as the result of cumulative changes and stresses

**Coping Capacity:** Ability to manage within expected levels/variability of stress

**Resilience:** Ability to return to normal conditions after a perturbation

**Adaptive Capacity:** Ability to transform to a new configuration in order to address changing conditions

Characteristics of Analysis

**Decision Context**
- **STRATEGIC**
  - Long-Term
  - Competitive Position
  - Risk/Change Management
  - Partnerships
  - Adaptation/Resilience
- **TACTICAL**
  - Near-Term
  - Place-Based
  - Design/Build/Abandon
  - Engage/Retreat/Hide/Fight

**Spatial Extent**
- **GLOBAL**
  - Comparable
  - Portfolio Analysis
- **LOCAL**
  - Specific
  - Place-Based

**Time Frame**
- **CHRONIC**
  - Typical Conditions
  - Levels/Variability
  - Sensitivity to Thresholds
  - Governance
  - Resilience/Adaptive Cap.
- **EPISODIC**
  - Anomalies
  - Severity/Duration/Extent
  - Storms, Droughts, Floods
  - Impact on Critical Assets
  - Coping Capacity

**TRENDS**
Challenges

❖ Disconnected disciplinary communities
❖ Barriers to entry
  ❖ Data discovery/access in unfamiliar disciplines
  ❖ Intellectual property/terms of use
  ❖ Data harmonization
    ❖ Spatial models
    ❖ Admin unit codes
    ❖ Time-steps
❖ Concept mapping
❖ Diverse analytic approaches
DANTE: Data ANalytics and Tools for Ecosecurity

Open source R packages and vignettes to accelerate environment-security analysis.

https://dante-project.org
https://gitlab.com/dante-sttr

- **Project Landing**
- **untools:**
  - [Homepage](#)
  - [Manual](#)
- **conflictr:**
  - [Homepage](#)
  - [Manual](#)
- **danteSubmit:**
  - [Homepage](#)
  - [Manual](#)

- **commonCodes:**
  - [Homepage](#)
  - [Manual](#)

- **duplicator:**
  - [Homepage](#)
  - [Manual](#)
Water Security Indicator Model (WSIM)

- Monitor and forecast water surpluses and deficits worldwide with lead times of 1-9 months.
- Monthly reports that evaluate impact of water anomalies on people, agriculture, and electricity generation.
- Open source: [https://wsim.isciences.com](https://wsim.isciences.com)

![Water Security Indicator Model (WSIM) Map](image.png)