GEO Earth Observations for Health GEO VIRTUAL SYMPOSIUM 2023 (EO4HEALTH 2023–2024)

Predicting the Multisectoral Impacts of Health Infrastructure Small Working Group

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14 December 2023
Goals – HERC\textsuperscript{2}ULES objectives

• Establish a monitoring and mitigation alert system for heat specifically tailored to vulnerable population
• Model a data-driven methodology to forecast spread, severity and vulnerability
• Create a “Digital Twin” for test and analysis of alternative realities
• Merge authoritative data sources in a geospatially enabled, multi-layer decision support data pool
• Validate approach and toolset with a variety of geographic areas globally
• Create and use synthetic data to augment data with expanded demographics and psychographics attributes to support advanced analytics and scenario forecasting, while protecting sensitive information.
Accomplishments – HERC²ULES implementation methodology

Earth Observation Sensing

Demographics & socioeconomics Epidemiology

HERC²ULES
- Administrative
- Anthropometric data
- Infrastructure
- Health determinants
- Environmental stressors

What-if scenario simulation
Decision-ready Indicators
Prediction models
Automated test datasets

Raw data sources
- Satellite
- Meteo
- Census
- Health provider

Analysis-ready data
- Fusion
- Enrichment
- Scaling & extrapolation
- Time-series forecast

Multi-sectoral impact

Applications
- Climate change policy
- Education
- Data science

Partners and geographic regions – Europe: Spain, UK, Finland, Italy, Greece, Turkey, Switzerland, USA: California, Arizona, Nevada, Texas, New Mexico, North Carolina, Maryland, Latin America: Perú, Argentina, Uruguay, Africa: Egypt, South Africa, Several Sub-Saharan Countries

International organizations: WMO, MRI (Conectate A+), PAHO, Red Clara, WHO, Inter American Institute (IAI) for Global Change Research

Government institutions: Organismo Andino de Salud, (Convenio ORAS–CONHU), Ministerio de Salud Pública de Uruguay, Ministerio de Salud Pública de Neuquén, Argentina
Needs: Bring HERC$^2$ULES to life

We seek funding, partners, and data

**Sponsors role:** Project scope
- Funding
- Identification of partners
- Identification of decision makers
- Input on implementation plan
- Data needed

**Fill in Knowledge Gaps**
- Impact of extreme heat to:
  - Maternal/child health
  - Maternal/child nutrition
- Low and Middle Income Countries (LMICs)
- Adaptation effectiveness

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Your support plays a key role in taking this to the next level