Herbert Wertheim College of Engineering
UNIVERSITY of FLORIDA

Assimilation of Earth Observation to Improve and Enhance Global Predictive Ability of Forecasting Risk of Cholera Outbreaks

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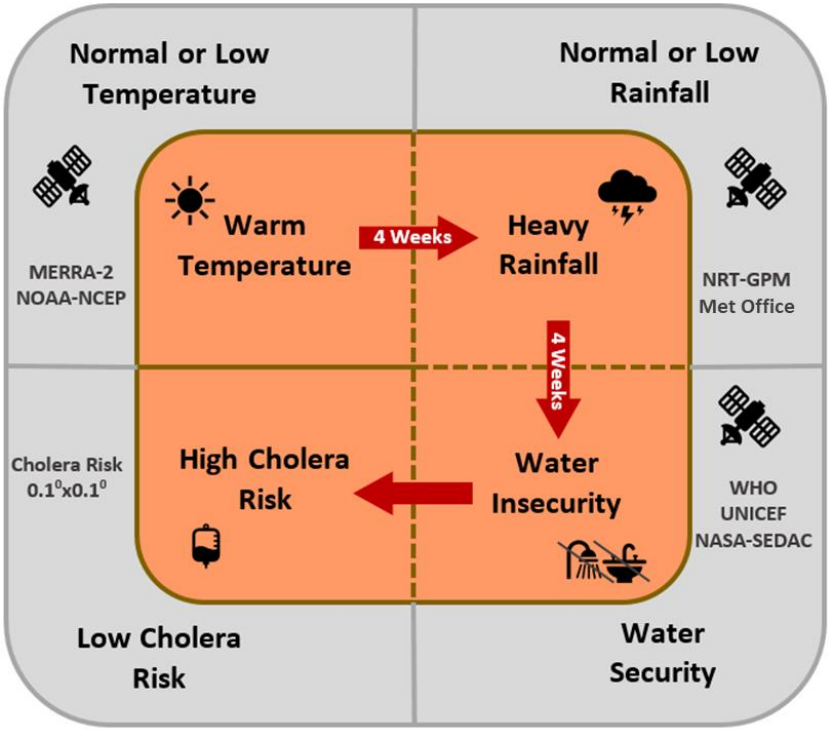
Goal of the proposal: Development and deployment of real-time earth observations based global cholera risk prediction and decision-making system.

Proposed research harmonizes and synthesizes role of hydrological, climatic, microbiological and sociological processes for forecasting risk of cholera outbreaks at global scales from satellites and provide an early warning to vulnerable human populations through innovative use of technology and partnerships with authoritative decision-making end-users.



Warm temperature= above climatological average temperature
Heavy rainfall= above climatological average precipitation
Water insecurity=lack of access to water and sanitation access
High cholera risk=probability of cholera greater than 50%

Objectives

1. **Enhance predictive ability of cholera risk model though integration of transmission component with trigger component.**
2. **Develop earth observation based data architecture for effective communication of cholera risks.**
3. **Develop Anticipatory Decision Making (ADM) toolkit for deployment of cholera prediction modeling system on global scale.**

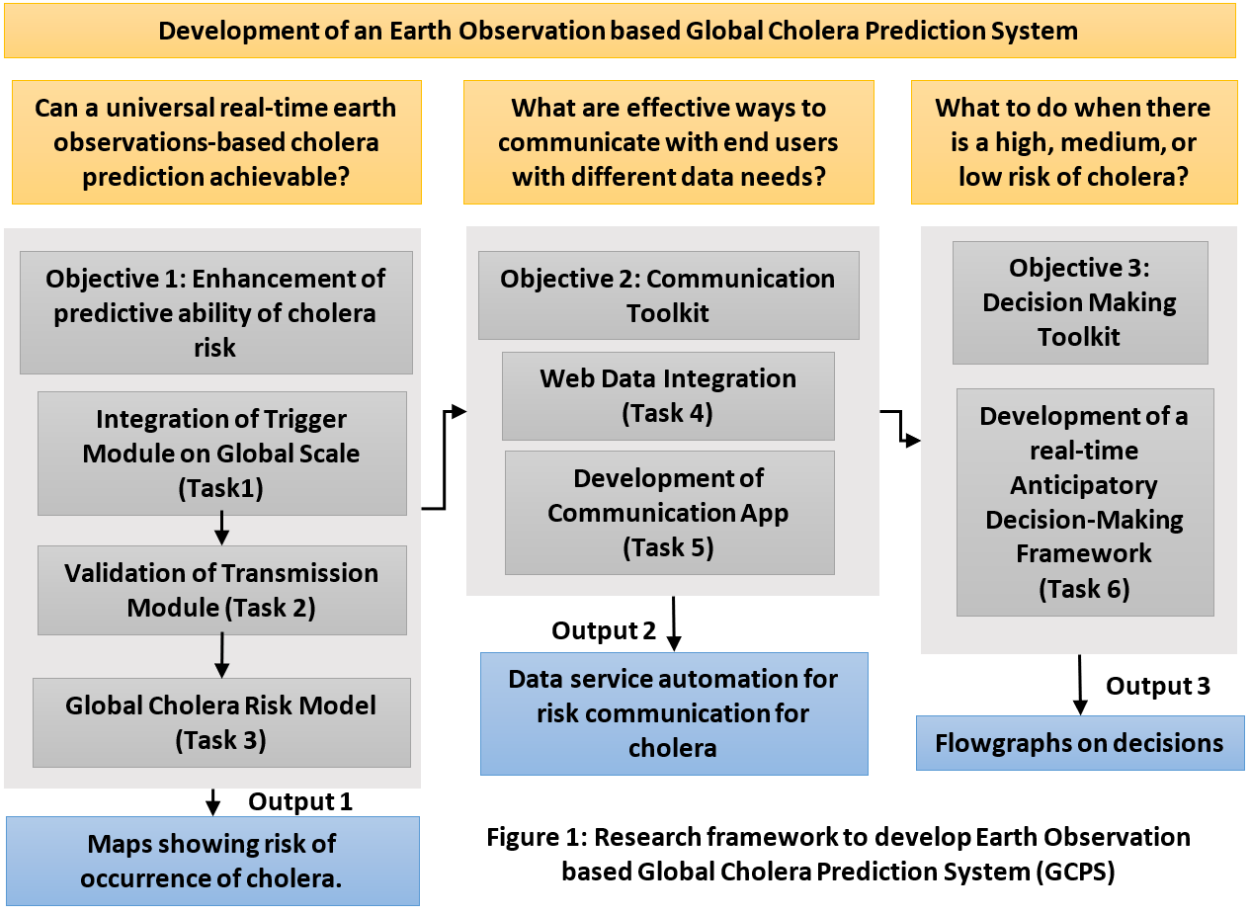
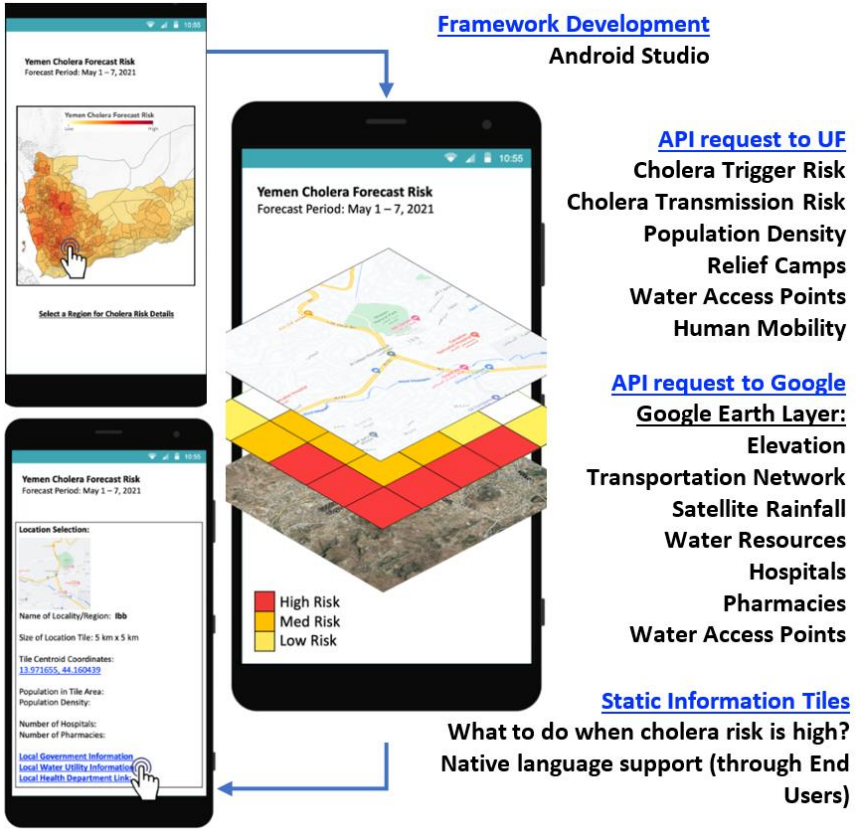


Figure 1: Research framework to develop Earth Observation based Global Cholera Prediction System (GCPS)



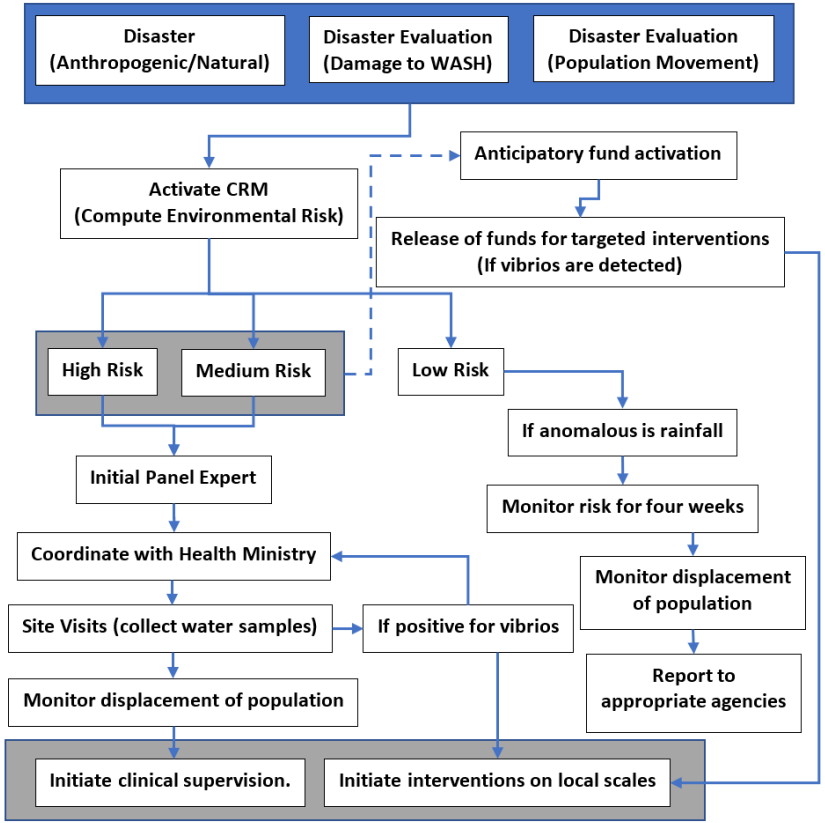


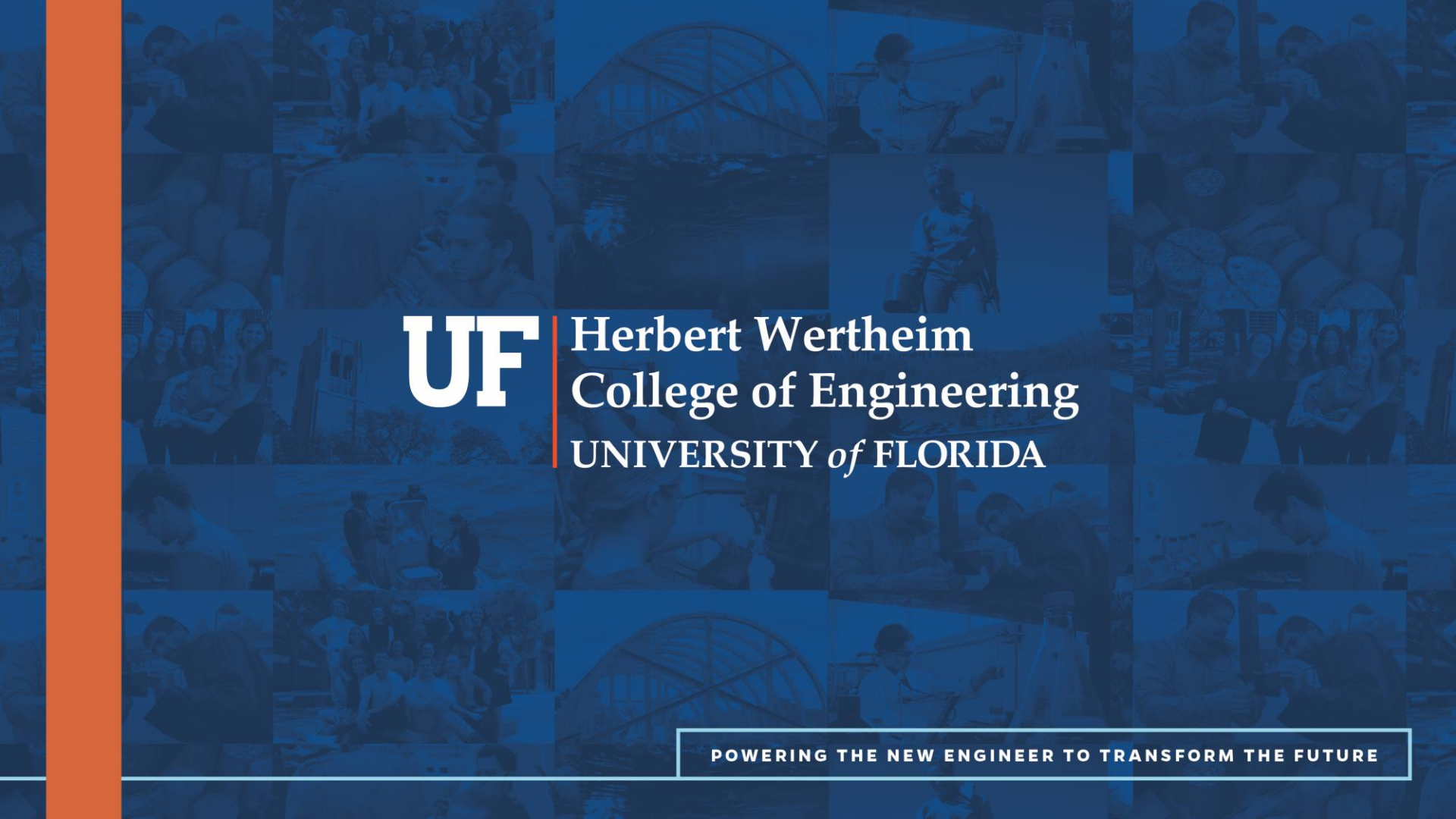
Figure 7: Preliminary flowgraph prototype of ADM being developed by UF/ UMD/URI/UNOCHA

Modeling consortia

- Enhance predictive intelligence for when and where cholera risk is high- with limitations, abilities and knowledge gaps
- One of the many tools available and supported with web-apps
- Includes information on anticipatory decision-making processes
- One of the kind toolkits for population on design and prevention of cholera

ARL Information

- Starting ARL: 6
- Current ARL: 6
- Finishing ARL: 9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