CLIMATE WEEK 3
UN Climate Change

Delivering AI for Climate Action in Developing Countries

AI-driven Climate Resilience for SIDS

23 April 2026, Climate Week Yeosu

Letetia Mary Addison (PhD)

Lecturer in Biostatistics/ AI in Climate Researcher

The University of the West Indies, St. Augustine Campus

Letetia.Addison@sta.uwi.edu

The Climate Challenge in SIDS

- Only **39% of SIDS have multi-hazard early warning systems**
- Disasters cause **significant GDP loss and infrastructure damage**

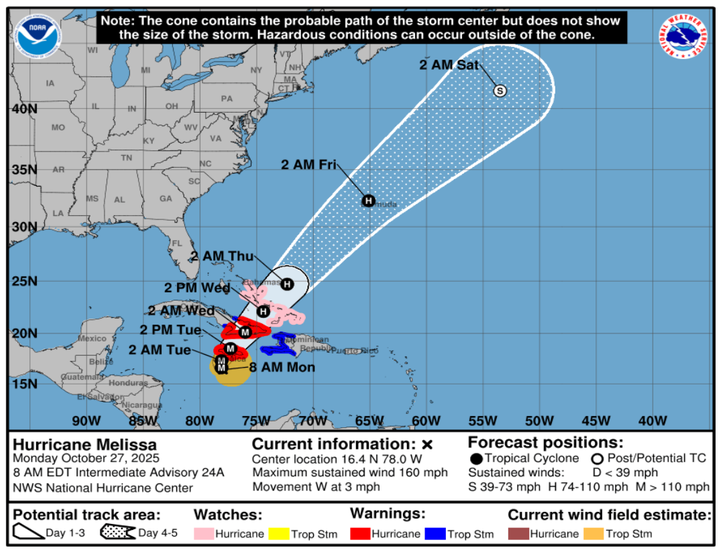
Current systems are:

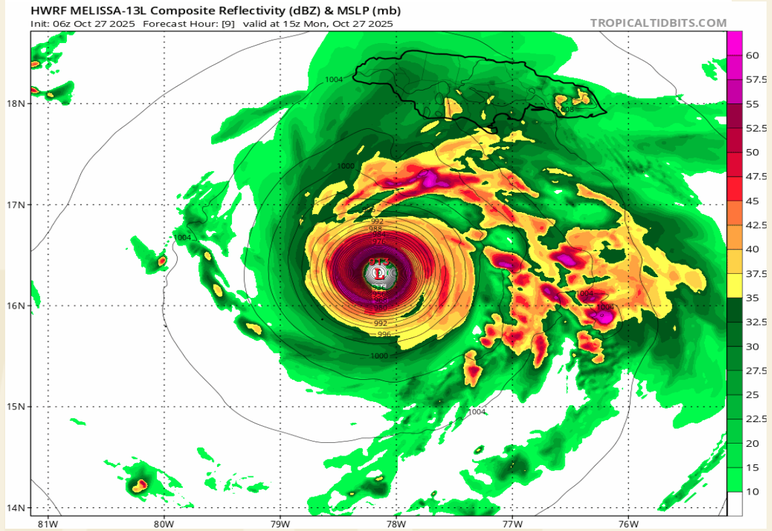
- fragmented
- slow
- not locally adaptive

- Communities are not lacking data, they are lacking timely, actionable decisions.

Hurricane Melissa roars into history: Category 5 monster targets Jamaica

Catastrophic, life-threatening flash flooding expected across the Caribbean





Economic Impact of Disasters: $153 billion lost in 50 years, 2.1% GDP loss vs. global average of 0.3%

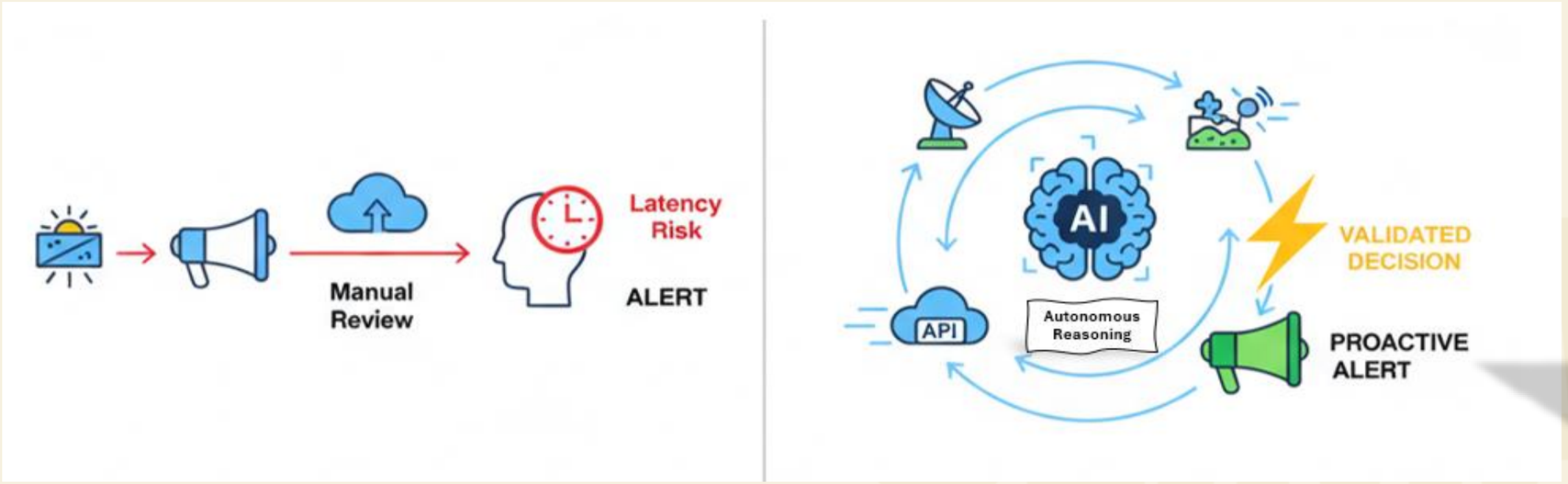
Re-designing Early Warning Systems (EWS)

Traditional EWS (linear model)

Sensor → Data → Tool → Human Analysis → Alert

Agentic Systems uses agency to:

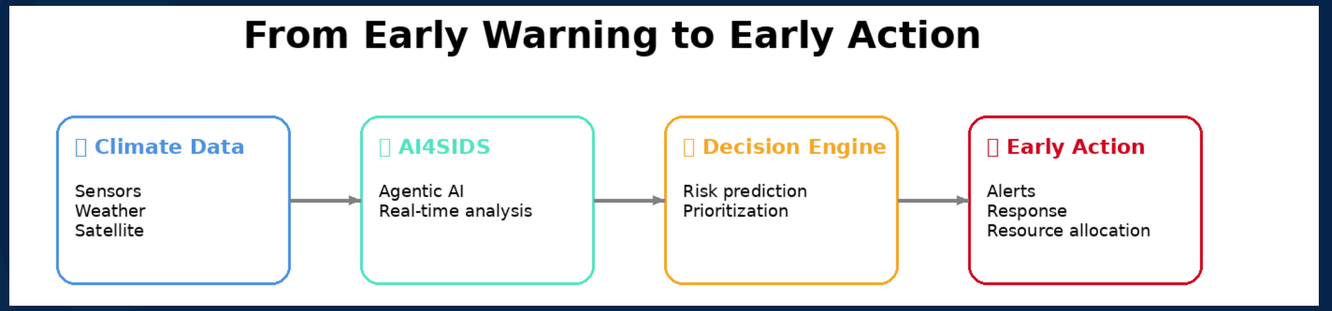
- Interact with the world
- Handle the heavy lifting of verification
- Present the human analyst with a validated decision

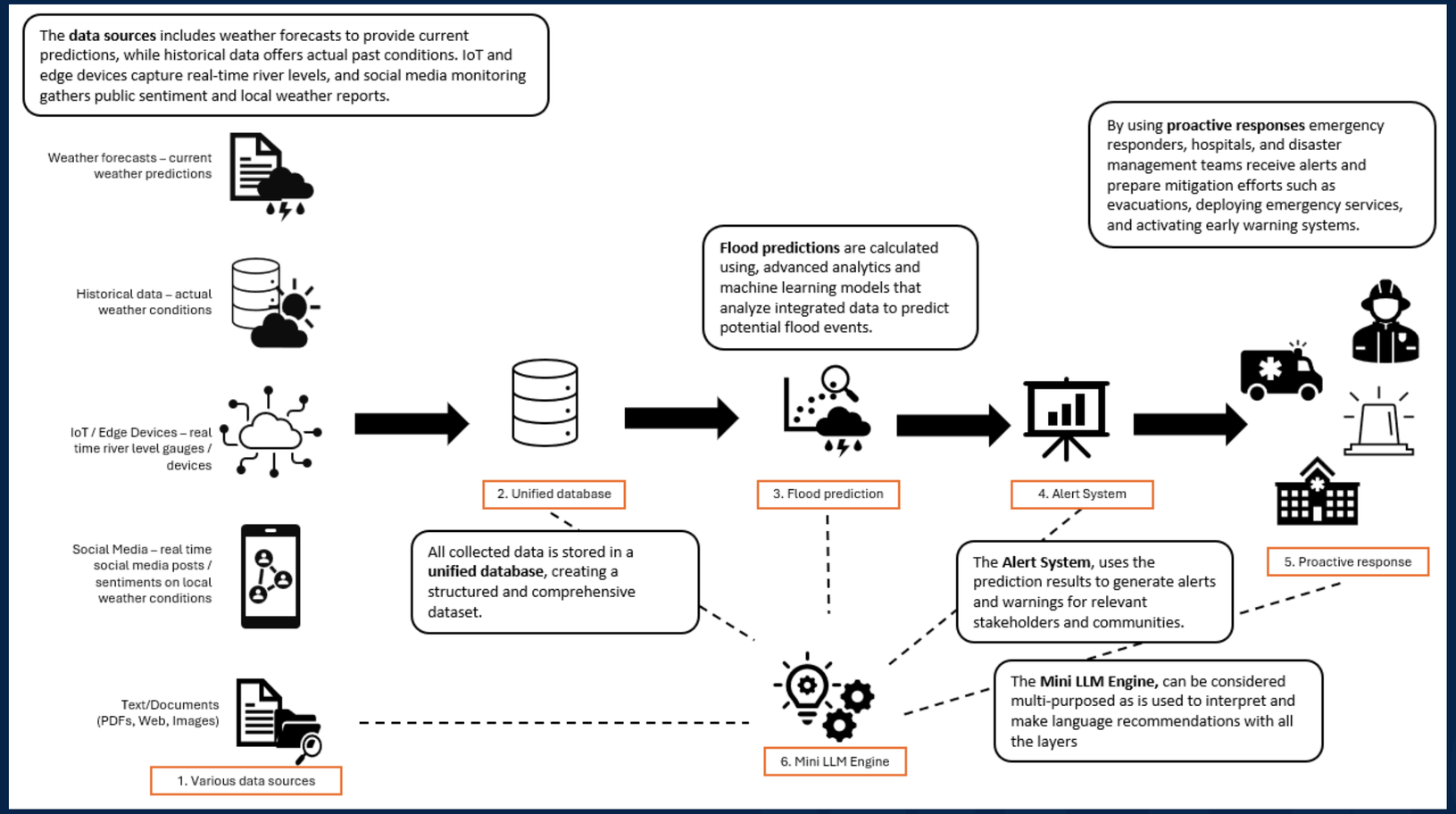


The primary challenge here is not the data, it's the ***latency***.
The primary objective: ***minimize*** the *analysis-to-action* gap.

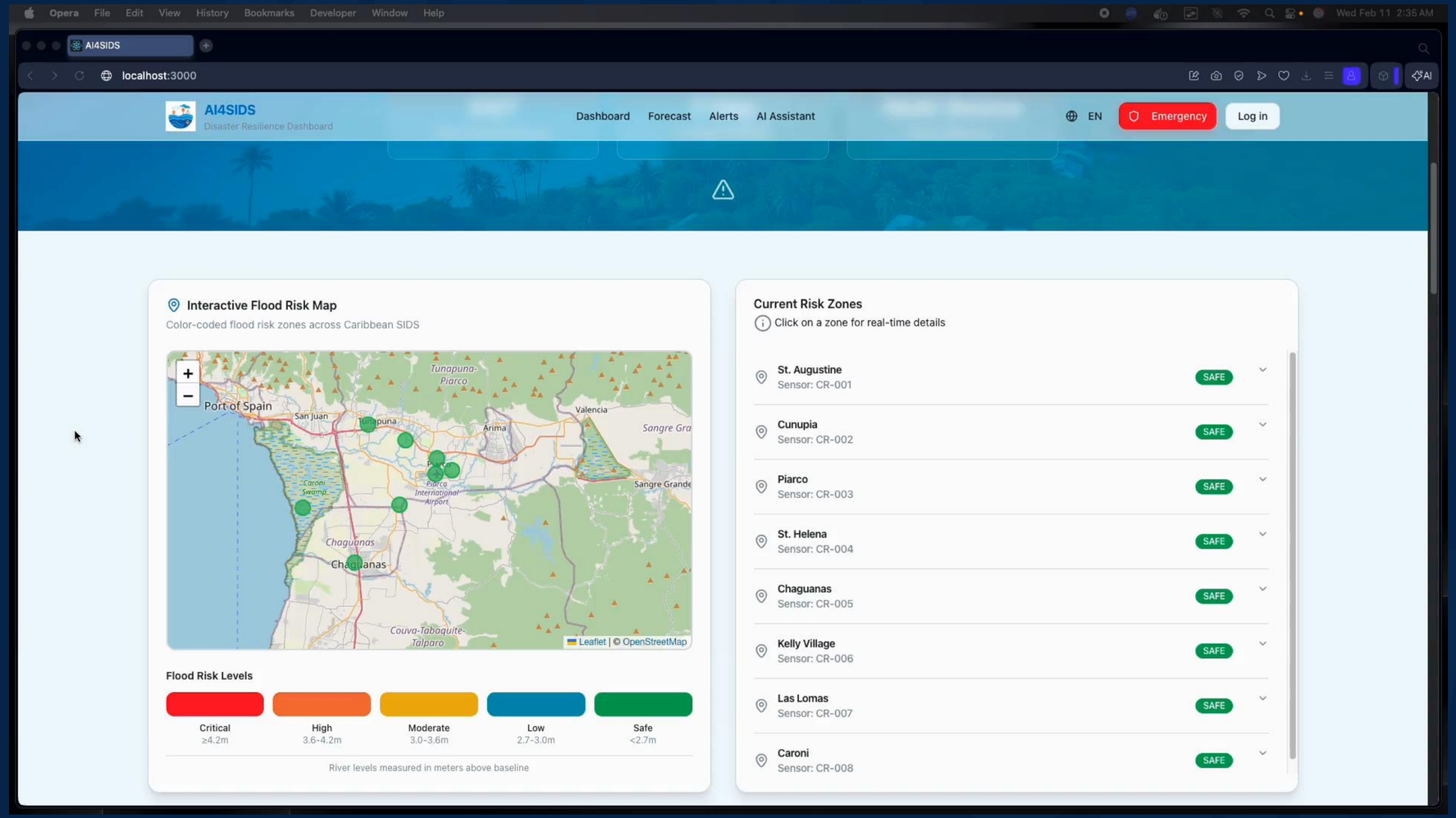
AI4SIDS: Effective “end-to-end” and “people-centred” EWS

AI4SIDS Grand Prize winner of the 2024 AI Innovation Grand Challenge

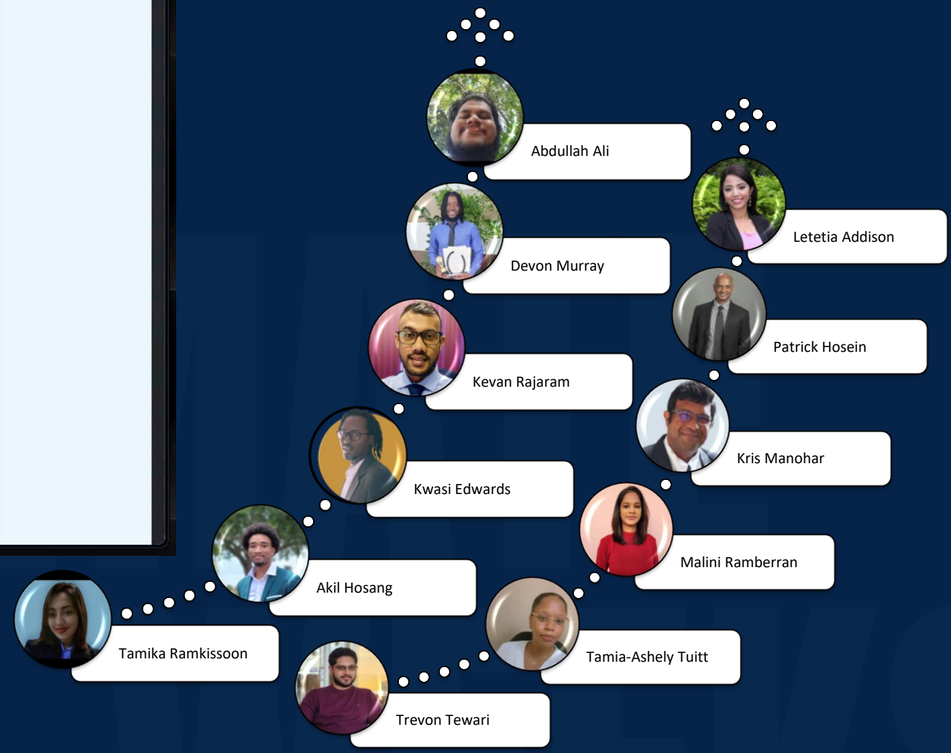




AI4SIDS: AI-driven Climate Resilience for SIDS Prototype



https://climate.lab.tt/
for AI in
Climate Research Projects



AI4SIDS: Scaling Pathways for Resilient AI

🌎 **Selected use case – World Bank's 2026 LAC AI Accelerator Programme** in collaboration with Ministry of Public Administration and AI (MPAAI)

🤝 **Engaging national stakeholders and ministries** (e.g., Office of Diaster Preparedness and Management (ODPM))

🧩 **Co-designed for real-world deployment in SIDS**

Now moving toward pilot implementation (Call to Action)

We are seeking:

🌐 **Government and disaster agencies** – pilot deployment

🤝 **Partners & funders** – scale implementation

🧠 **Technical collaborators** – strengthen AI capacity

Key aspects: Balancing Sovereignty, Cost, and Reliability

Global Cloud	Sovereign Infrastructure	Local Provider
AWS / Azure / Google	Local GPU Clusters	Regional Data Center
❌ Internet / Forex Dependency	❌ High Setup Cost	❌ Lower Scale
✅ **Zero Upfront Cost**	✅ **Total Control**	✅ **Data Sovereignty**

Thank you.

23 April 2026, Climate Week Yeosu

Letetia Mary Addison (PhD)

Lecturer in Biostatistics/AI in Climate Researcher

The University of the West Indies, St. Augustine Campus

Letetia.Addison@sta.uwi.edu

https://www.linkedin.com/in/letetia-addison/

https://climate.lab.tt/

for AI in Climate Research Projects