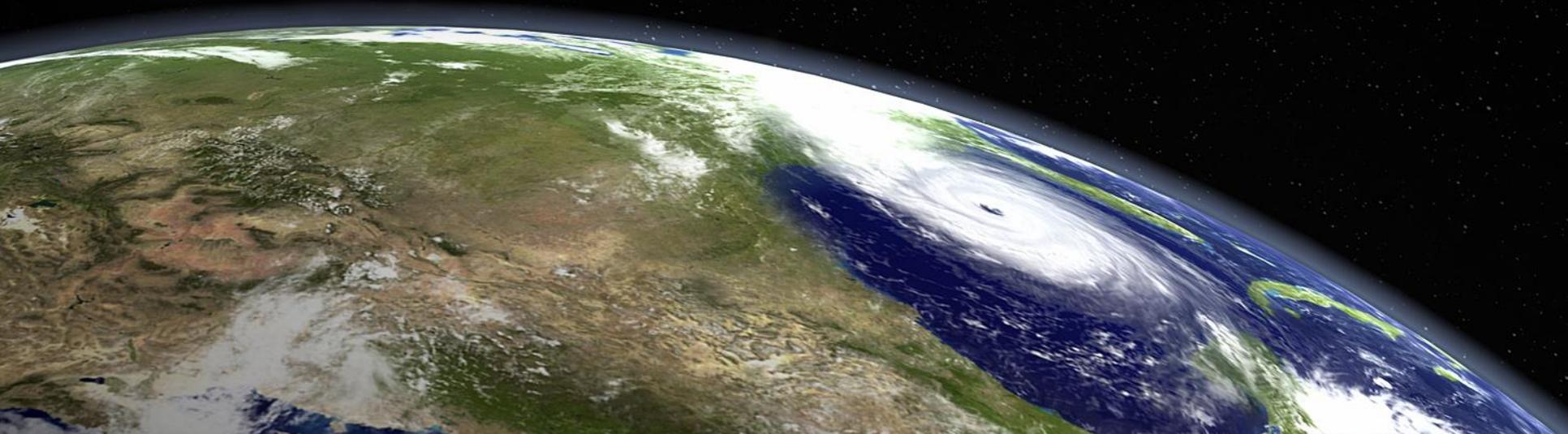


# Benefits of Partnering with the Private Sector: Success Stories in Building Infrastructures



**John Doherty – Global Development Officer**

# Challenges Facing National Met Agencies

## Building Severe Weather Monitoring Systems

### Budgetary

- Budgets are very limited
- Needs are greater – climate change, economic growth, more user needs

### Technological

- Traditional solutions have poor track record – many systems are deployed, few remain operational
- Operational challenges in remote and less developed regions need to be addressed

### Organizational

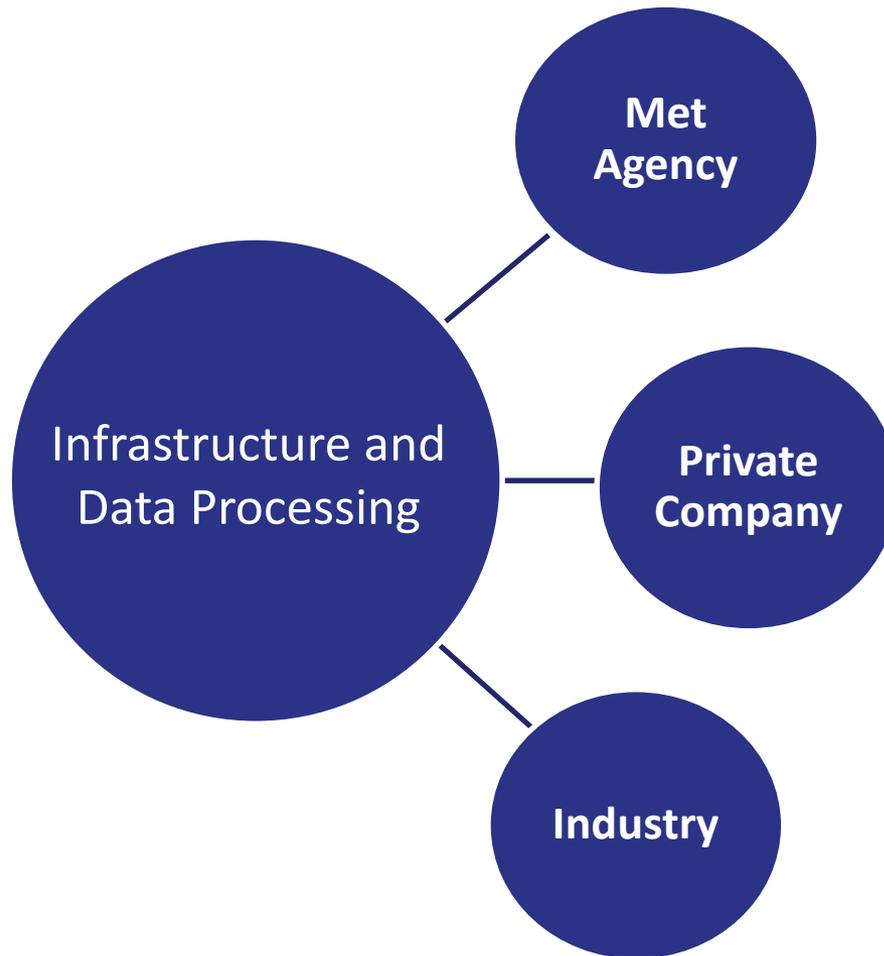
- Endless cycle of the NMHS unable to effectively capture and warn of severe weather (i.e. show relevance and value) and therefore being unable to obtain more modernization budgets

### Human

- Ongoing property damage, injuries and deaths due to severe weather activity (largely underreported)

**One Solution: Enable a Private-Public Partnership Providing “Next Generation” Technology Delivering Performance and Sustainability at Lower Cost**

# Delivering Infrastructure, Capacity and Sustainability with Lower Operating Cost



- Data ownership
- Shared data creates sustainability model
- Secure cloud computing instead of servers
- Training builds capacity to fully utilize and operate the network
- Contractually defined data access
- NMHS cost recovery assistance to sustain network
- Development of end user services
- Supports Met Agency with training and technical expertise
- Purchases data and services developed by each party or jointly
- Industries: Emergency Management, Aviation, Utilities, Agriculture, Mining, Petroleum and others

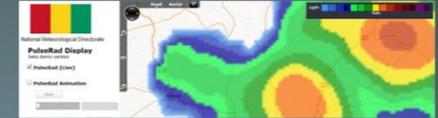
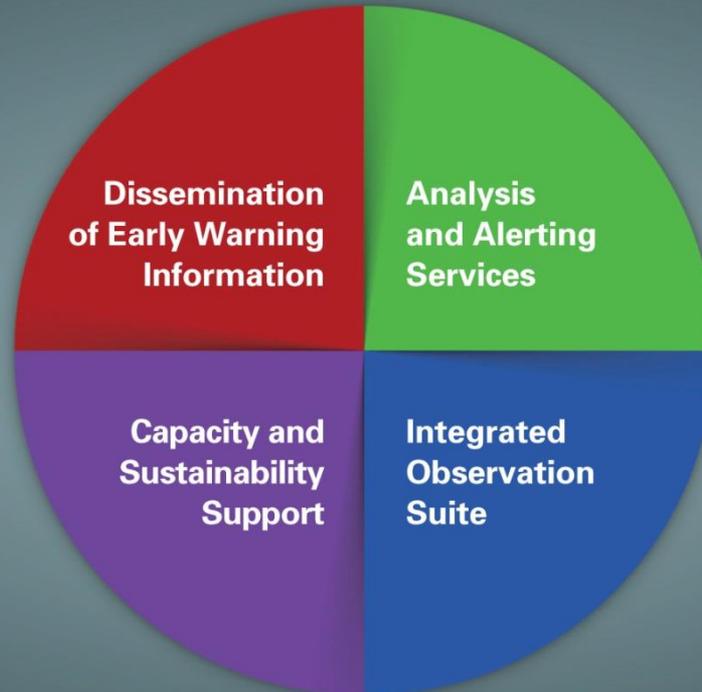
# Early Warning System: Next Generation Technology with Lower Cost

## Fully Integrated Early Warning System



- StreamerRT Display
- Mobile Phone Weather Content and Alerting
- On-line Portal

- EWS Installation, Hosting and Program Management
- Training and Capacity Building
- Sustainability Planning and Business Development



- Dangerous Thunderstorm Alerts
- PulseRad Rainfall Monitoring
- ENcast Weather Forecasts

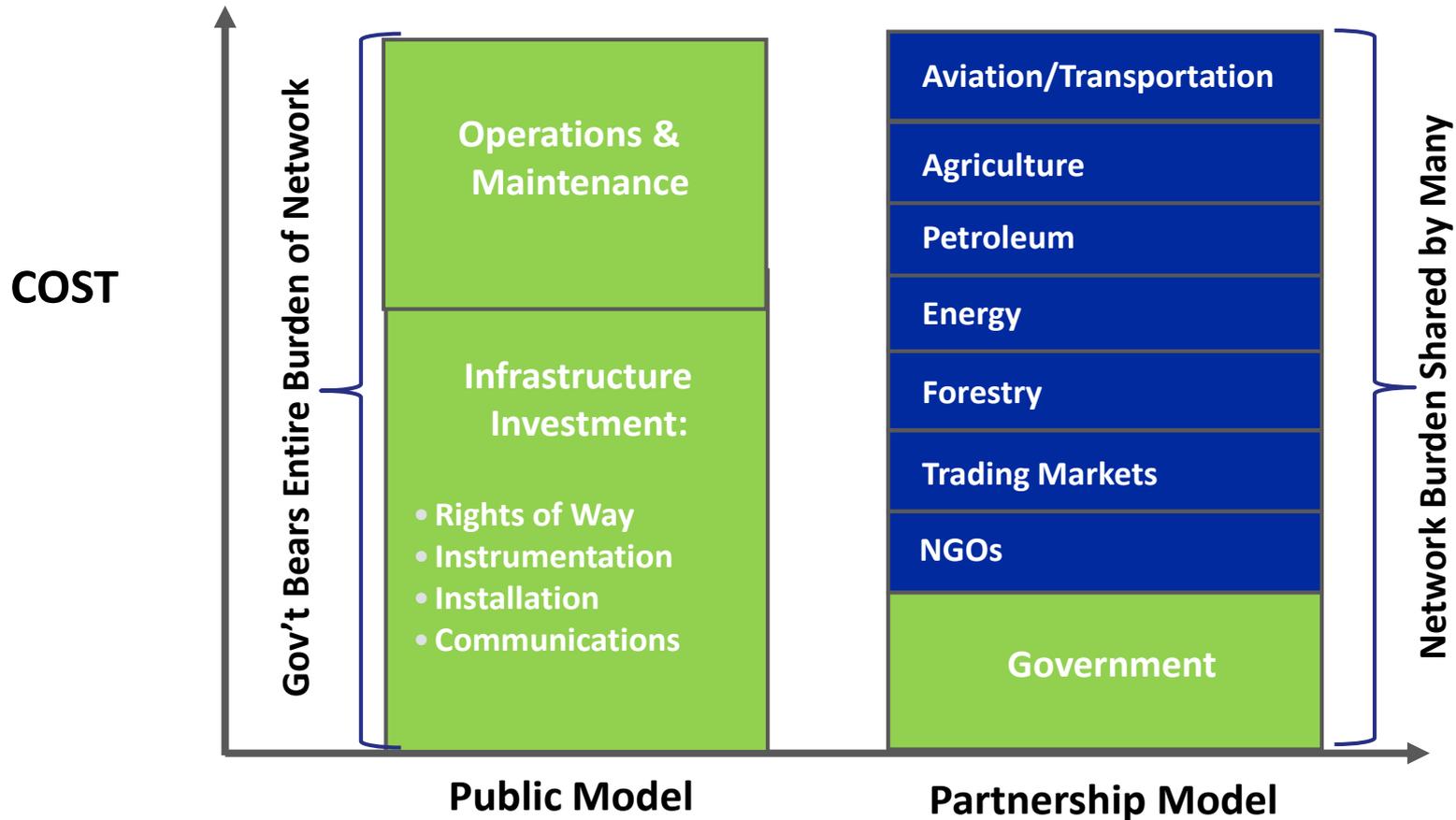
- Total Lightning Sensor
- Automatic Weather Station
- Use of Existing Mobile Towers



**Provides increased capability, capacity, and sustainability for the Met Service**

# Private-Public Partnership Enables Sustainable Met Service Operations

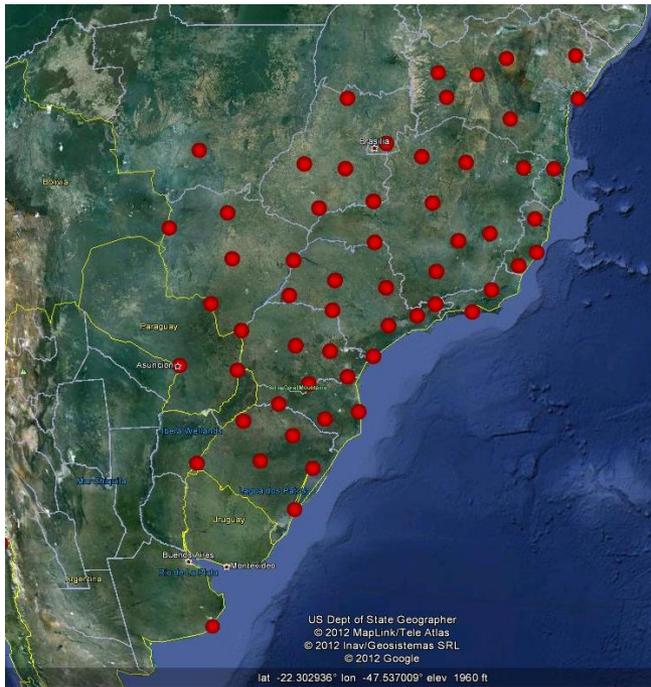
## Total Operating Cost



# Public Private Partnership – INPE Brazil

## Data Services Sustainability Model

### BrasilDAT Total Lightning Network



### Sustainability Achieved Through Commercial Applications for Industry



- Aviation
- Electric utilities
- Agriculture
- Mining
- Media/broadcast
- Emergency Services

# Network Development Partnerships Growing in Africa



## Guinea Early Warning Pilot Project (West)

### 12 station network of total lightning sensors and AWS

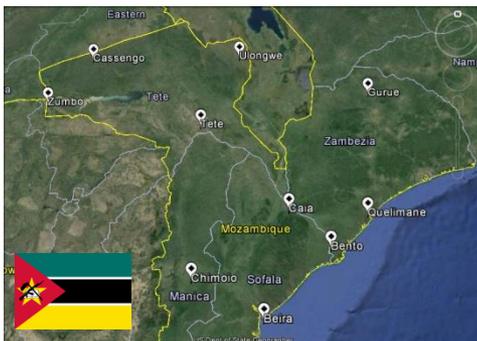
- Complete Early Warning System providing proxy radar, alerting and precipitation forecasting
- Prospective Stakeholders: Aviation, energy, mining and agriculture



## Lake Victoria Basin Nowcasting Pilot Project (East)

### 12 station network of total lightning sensors and AWS

- In partnership with East African Community Secretariat (EAC), and African Centres for Lightning and Electromagnetics (ACLE); Fully committed to UN for 2014-15 implementation
- Prospective Stakeholders: Fisheries, agriculture, hydropower



## Mozambique Early Warning Network Pilot Project (South)

### 10 station network of total lightning sensors and AWS

- In partnership with Instituto Nacional de Meteorologia (INAM)
- Prospective Stakeholders – Hydropower, mining and agriculture



# Appendix

# Central Mozambique: Pilot Early Warning Network



Prospective Stakeholders:

Hydropower -

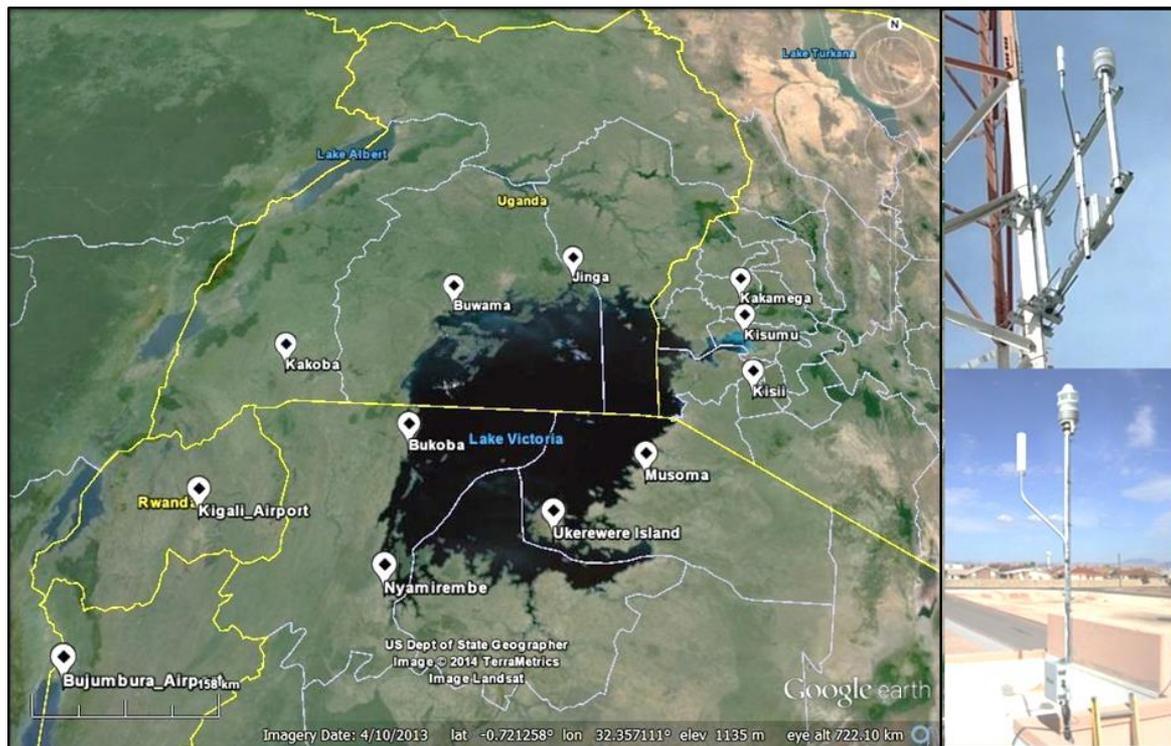


Dozens of mines-



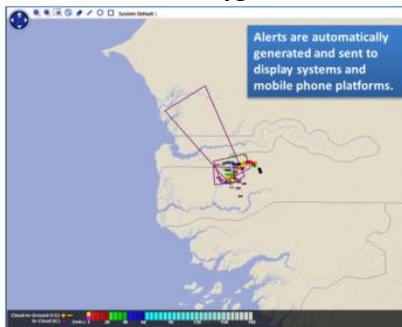
RioTinto

# East African Community: Lake Victoria Pilot Project

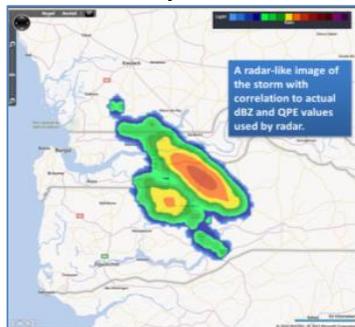


- Tanzania, Kenya, Uganda, Rwanda, Burundi
- East African Community (EAC) Secretariat
- In partnership with African Centres for Lightning and Electromagnetics (ACLE)
- 12 Stations covering Lake Victoria basin
- Verification, training and capacity building
- Committed to UN to fully implement in 2014-5
- **More stakeholders are most welcome!**

Alert Polygon



Proxy Radar



Rainfall Estimate

