

Integrating Private Sector on
Multi-Hazard Early Warning Systems' Governance and Actions

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**The Role of the Private Sector in Monitoring, Observing
and Predicting Hazards in the Caribbean**

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OTT Hydromet



Our Purpose

Innovate modern solutions that enable *confident decision-making* despite increasingly volatile and intense weather



MEASURING THE WORLD'S WATER CYCLE AND SURFACE WEATHER

THROUGH A RANGE OF BRANDS TO OFFER COMPLETE HYDROLOGIC AND METEOROLOGIC SOLUTIONS THAT SERVE TO MONITOR AND PROTECT THE ENVIRONMENT AND LIVES



Solutions for Hydrology, Meteorology, and Solar Energy



Analytics software for real-time, accurate surface and groundwater data



Solar radiation and atmospheric properties for meteorology and solar energy



Ambient weather monitoring for meteorology and weather critical operations



Hydro-meteorology monitoring, data collection and management for water, weather, and renewable energy



Hydrology monitoring and data management for surface and groundwater



Plant disease monitoring and agricultural meteorology for smart farming and irrigation management



Environmental water quality monitoring for surface and groundwater



METEOSTAR

Software for real-time weather forecasting in aviation weather and flight planning

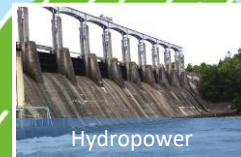
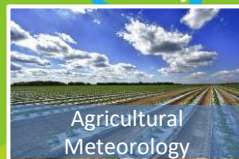
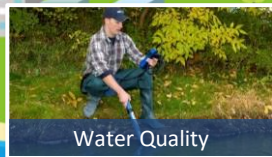
AROUND THE WORLD

OTT HYDROMET IS PRESENT IN 23 COUNTRIES, PLUS DISTRIBUTION PARTNERS IN MORE THAN 90 COUNTRIES, ALL AROUND THE WORLD.



MEASURING THE WORLD'S WATER CYCLE AND SURFACE WEATHER

SUSTAINABLE SOLUTIONS TAILORED TO CUSTOMER NEEDS



WHAT ARE OUR GLOBAL SOCIETAL CHALLENGES?



Extreme Weather



Drought



Flood



Tsunami



Heatwave



Wildfires

Water Scarcity



Water Resources



Irrigation



Saltwater Intrusion



Water Quality



Surface Water Quantity

Macro Challenges



Climate Change



Food Security



Renewable Energy



Environmental Protection



Population Increase



PEOPLE CENTERED EARLY WARNING SYSTEM



Disaster risk knowledge

Systematically collect data and undertake risk assessments

- Are the hazards and the vulnerabilities well known by the communities?
- What are the patterns and trends in these factors?
- Are risk maps and data widely available?



Detection, observations, monitoring, analysis and forecasting of hazards

Develop hazard monitoring and early warning services

- Are the right parameters being monitored?
- Is there a sound scientific basis for making forecasts?
- Can accurate and timely warnings be generated?



Preparedness and response capabilities

Build national and community response capabilities

- Are response plans up to date and tested?
- Are local capacities and knowledge made use of?
- Are people prepared and ready to react to warnings?

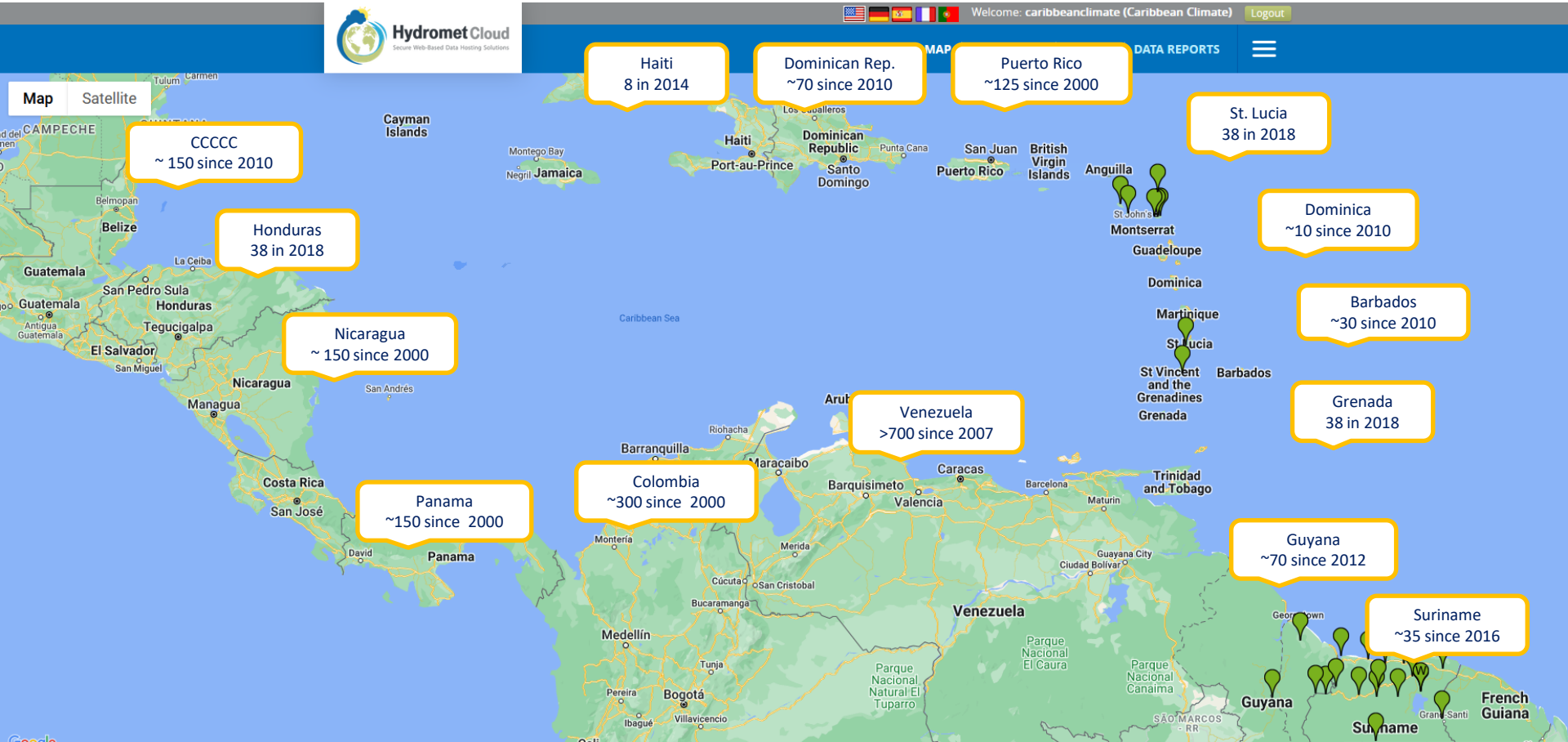


Warning dissemination and communication

Communicate risk information and early warnings

- Do warnings reach all of those at risk?
- Are the risks and warnings understood?
- Is the warning information clear and usable?

OTT Hydromet Footprint in the Caribbean



Flood Warning System

Riviere Grise & Riviere Blanche - Haiti

Funded by USAID

After the 7.0 magnitude earthquake

Project Components

- 4 Automatic Water Level Stations
- 4 Siren Stations
- 2 Control Centers with Customized GUI

Engineering Services & Support

- System Design and Configuration
- Customized Software GUI for Siren Controls
- Site Survey and Site Preparation
- On-Site Installation w/ Local Partner
- OEM Training for Hardware and Software
- After Sales Support and Warranty



Radar Sensor



Siren Station



In-Country Software Training

Puerto Rico Tsunami Warning System



Funded by University of Puerto Rico and FEMA
After Indian Ocean Earthquake and Tsunami

Project Components
NOAA/NOS Tide Stations
XConnect Data Center

Tsunami Messages
Tsunami Watch
Tsunami Warning
All Clear / Cancellation of Tsunami Watch or Warning



Donation of Two Automatic Weather Stations

In Collaboration with CIMH

End User: British Virgin Islands Airport Authority

After the 2017 Category 5 Hurricane Irma

Project Components

Supply of Two Synoptic Automatic Weather Stations

Engineering Services & Support

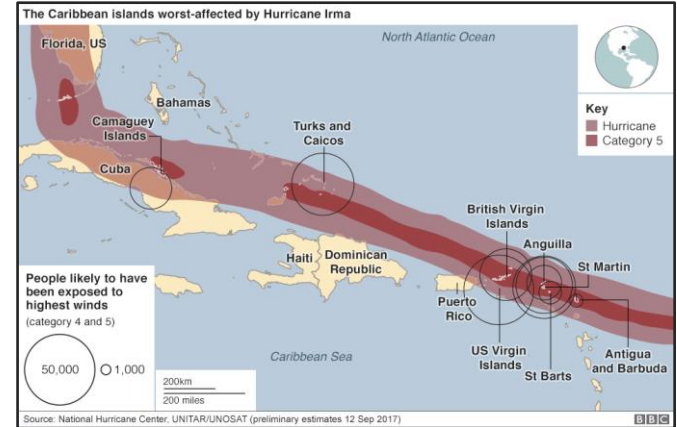
System Design and Configuration

After Sales Support and Warranty

CIMH Support

Site Survey and Site Preparation

On-Site Installation with Local Partner



Capacity Building Activities

Advanced Users Symposium

- Yearly Event open to Customers Worldwide
- Opportunity to Showcase End User Applications

Regional Training

- Component of Regional Projects
- Attended by Technical Staff of Regional NHMS



Public-Private Engagement

Advocacy in Global, Regional & National Fora

To find ways for the private sector to meaningfully contribute to improving availability, access & dissemination of accurate and timely weather, water and climate data

ACTIVITIES

Speaking Engagements at Meetings & Conferences

- ❑ Advocate for private sector engagement for project development
- ❑ Support creating space for public-private transparent discussions to better understand both perspectives and expectations

HMEI Governing Council

- ❑ Councilor for WMO Commissions Collaboration – strengthen collaboration & promote trust between hydromet companies and the wider WMO community in support of Member States

Global Hydrometry Support Facility (WMO HydroHub)

- ❑ Advisory Council Member – Private Sector Representative – provide advise on strengthening national water monitoring capabilities & promote HydroHub Initiative

Promote PPEs at (sub) regional & national levels

To work towards building trust through better understanding of the specific needs of the hydro-met institutions and identify strengths and experience that OTT can bring to the table

ACTIVITIES

Climate Funding Institutions & Aid Agencies

- ❑ Understand donor expectations, Co-develop & align on what good PPEs look like
- ❑ Pilot innovative ways to collaborate to have evidence for new policies

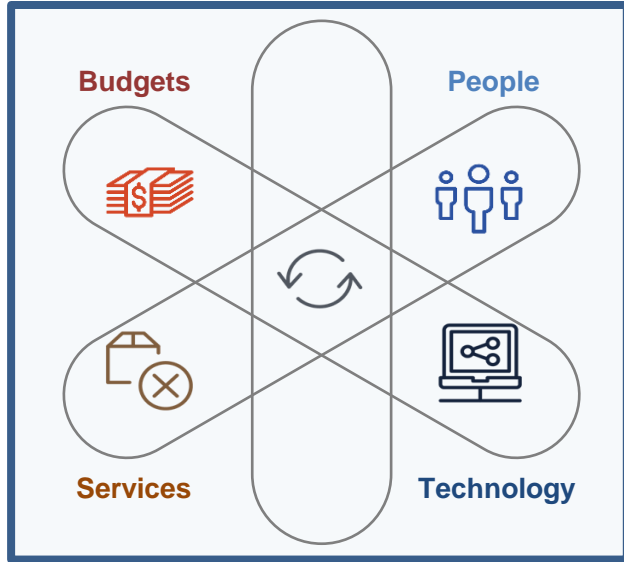
UN Agencies & Development Banks

- ❑ Explore innovative ways to collaborate to ensure sustainability of observation networks and increased capacity & expertise in developing countries

Regional & National Institutions

- ❑ Actively engage with Regional Climate Centers, National Hydromet Services and other end-users to better understand needs and find fit for purpose solutions

Challenges



BUDGETS

- Limited government budgets
- Dependence on sporadic donor funding

PEOPLE

- Limited technical skills & resources
- Lack of professional, empowered staff

SERVICES

- Limited ability to deliver services to decision makers & end-users
- Lack of credibility

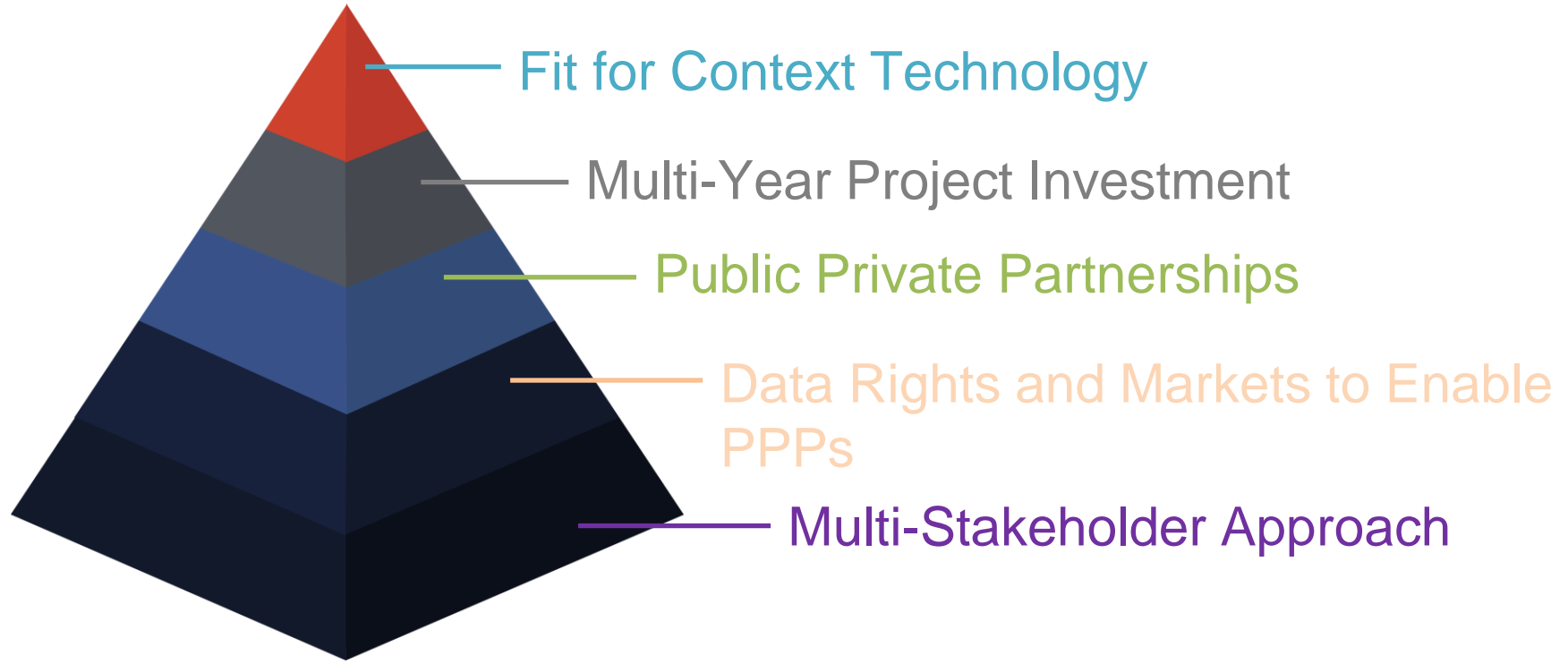
TECHNOLOGY

- Technology mismatch with capacity
- Basic operational constraints



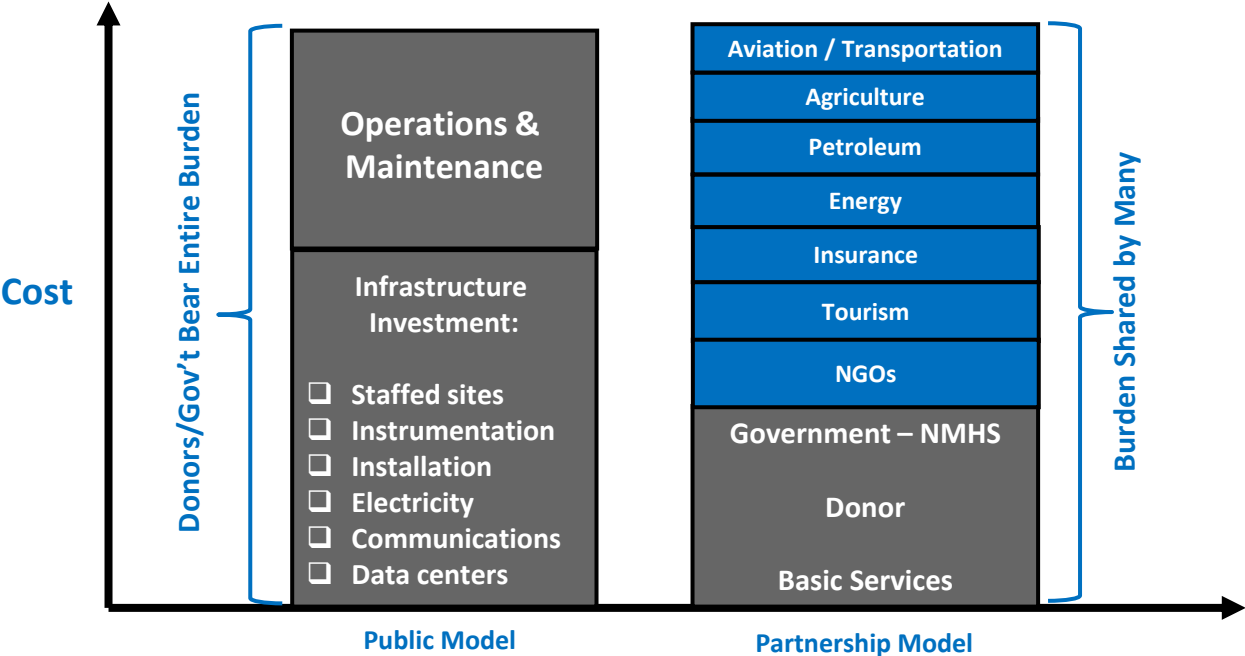
- Timelines too short
- CAPEX funding does not support operations
- Absorption capacity not always considered
- Procurement timelines & specifications lead to poorly specified systems that do not meet needs
- No Sustainment Strategy

Conditions for sustainable programme development



PPP enables sustainable delivery of hydromet services

Total Operating Cost of Weather Observing Networks



Call to action



- Open the communication lines
- Jointly explore how we can collaborate
- Engagements either bilaterally or with the support of WMO, UNDP, UNDRR, World Bank or any other relevant institution

Contact Details



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AQUATIC
Informatics



KIPP &
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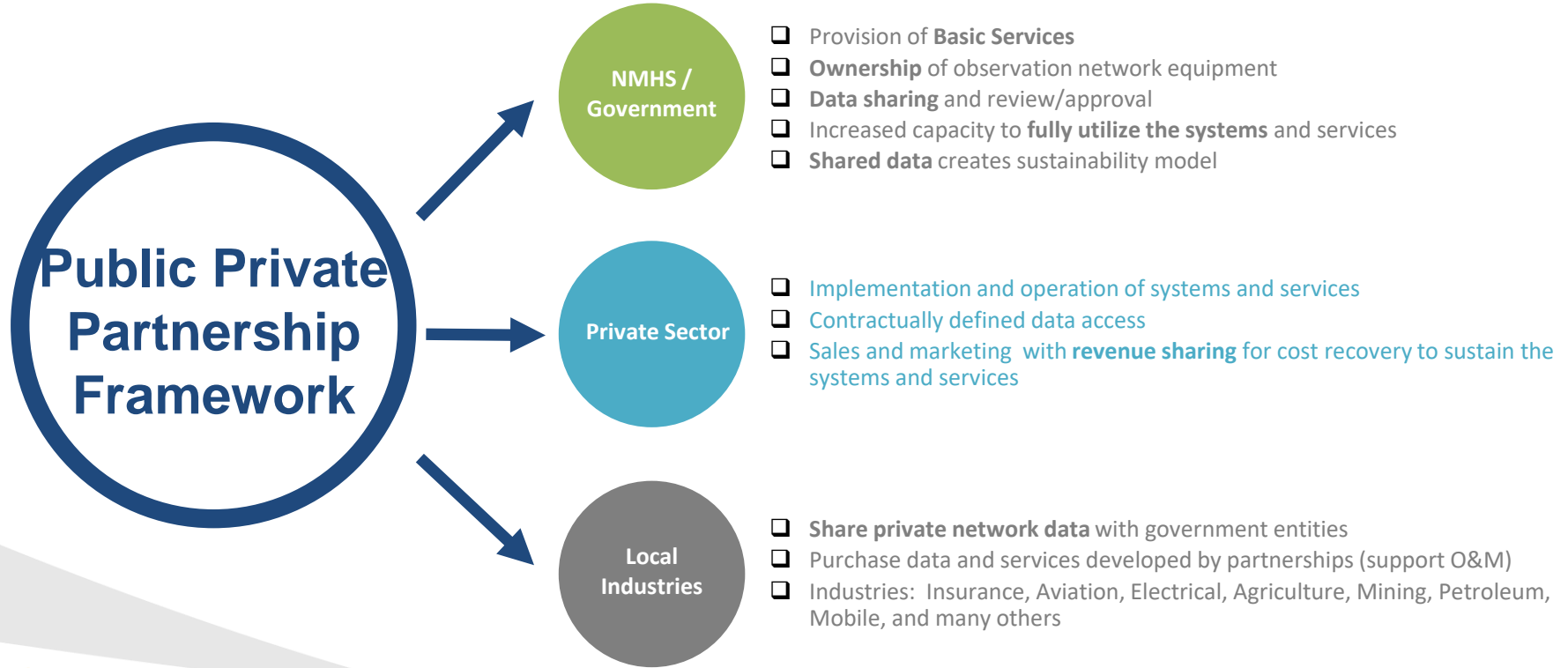


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PPP to enhance NMHS infrastructure, capacity & sustainability



Partnerships will need to consider sovereign authority, institutional mandates, etc