



Lessons Learned in Implementing Support to Climate Information Systems

Multi Country Programme for Climate Information and Resilient Development and Adaptation in Africa (UNDP- CIRDA)

UNDP CIRDA Regional Workshop
29 November -1 December 2017
Lusaka, Zambia

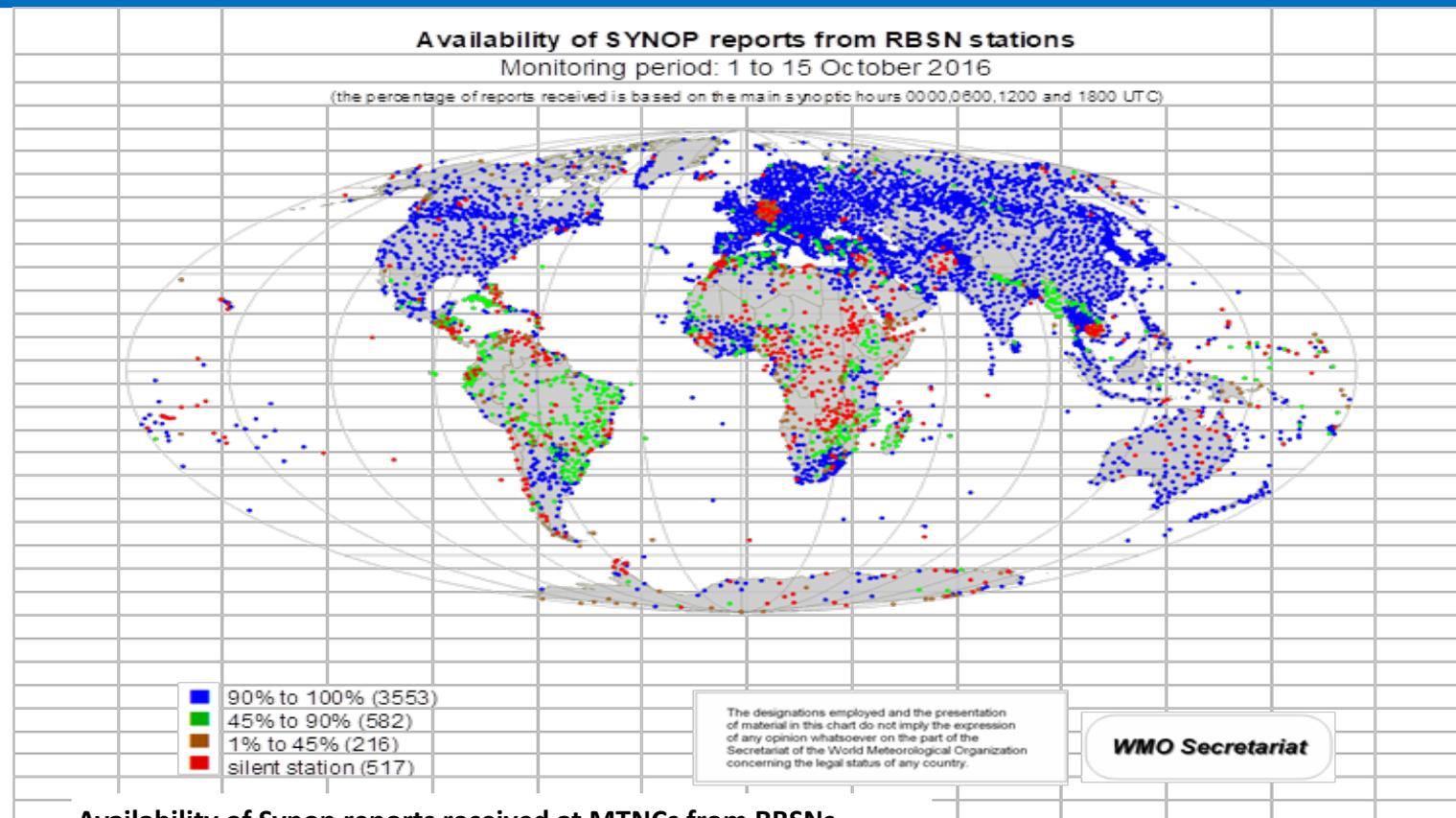
Information for Adaptation

UNDP approach to climate information in Africa has been designed in response to African LDCs' recognition that adaptation can not be achieved without reliable climate and weather information

Lack of actionable weather and climate information is a major cause of low adaptive capacity in Africa

Information must be accurate, comprehensive, timely, and consistently maintained (sustainable)

Information must be communicated and tailored to end users (policy makers, communities, etc.)



Availability of Synop reports received at MTNCs from RBSNs

Monitoring activities coordinated by WMO Secretariat

An end to end approach allows for all steps in an EW and CI Systems to work seamlessly and efficiently for informed decision making.



A new possibility for climate services

New and more cost efficient technologies can provided high quality climate and weather observations and leverage mobile communications networks



Integrated Lightning sensor with all in one AWS

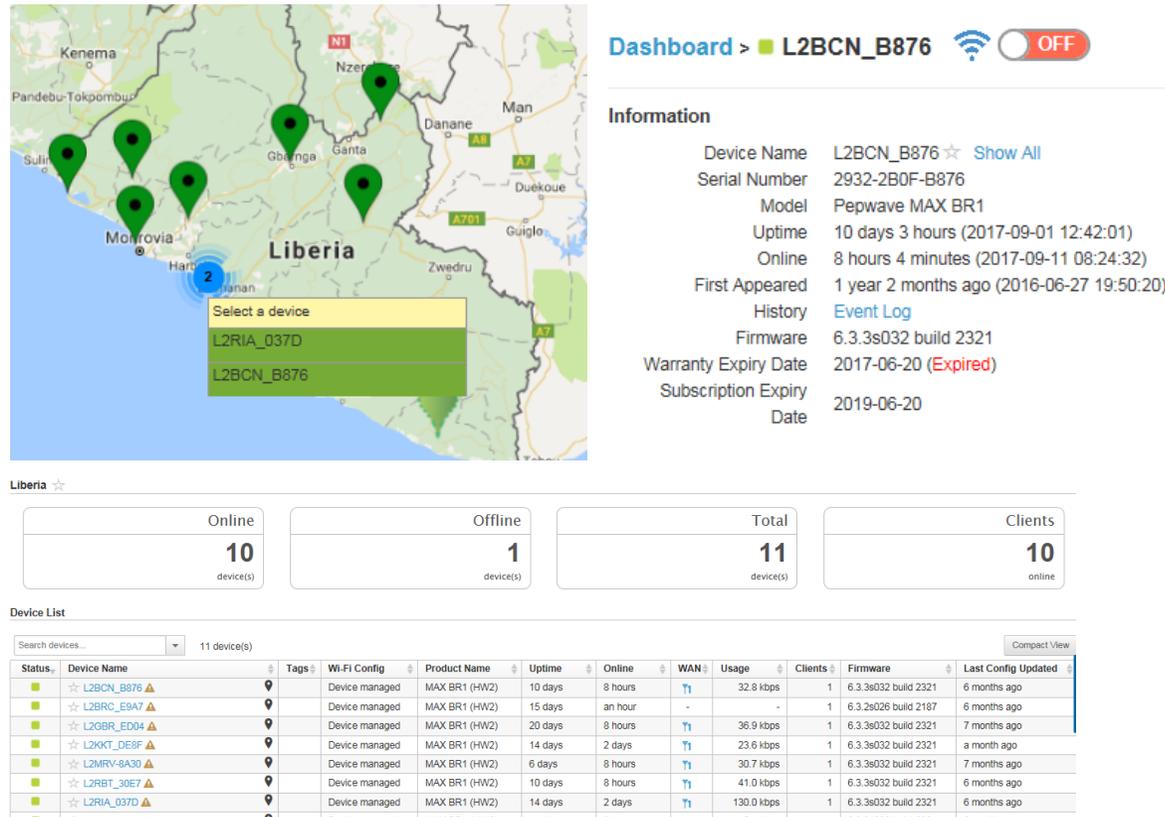
- Temp / Humidity
- Pressure
- Wind Speed / Dir
- Solar radiation
- Separate Automatic Rain-gauge

Images from the site installation in Uganda: Sensors were installed on Mobile Telecommunications towers, guaranteed power, security an communications

Converting observations to information in real time on cloud platforms

Data and information can be easily shared via the cloud, opening up the possibility for product development

Real Time Network view (Liberia)



Dashboard > L2BCN_B876 WiFi OFF

Information

- Device Name: L2BCN_B876 Show All
- Serial Number: 2932-2B0F-B876
- Model: Pepwave MAX BR1
- Uptime: 10 days 3 hours (2017-09-01 12:42:01)
- Online: 8 hours 4 minutes (2017-09-11 08:24:32)
- First Appeared: 1 year 2 months ago (2016-06-27 19:50:20)
- History: [Event Log](#)
- Firmware: 6.3.3s032 build 2321
- Warranty Expiry Date: 2017-06-20 (Expired)
- Subscription Expiry Date: 2019-06-20

Liberia ☆

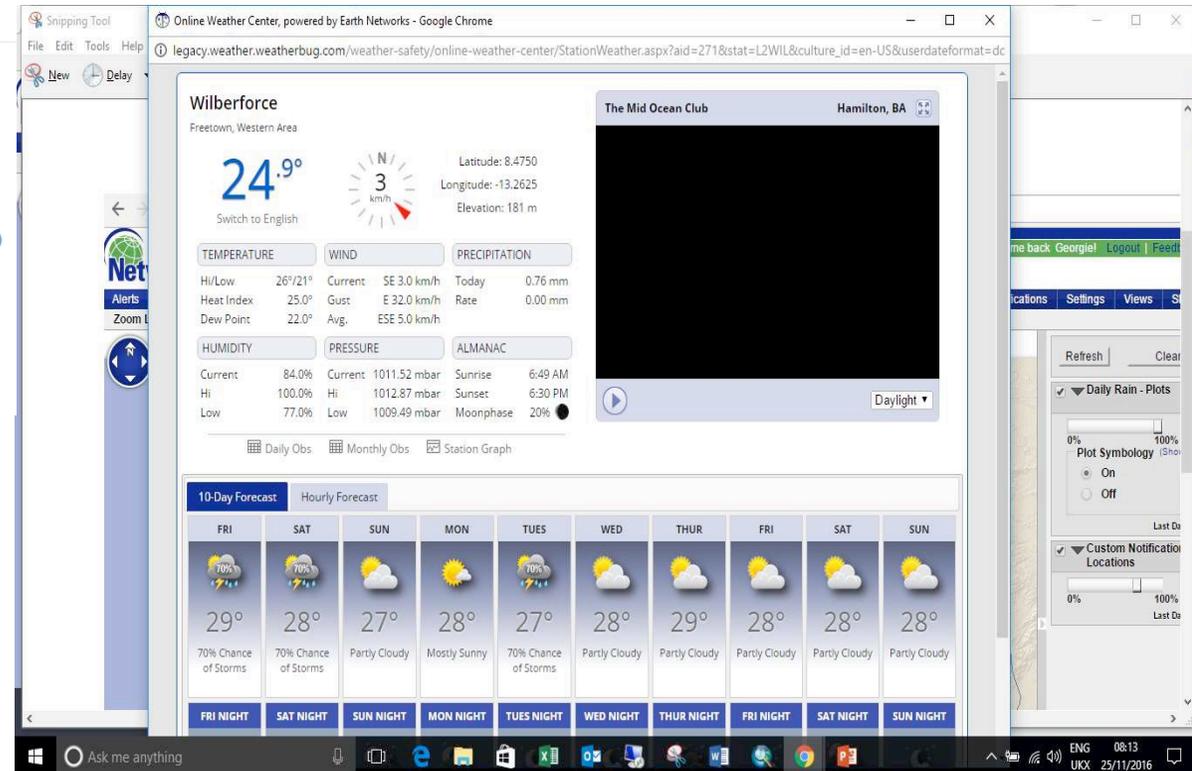
Online	Offline	Total	Clients
10 device(s)	1 device(s)	11 device(s)	10 online

Device List

Search devices... 11 device(s) Compact View

Status	Device Name	Tags	Wi-Fi Config	Product Name	Uptime	Online	WAN	Usage	Clients	Firmware	Last Config Updated
☆	L2BCN_B876		Device managed	MAX BR1 (HW2)	10 days 8 hours	Y	32.8 kbps	1	6.3.3s032 build 2321	6 months ago	
☆	L2BRC_E9A7		Device managed	MAX BR1 (HW2)	15 days an hour	-	-	1	6.3.2s026 build 2187	6 months ago	
☆	L2GBR_ED04		Device managed	MAX BR1 (HW2)	20 days 8 hours	Y	36.9 kbps	1	6.3.3s032 build 2321	7 months ago	
☆	L2KKT_DE9F		Device managed	MAX BR1 (HW2)	14 days 2 days	Y	23.6 kbps	1	6.3.3s032 build 2321	a month ago	
☆	L2MRV-BA30		Device managed	MAX BR1 (HW2)	6 days 8 hours	Y	30.7 kbps	1	6.3.3s032 build 2321	7 months ago	
☆	L2RBT_30E7		Device managed	MAX BR1 (HW2)	10 days 8 hours	Y	41.0 kbps	1	6.3.3s032 build 2321	6 months ago	
☆	L2RIA_037D		Device managed	MAX BR1 (HW2)	14 days 2 days	Y	130.0 kbps	1	6.3.3s032 build 2321	6 months ago	

Real Time Product view (Sierra Leone)



Online Weather Center, powered by Earth Networks - Google Chrome

legacy.weather.weatherbug.com/weather-safety/online-weather-center/StationWeather.aspx?aid=271&stat=L2WIL&culture_id=en-US&userdateformat=dc

Wilberforce
Freetown, Western Area

24°
Switch to English

Latitude: 8.4750
Longitude: -13.2625
Elevation: 181 m

WIND: 3 km/h

TEMPERATURE: Hi/Low 26°/21°, Current 24°
Heat Index 25.0°, Dew Point 22.0°

WIND: Current SE 3.0 km/h, Gust E 32.0 km/h, Avg. ESE 5.0 km/h

PRECIPITATION: Today 0.76 mm, Rate 0.00 mm

HUMIDITY: Current 84.0%, Hi 100.0%, Low 77.0%

PRESSURE: Current 1011.52 mbar, Hi 1012.87 mbar, Low 1009.49 mbar

ALMANAC: Sunrise 6:49 AM, Sunset 6:30 PM, Moonphase 20%

10-Day Forecast: FRI 29°, SAT 28°, SUN 27°, MON 28°, TUES 27°, WED 28°, THUR 29°, FRI 28°, SAT 28°, SUN 28°

70% Chance of Storms, 70% Chance of Storms, Partly Cloudy, Mostly Sunny, 70% Chance of Storms, Partly Cloudy, Partly Cloudy, Partly Cloudy, Partly Cloudy, Partly Cloudy

FRI NIGHT, SAT NIGHT, SUN NIGHT, MON NIGHT, TUES NIGHT, WED NIGHT, THUR NIGHT, FRI NIGHT, SAT NIGHT, SUN NIGHT

Cloud-based software solutions that:

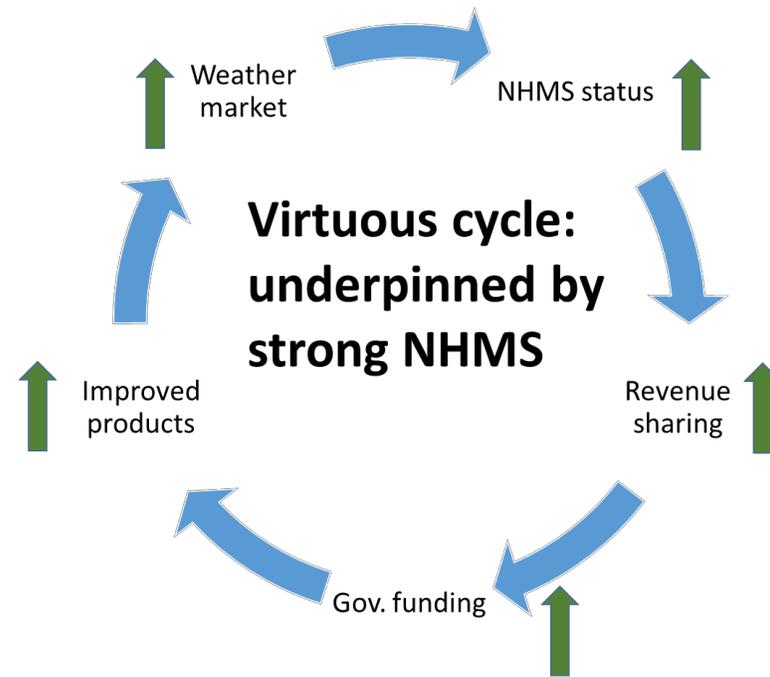
- Merge data from different hydrological and meteorological observation systems (automatic & manual)
- Inclusion of satellite products reduces reliance on in-situ observation systems (O&M)
 - satellite altimetry for river level monitoring
 - satellite derived soil moisture and evapotranspiration mapping
- Hydrological early warnings
 - Agricultural droughts, Hydrological droughts, Riverine flooding
- Water allocation planning module
- Visualization, information sharing (API)

Supporting system sustainability through public private partnerships

Financial and operational sustainability is a major challenge to the delivery of CI and EWS -- particularly to the poorest and most vulnerable. Partnerships with private weather companies can help.

- Private providers of weather observation/forecasting/ communication -- growing market reality.
- Multiple companies offer support to NHMSs and services to vulnerable populations – while preserving Met Service role and authority
- Revenue sharing opportunities from tailored weather services (eg aviation, agriculture, etc.) can support NHMSs

Resilient nations.



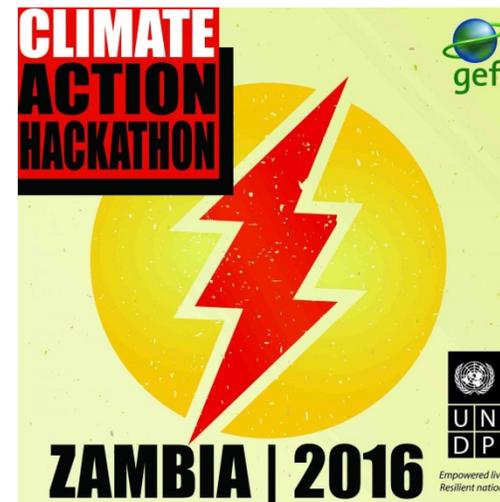
Partnerships will contribute more broadly to sustainable development goals and ensure long term sustainability.

Reaching users with information that is accessible, actionable and relevant

- HNI 3-2-1 service in Malawi
- First steps into PPP climate information marketing efforts in Liberia, Sierra Leone, Uganda
- Workshops on private sector development, PPP's, joint product development
- Market studies to assess potential
- Engagements with mobile providers

Climate Action Hackathon

- 2016 Zambia
- 2017 Uganda Hackathon (in cooperation with UCC)



Lessons Learned for Project Development



- **Timely, reliable, and localized weather and climate information is increasingly available**
 - a combination of low cost automated weather stations, satellite systems, and traditional equipment - can reach users through cellular and other services
- **Support for hardware procurement is necessary but not sufficient**
 - an end-to-end approach providing for maintenance, ongoing training/staff development, and “last mile” communication is essential.
- **Market studies show weather information has substantial commercial value**
 - particularly if aggregated regionally – but most African NMHSs still lack the capacity and data quality required
- **The potential for innovative public-private partnerships to deliver weather and CI services has great potential to contribute in Africa**
 - Many proven models from other parts of the world
 - a wide range of potential partners exist including private weather companies, cell phone companies, and NGOs (e.g., the “3-2-1” service from HNI)
- **Sustainability is key to ensuring long term impact and NMHS capacity to provide the ongoing services needed**
 - Revenue sharing is a partial answer to this need and public budget support for high quality weather services will be easier to obtain
 - Providing the public and private sector with timely, accurate and actionable weather, water and climate information products will help strengthen the relevance NMHS’s into the future.



Thank you

www.adaptation-undp/projects/cirda

www.undp-cirda.blogspot.com

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