



## Agricultural Resiliency







**Risk Reduction Measures**    **Responses to Climate Impacts**    **Adaptation to building resilience**

**“the capacity to absorb a shock” -Bosquet et al., 2016**

**“ability to develop capacities to prepare for, cope with and adapt, and potentially transform” -Schwartz et al., 2011**



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# Climate Change



**Extreme Heat**



**Drought**



**High  
Precipitation**





**Storms**

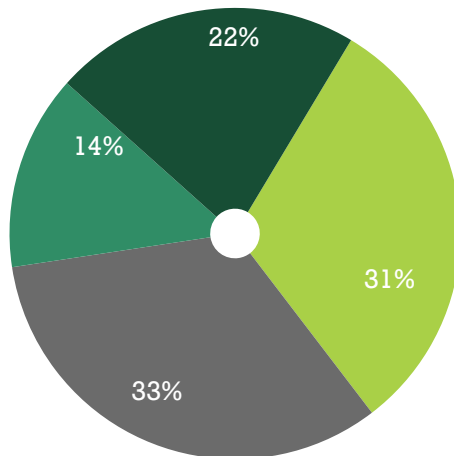


**Flooding**

# Do we have the data?

  
Data Available but  
not accessible

  
Data Available, but  
calculation required



  
Data Not Available

  
Data Available



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## Smart Technology Solution



### Automatic Weather Station

Provides data of weather in real time

Robust unit intended for longer period of data collection and can withstand extreme weather



### Local Weather Forecast

Local Weather Forecast

One farm, one local weather forecast

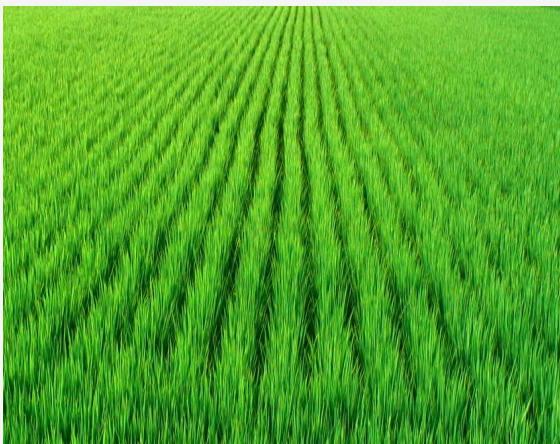


### Mobile App

Acts as data monitoring and Early Warning



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solutions provider. For more than 15 years, the company has been offering a wide range of sophisticated and high-quality Life science, Laboratory, Environmental monitoring equipment and systems, IT services and technical services.

We aim to provide the best-suited technology to our clients' needs. With continuous research and development, we connect technologies specifically by integrating various equipment and develop systems



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# Automated Weather Station

## Automated Weather Station

VS

- Data generation, archiving, and remote transmission of real-time data that could be accessed through mobile app or web display
- Can be integrated with a variety of sensors regardless of brand (could include Evaporation, soil moisture, and solar radiation)
- Withstands harsh weather conditions
- Collection of high degree of details of weather information

## Agromet Station

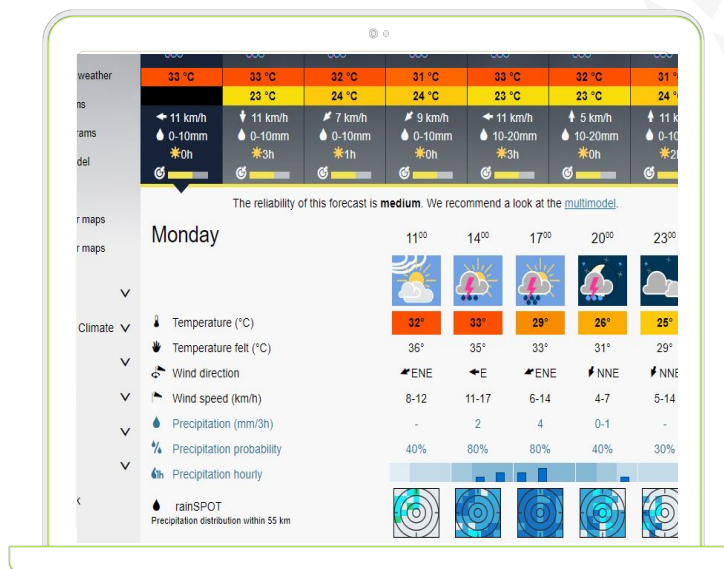
- Generates data only
- Limited sensors
- Short lifespan, most sensors have moving parts and vulnerable to damages from strong winds

# Localized Weather Forecast

## Benefits

High accuracy; more data from the AWS, the higher the accuracy of the forecast

Provides forecast on precipitation, temperature, wind in the next 3 hours





# Early Warning Network

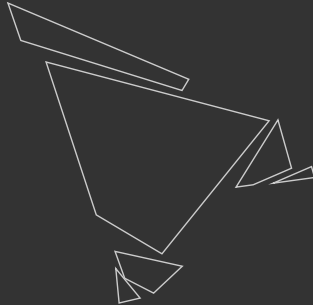
Data Monitoring



Data Transmission






Data Management and Early Warning



## Mobile App


Bringing data and early warning to the farmers

ver 6.0  

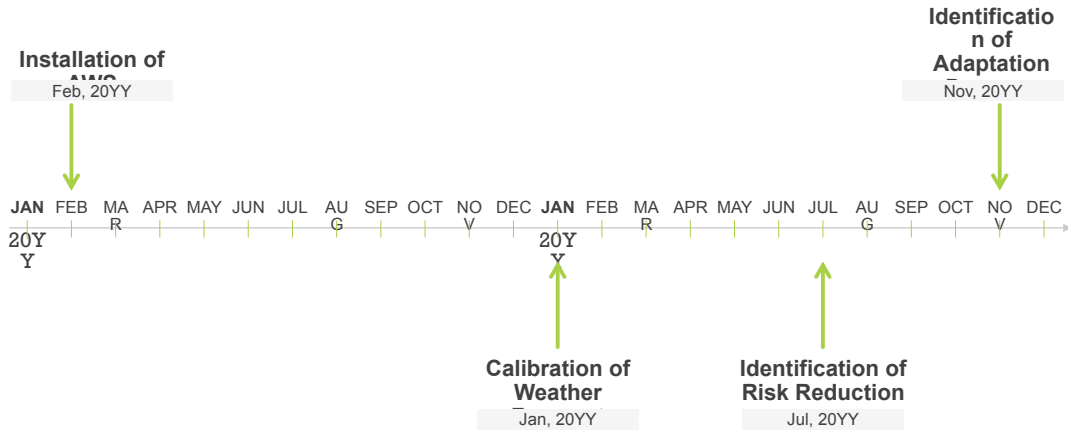


**Rain  
ALERT**

TAP TO CONTINUE

ORMOC CITY Weather Monitoring System Powered by 

# Agricultural Resiliency Timeline

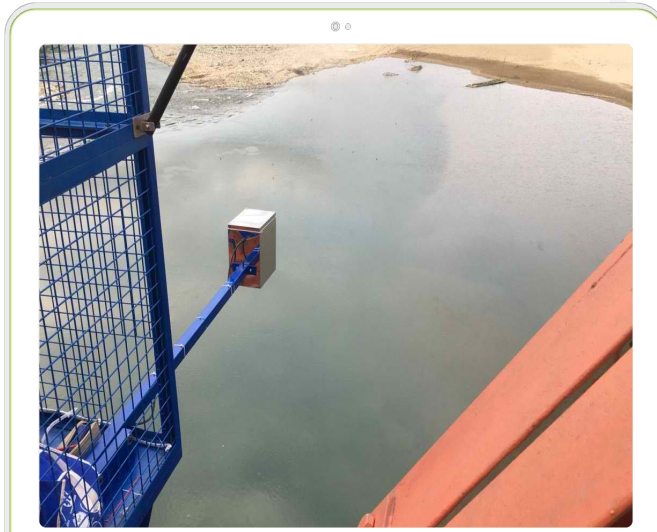


# Success Story

## Apayao

### Features

- Pilot installation
- Installed inside Cagayan River Basin
- Includes water level, rainfall
- Early Warning System
- Mobile App



## Success Story

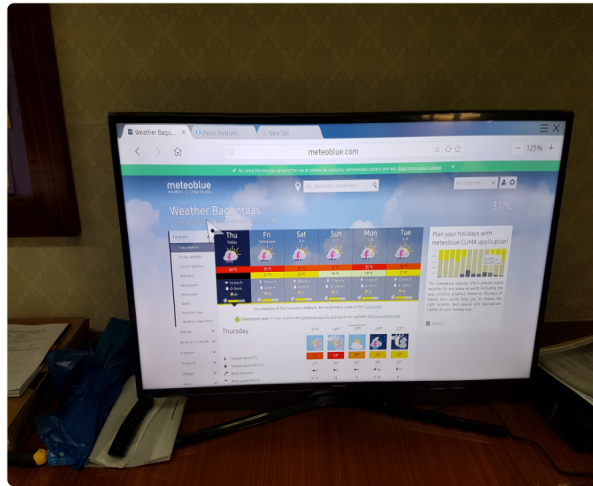
### NIA-Bukidnon

#### Features

Pilot station with localized weather forecast

Intended to provide irrigators (NIA) data for efficient and properly design irrigation system

Part of their Climate Change Adaptation Program



## Success Story

### Valenzuela City

#### Features

First Installation in an Urban Area

Provides both Mobile App for Early Warning and Local Weather Forecast



## Success Story

### Catanduanes State University Features

Installed inside the campus near the farm  
Intended for research purposes



## Success Story

### Ormoc City Features

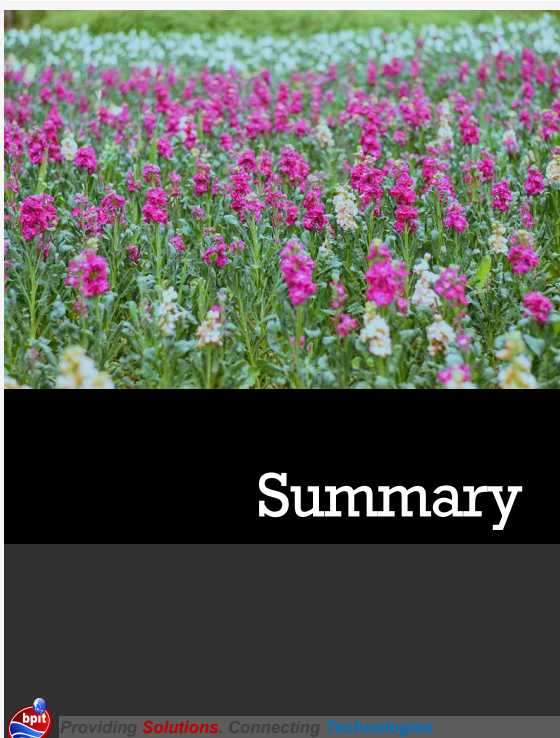
Latest installation of Early Warning System  
Ormoc has a history of heavy flooding  
Includes Localized Weather forecasting and Mobile App







- Agricultural Resiliency can be achieved through three steps: Risk reduction measures, identifying response to climate impacts, and identifying adaptation program.
- Climate Change affects farms direct through crop losses from extreme heat, drought, high precipitation, storms, and flooding.
- Measures are needed to be done to reduce the effects of these natural phenomenon.
- However, almost no data are available for the local farmers to use



- Automatic weather stations are more advantageous compared to Agromet stations mainly because it provides real-time monitoring and early warning for the farmers.
- Local weather forecast provides farmers increased yield through tactical application
- Mobile App gives farmer more hands on monitoring of local weather and early warning
- With the above smart technology applications, better adaptation programs and risk reduction measures can be established



## References

Bousquet, F., A. Botta, L. Alinovi, O. Barreteau, D. Bossio, K. ...  
Staver, C. 2016. **Resilience and development: Mobilizing for  
transformation. Ecology and Society**, 21(3): 40

Schwarz, A.-M., Bene, C., Bennett, G., Boso, D., Hilly, Z. ...  
Andrew, N. (2011). **Vulnerability and resilience of remote rural  
communities to shocks and global changes: Empirical  
analysis from Solomon Islands. Global Environmental  
Change**, 21, 1128–1140.

Bizikova L., Tyler, S., Waldick R., & Larkin, P. (2017). **Can we  
measure Resiliency? Reducing Agriculture's Vulnerability to  
Climate Change**, 8(5),. 1-5

