

Real-Time Weather Monitoring for Climate-Resilient Agriculture in the Philippines



INTRODUCTION: *Enabling Data-Driven Agriculture in a Changing Climate*

The Department of Agriculture (DA) in Region IV-A, Philippines, has always focused on innovation to encourage sustainable farming. As part of the AMIA Program (Adaptation and Mitigation Initiative in Agriculture), the DA launched a major project to establish a network of real-time weather stations in key agricultural areas. They partnered with Maedan Enterprise Inc. and selected Oizom Weathercom to provide reliable, real-time weather information to farmers, researchers, and policy-makers.



THE CHALLENGE: Tackling Agricultural Uncertainty with Reliable Data

Agricultural productivity in Region IV-A is greatly affected by microclimate changes, unpredictable rainfall, and extreme weather events. The Department of Agriculture faced several challenges:

- 1. Lack of Real-Time Microclimate Data:** Farmers needed local insights to improve planting schedules and irrigation.
- 2. Inadequate Early Warning Systems:** Traditional systems could not provide immediate alerts for weather changes affecting crop health.
- 3. Manual Recordkeeping:** Data collection and reporting were slow, often inaccurate, and hard to integrate into central platforms.
- 4. Infrastructure Exposure:** Outdoor installations need weatherproof, tamper-proof hardware for continuous monitoring in remote areas.

THE SOLUTION: A Network of Oizom Weathercom Stations

To address these issues, 11 Weathercom stations were set up across Lobo, Batangas, and nearby areas. Each system included:

- 1. Real-time Sensor Suite:** Monitoring temperature, humidity, rainfall, solar radiation, wind speed and direction, and barometric pressure.
- 2. Cloud-Based Platform:** Easy data visualization through Oizom's Envizom platform, accessible in real time on various devices.
- 3. Relay and API Integration:** Smooth connectivity with DA's internal platforms and alert systems.
- 4. Ruggedized Enclosures:** Custom-built weatherproof enclosures and fences for long-term and low-maintenance outdoor use.
- 5. Independent Station Operation:** Each Weathercom station operates autonomously and transmits data to the centralized Envizom dashboard, ensuring uninterrupted insights.
- 6. Solar-Powered Connectivity:** Each unit runs on solar energy with battery backup and communicates through 4G or LoRaWAN.

This network of autonomous stations created a high-resolution environmental sensing framework to deliver localized insights for smarter agriculture and policy-making.



**INSTALLATION
DETAILS**

**11 UNITS
of
WEATHERCOM**

THE TRANSFORMATION: Empowering Farmers and Policy-Makers Alike

The installed systems triggered a significant change in how agriculture is managed:

- 1. Climate-Resilient Crop Planning:** The department now receives real-time weather updates to make better planting, irrigation, and harvesting decisions.
- 2. Improved Risk Management:** Timely alerts about extreme weather help reduce crop losses from storms, droughts, or heavy rain.
- 3. Policy-Backed Insights:** DA incorporates the gathered data into its regional dashboards, leading to better subsidy planning and responses.
- 4. Farmer Education and Trust:** Field officers use Envizom dashboards to teach farmers about changing patterns and to encourage the use of scientific methods.

BROADER IMPACT: Weather Data for National Sustainability

What started as a regional project is now a model for climate-smart agriculture across the Philippines. The initiative contributes to:

- 1. The AMIA Program's Long-Term Vision:** Equipping agriculture with tools to deal with climate change.
- 2. UN SDG Goals:** Promoting food security, sustainable practices, and climate action through digital changes.
- 3. Community Trust:** Farmers feel more assured in their seasonal decisions, knowing they rely on data, not guesswork.

CONCLUSION: From Forecasting to Future-Proofing

With a strong partnership with Maedan Enterprise Inc. and Oizom's reliable weather-monitoring technology, the Department of Agriculture, Philippines, has successfully transitioned to data-driven, resilient agriculture. With Weathercom's continuous environmental insights, farming communities in the Philippines are now better prepared, more productive, and ready for the future.

Oizom is a company specializing in environmental monitoring solutions. They offer products to monitor air quality, weather conditions, and other environmental factors. Utilizing advanced sensor technology and data analytics, Oizom aims to provide actionable insights for construction, industrial compliance, and community awareness. Their solutions can be applied in various sectors including government, industries, and community initiatives.