Case Study

EARLY WARNING SYSTEM OF SÃO TOMÉ AND PRÍNCIPE: ACCURATE HYDROMETEOROLOGICAL DATA TO PROTECT FARMERS AND FISHERS

CHALLENGE

Africa's second-smallest country, São Tomé and Príncipe lie about 250km off Gabon's western coast. Its 187,500 inhabitants rely primarily on fishing activities and agriculture.

Climate change has brought dangerous weather conditions to the country.

Storm surges, torrential rains, flash floods, and increasing incidents of dense fog and strong winds have created hazardous conditions for fishers, farmers and people living in rural coastal areas.

In conjunction with the Directorate for Energy, the National Institute of Meteorology wanted to develop more reliable early warning systems to monitor these increasingly severe hydrometeorological conditions.

Both institutions required guaranteed, tailored weather and climate bulletins, including colour-coded alerts, advisories for farmers, plus observations and warnings about floods, drought, and extreme meteorological events.

Adasa has supplied and commissioned, in other solutions, two synoptic weather stations in Sao Tome and Principe.

ADASA'S SOLUTION

As part of a regional Early Warning System initiative implemented across 10 African countries, Adasa's remit **included the supply and commissioning of two synoptic weather stations**, 14 agrometeorological stations, a dozen hydrological automatic stations, two ceilometers, and a centralised database replicated for the beneficiary institutions.

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Factory calibrated sensors included:

- Wind speed and direction.
- Air temperature.
- Relative humidity.
- Atmospheric pressure.
- Amount of precipitation, its duration and intensity.
- Soil moisture and temperature sensor.
- Solar radiation.
- Water level and water quality: turbidity, conductivity, pH, and temperature.

Adasa's participation in the project increased the national coverage of meteorological observations from 20% to 60%.

RESULT

The project **increased national meteorological coverage from 20% to 60%**.

This vital network boost provided the country with the necessary data provision tools to build an **early warning system, strengthening responses to natural disaster** and increasing the local community's resilience to events.

A combination of collected data with socioeconomic and environmental information **has reinforced São Tomé's decision-making processes**.

The scheme has also **increased the country's relevant national institutions' disaster** preparedness and climate risk capacity.

CLIENT

The National Institute of Meteorology provides weather forecasts, warnings of hazardous weather, and assists the Democratic Republic of São Tomé and Príncipe administrations with civil defence tasks.

The National Directorate for Energy contributes to the design, promotion, and evaluation of energy and geological resource policies and natural resource management for the country's sustainable development.

Both institutions count with centres in both São Tomé and Príncipe islands.

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