GeoAlerta AI

CLIMATE INTELLIGENCE

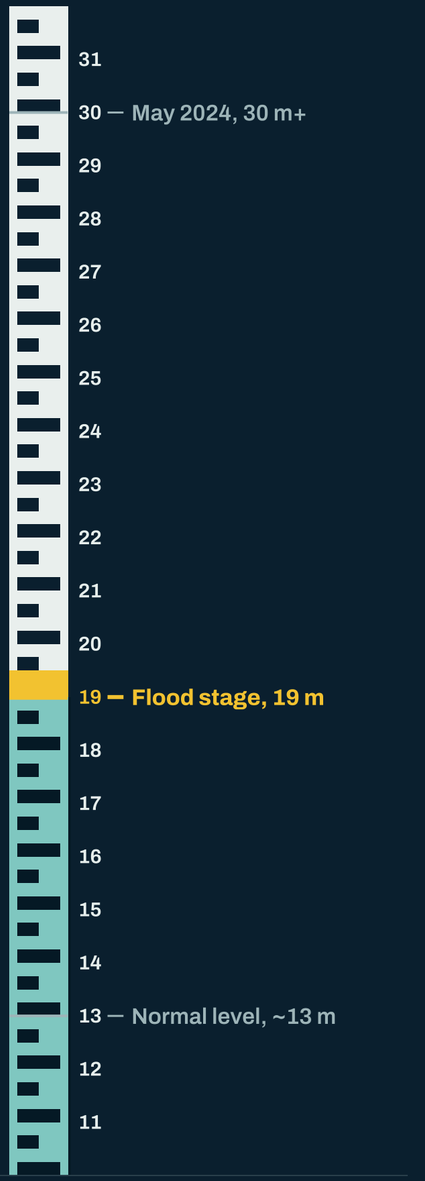
Climate resilience intelligence for cities,
starting with river floods.

Evidence first. Uncertainty visible. Humans in control.

SMART CITY EXPO WORLD CONGRESS

We'll be in Barcelona looking for new business.

Smart City Expo World Congress, 3–5 November 2026, Fira Gran Via



AGGILLI INTELLIGENCE

May 2024: the evidence existed, but not in one place.

478

of 497 municipalities in Rio Grande do Sul were affected

2 million+

people were affected and more than 180 lost their lives

30 m+

on the Taquari gauge at Lajeado and Estrela, the highest on record. Flood stage is 19 m.

The data existed: river gauges, rain stations, satellites, risk maps, census tracts.
It sat in different systems, at different update rates, with different reliability.
Municipal teams had to combine it by hand, under pressure, at night.

One evidence layer. People make the decisions.

1

Collect

31 catalogued sources: SGB and ANA river gauges, Civil Defense sensors, GOES-19 and CPTEC rain, ECMWF ensembles, SAR coverage, IBGE census, terrain.

2

Check

Late, future, duplicated or inconsistent readings are rejected. Missing data is never turned into zero.

3

Estimate

A hybrid model forecasts the river level 1 to 6 hours ahead, with a 90% interval and the chance of crossing 19 m.

4

Prioritise

The forecast is crossed with official risk sectors, terrain, population and hospitals, so teams see who may be exposed first.

Every number on screen carries its source, its age and its uncertainty. When critical data is missing or late, the system says so instead of guessing.

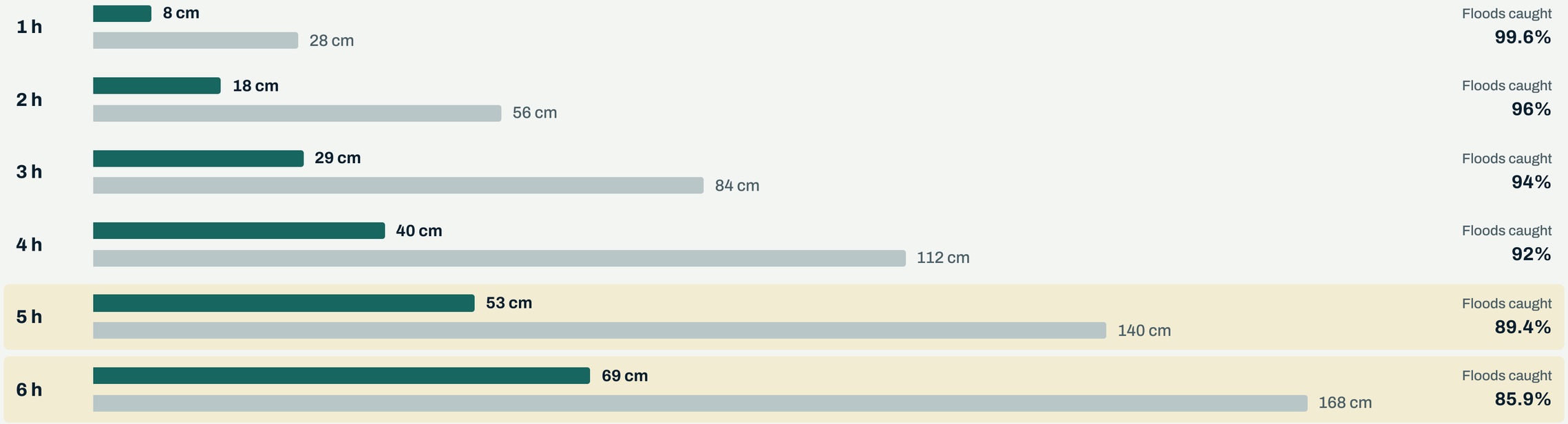
What runs today

- River gauge ingestion with quality gates
- 1–6 h river-level forecast with 90% interval
- Chance of crossing the 19 m flood stage
- Official SGB risk sectors for Lajeado and Estrela
- Population, hospitals and terrain exposure layers
- 3D planning digital twin on 30 m terrain
- Readiness checks that fail closed
- Running on AWS, release 0.50.1



Tested on four real floods it had never seen

Average error of the river-level forecast, in metres



Up to 3 hours ahead the model caught at least 94% of flood-stage moments in every test flood. At 5–6 hours that drops to 86%, so those horizons support human screening only. The 24-hour horizon stays blocked. This is retrospective research evidence, not operational validation.

Proving ground: Lajeado and Estrela

41,950

people potentially exposed in the planning scenario

2,215

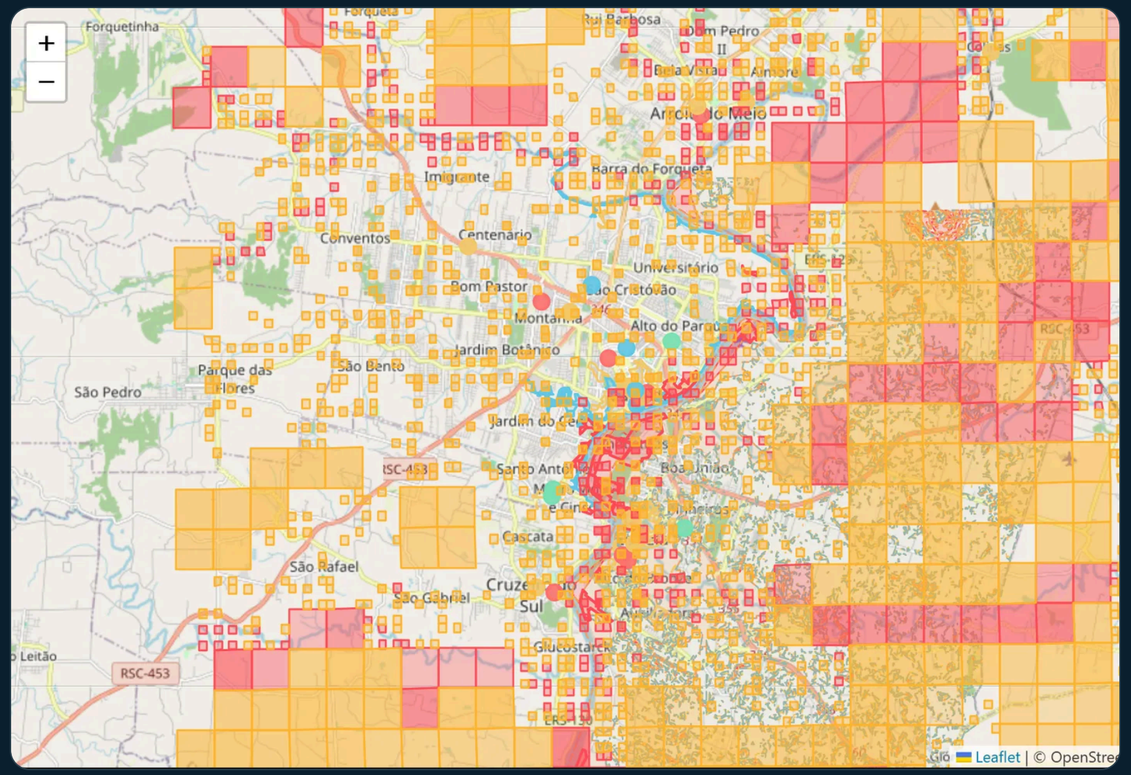
priority population cells from the 2022 census grid

57

official SGB high and very-high risk sectors, field-updated in 2025

47

official flood records since 1991 kept for validation, never as live input



Planning-scenario estimates from the current release (v0.50.1). They describe exposure to plan for, not people confirmed in danger.

Safety is part of the product

- ✓ Missing or late critical data never becomes “zero risk”.
- ✓ Uncertainty and the source of every value stay visible.
- ✓ Physical hazard, exposure and response priority are kept apart.
- ✓ Context sources never silently become an operational authority.
- ✓ Warnings and evacuations stay with Civil Defense and the authorities.

> GeoAlerta AI Sul is not an official public warning system. Public warnings, evacuation and road closures remain with Civil Defense and competent authorities.

From prototype to platform in 2026

Early 2026

First prototype: trend-based river forecast for one gauge.

Jul 2026

Hybrid ML model, 189 indicators, backtesting without data leakage.

Aug 2026

Four-flood validation, territorial exposure, digital twin, AWS production.

Next

Prospective validation with a municipal team, then more basins in southern Brazil.

What we want to unlock

Municipal and regional pilots

Cities exposed to river floods that want to test the method with their teams.

Pre-seed and seed investment

ClimateTech, GovTech and impact investors backing validation milestones.

Non-dilutive funding

Climate-resilience grants and public innovation programmes.

Cloud and GPU capacity

Infrastructure credits for weather ensembles and geospatial AI.

Hydrology and weather data

Gauge networks, radar and forecasts that strengthen the evidence.

Research partners

Prospective validation with universities and research centres.

Let’s talk in Barcelona

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