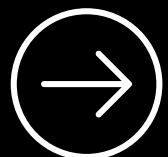


IMPACT REPORT  
**REDUCE WATER LEAKS  
WITH GEOAI**



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## DRIVE CHANGE

# WATER MANAGEMENT

Geospatial data together with artificial intelligence (GeoAI) allow accurate data-based decisions to be made. Predict water leaks to focus investment on modernizing the most vulnerable points of the network.

## OVERCOME INCREASE IN COSTS

Water management companies have a clear challenge: reduce water losses. 30% of the water that circulates through the distribution network around the world. This translates to more than 32 billion liters per year.

Identifying water leaks before they occur should not be an obstacle to expanding the supply network, reaching the entire population. However, the obsolescence of the supply network, together with the rise of extreme weather events such as drought, make unregulated water losses increasingly frequent. Accurately predicting where water leaks will occur is key.

Many water management companies plan to multiply the budget by 5 to maintain and replace the pipes in the distribution network. This budget increase is neither realistic nor sustainable in the current economic situation.



# WATER STRESS

# WATER LEAKS

In Spain alone, 650 billion liters are lost each year before reaching the water supply and sanitation network. Million-dollar losses that extend globally in a context of water stress that already affects 50% of the world's population.



## 30%

AVERAGE PERCENTAGE OF  
WATER LOST IN THE  
SUPPLY NETWORK AT A  
GLOBAL LEVEL



## 2.8KM

THE LEAKS REPRESENT  
MILLIONAIRE LOSSES  
FOR THE SECTOR. 2,800  
MILLION EUROS LOST  
EACH YEAR.

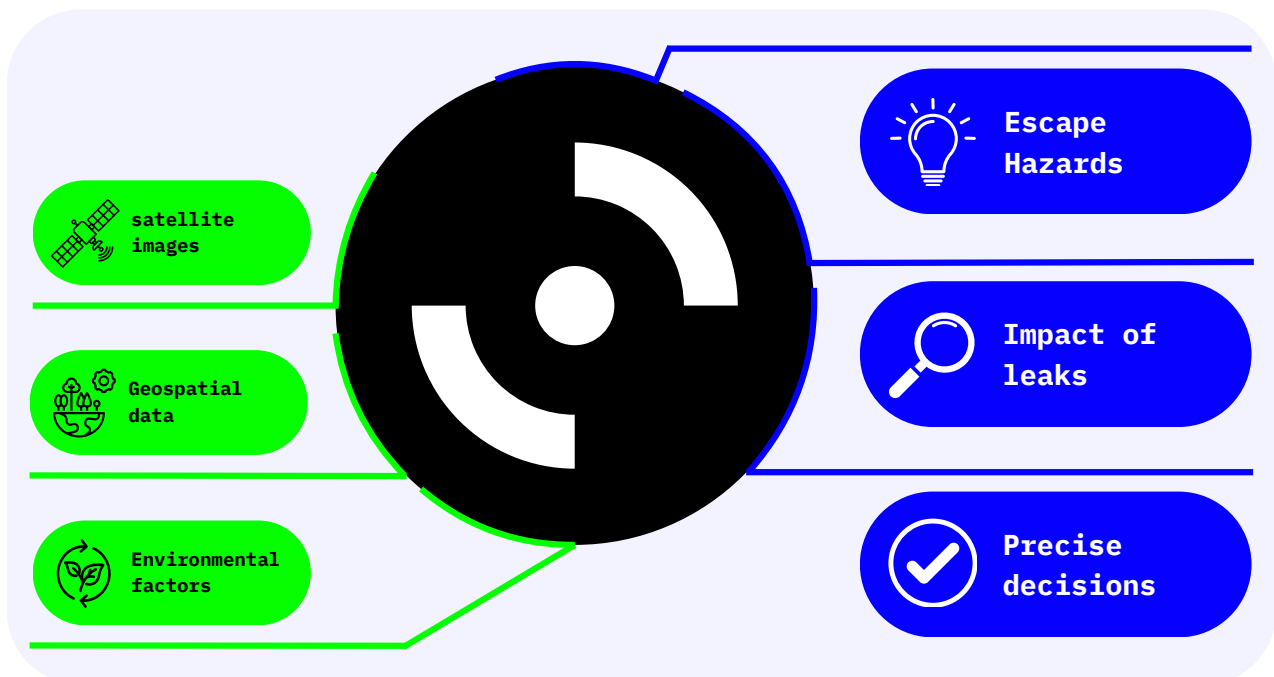


## 25M

LOST WATER COULD  
SUPPLY A PERSON FOR  
25 MILLION YEARS.

# THE TECHNOLOGY PROCESSING DATA

Convert data into information. At Agforest we combine geospatial data and information about the supply network. We process the information with an artificial intelligence (AI) algorithm capable of predicting water leaks.



## VALIDATE DATA TO ENSURE TRUST

At Agforest we carry out verifications with field work to ensure that the delimitations made for the prediction of water leaks are rigorous.

This process includes two fundamental aspects: an initial validation and field confirmation of aspects with a high risk of leakage. This is combined with non-invasive assessment of conditions that promote water losses.

We work with a team of engineering and analysis specialists to prioritize areas that require field work or interventions, making assessments 6 times more effective than usual.



# MITIGATE WATER STRESS, TAKE DECISIONS

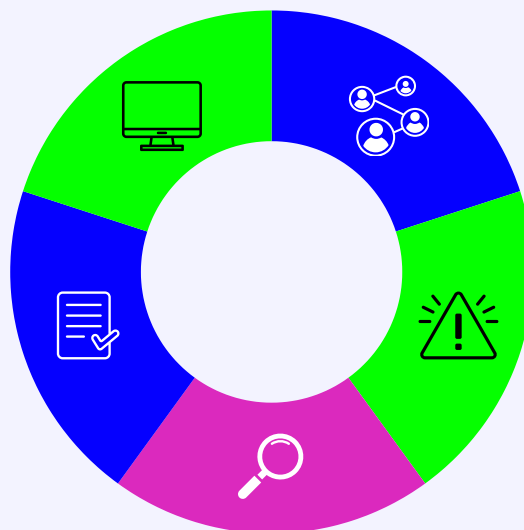
Iteration is key to achieving the optimal result in predicting water leaks in the supply network. Geospatial data at the service of reducing water stress.

## Data collection and distribution.

- Confirm network
- Get environmental data
- Confirmation of variables
- Receive customer data

## Planning and transformation

- Rerun the model using validation data.
- Recommendations for risk-based leak detection and condition assessment
- Capital planning and replacement program.
- Evaluate existing practices and implement strategic changes.



## Field work

- LOF validation from the desktop
- On-site LOF validation
- Non-invasive condition assessment or leak detection
- Determining Sage Accuracy
- COF review on site

## External and environmental impacts

- Earth movement
- Vegetation
- pH and soil type
- Slope and topography

## Geospatial data

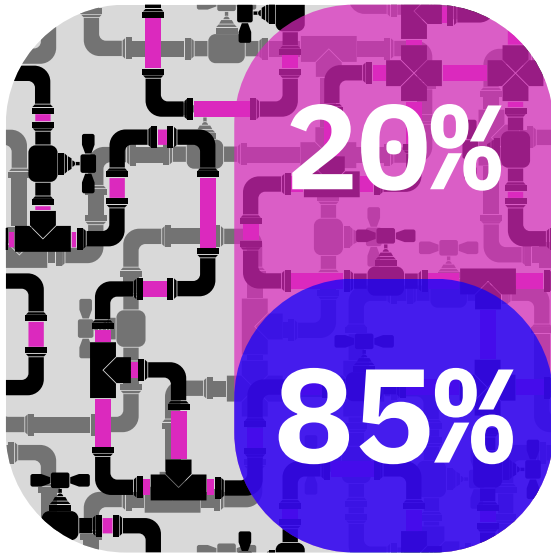
- Mapping Probability of Leak (LOF), Consequence of Leak (COF) and Criticality Metrics
- Map layers for additional information: critical infrastructure, land use type, transportation, etc.
- Dashboard, organize and manage data.

## GEOAI TO MITIGATE WATER STRESS

In this context, the prediction of water leaks through the application of geospatial data and artificial intelligence (GeoAI) is a trend that has only increased in recent years. Reduce leaks by 55% and predict 85% of leaks that will affect the oldest 20% of the supply network.

Based on the average price of water, the losses amount to more than 39 billion euros. The application of GeoAI predictive models would reduce these losses to 17.5 billion dollars, a more than remarkable figure.

# SEGMENT THE NETWORK TO PREDICT



## REDUCE LOSSES BY UP TO 55%

Analyze the entire supply network. Identify the 20% of locations with the highest level of risk. GeoAI with the ability to predict 85% of leaks.

## COMPREHENSIVE RISK- BASED PREDICTIONS

Failure probability and consequence predictions, along with criticality predictions, are displayed on our platform dashboard along with a fully digitized map of your network.

Allows you to drill down into risk metrics by pipe condition, probability of failure (LOF) percentiles, material, and age.

We collaborate with our clients to validate the accuracy of their knowledge. We introduce validation data into our risk models to further increase certainty. The more refined data we feed into the model over time, the more accurate the insights will be, allowing for decisions.

# GEOAI TO MITIGATE WATER STRESS

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**PYME INNOVADORA**

Válido hasta el 24 de mayo de 2027



GOBIERNO  
DE ESPAÑA

MINISTERIO  
DE CIENCIA, INNOVACIÓN  
Y UNIVERSIDADES