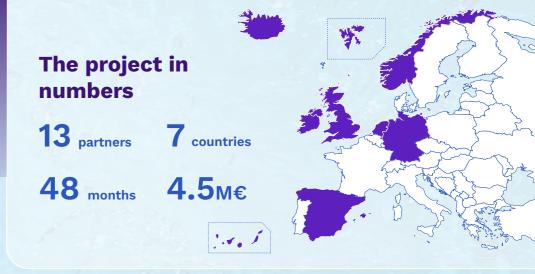
Uncovering life at the limits

Exploring aquatic extremophiles for sustainable innovation

XTREAM is a European project to harness biology's most resilient adaptations and their potential for bio-based production. Our goal is to make biodiscovery efficient, affordable, and environmentally responsible.



Targeted sampling of extreme habitats

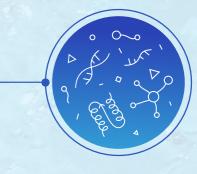
Accessing the harshest environments on earth

We use state-of-the-art technology to **minimise environmental impact** while **maximising access** to remote aquatic ecosystems.

Optimising biodiscovery

Smarter tools for deeper insights

Our hybrid approach integrates **innovative tools and methodologies** for efficient and responsible bioprospecting of unique life forms.



Conventional sampling to identify promising strains

Legacy samples to reduce new extraction





molecular discovery

for efficient

bioprocess design

screening

Metabolic engineering

Microfluidics to

streamline organism

Computational

models and AI for



- Robust enzymes
- Virulence factors and inhibitors
- Bioactive drugs and metabolites
- Resistance genes
- Antimicrobial compounds
- Commodity extremophile strains



Arctic polar regions

- ↓ Temperature
- ↓ Nutrient availability

Acid drains

- **↓** pH
- ↑ Metal concentration
- ↑ Pollutant concentration
- ↑ Oxidative damage

↑ Temperature

Geothermal springs

perature

From nature to market

Boosting scalable biomanufacturing

We deliver **industrial solutions** rooted in extremophile biology, while promoting **ethical innovation**, this is ensuring our technologies are not only effective but also responsible and aligned with societal and environmental values.



Personal care products



Green industry



Agriculture & food



Biomedicine



Nutraceuticals



- ↓ Temperature
- ↑ Pressure
- ↓ Nutrient availability

Marine solar salterns

↑ Salinity ↑ UV light exposure















Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the Research Executive Agency (REA). Neither the European Union nor the granting

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