

From Strain to Market: A Risk-Informed Framework for Microbial Food Safety



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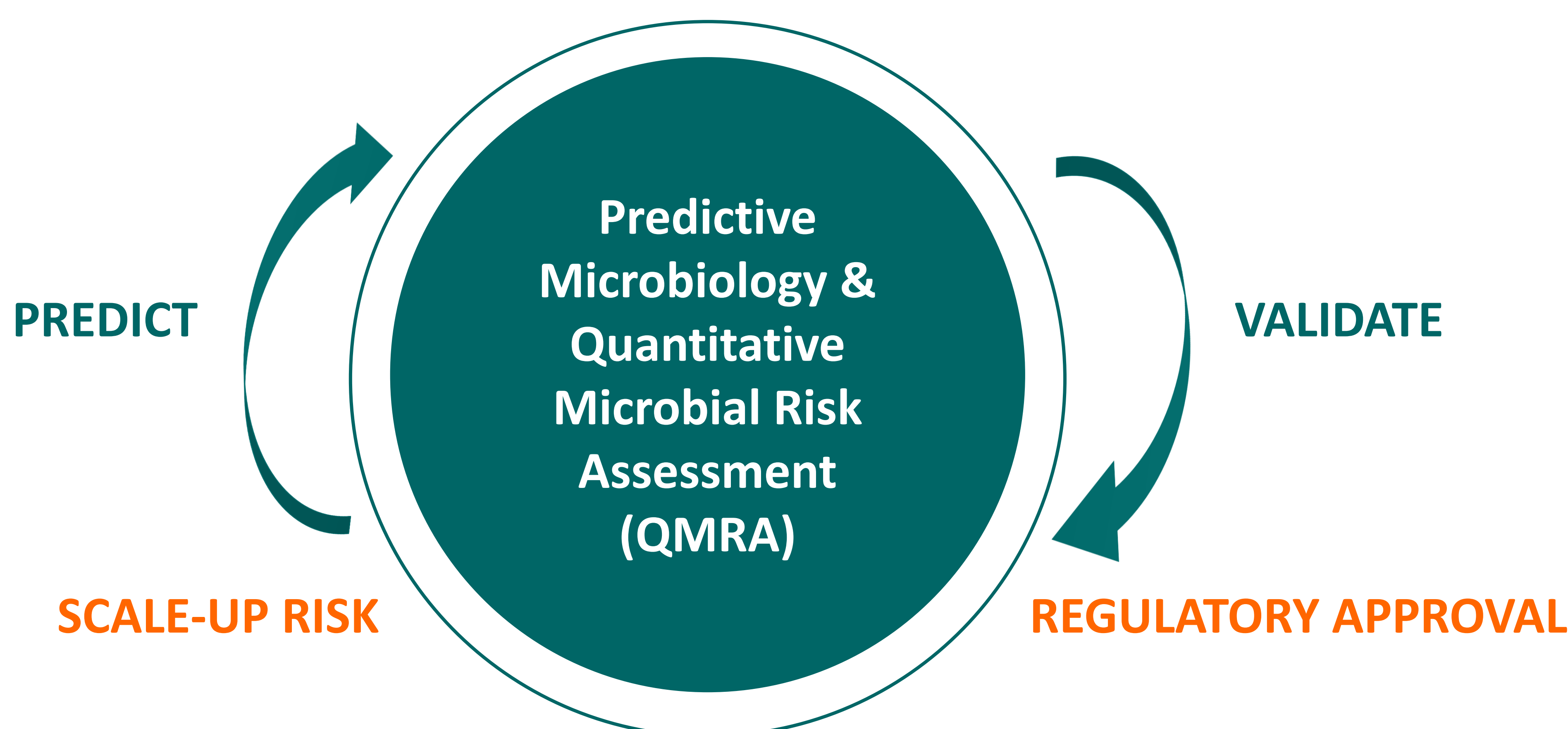
The challenge

Why safety should be integrated across the pipeline:

Microbial food innovation introduces dynamic safety challenges that evolve from strain selection to industrial production and regulatory approval

- Strain variability
- Process-induced risk
- Regulatory uncertainty

Integrated Risk-Informed Approach



Why this framework fits Mic2Food

- Connects **strain selection**, **process development** and **regulatory readiness**
- Supports early identification of **safety bottlenecks** across the innovation pipeline
- Can be adapted for **training**, **educational material** and **dissemination activities**

This conceptual framework integrates predictive microbiology across the microbial food development pipeline and supports **QMRA-informed decision-making** as data mature

Application Example: DELICIOUS

(Horizon Europe) – WP4 

- Risk-based strain evaluation
- Predictive modelling in fermented plant-based matrices
- Process validation support
- Regulatory data support



Contribution to Mic2Food

- **WG1** – Risk-informed strain screening
- **WG2** – Anticipation of scale-up safety risks
- **WG5** – Support to regulatory readiness
- **WG6** – Training, educational material & dissemination

Towards harmonised safety strategies in European microbial foods