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HOLiFOOD

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Opening and welcome

HOLiFOOD – general info

- ▶ Innovative holistic food safety early warning and risk assessment system
- ▶ Grant agreement ID: 101059813
- ▶ 1/10/2022 – 30/09/2026
- ▶ EU contribution: € 6 mln
- ▶ Coordinated by Stichting Wageningen Research (WR)
- ▶ HORIZON-CL6-2021-FARM2FORK-01-16 - Identification, assessment and management of existing and emerging food safety issues

HOLiFOOD consortium



supported by
Wageningen University & Research,
Radboud University and Radboudumc



University of
Veterinary Medicine
Budapest



Project objectives and aims

Improve the integrated food safety risk analysis framework in Europe to ...

1. meet future challenges arising from Green Deal policy driven transitions in particular in relation to climate driven changes,
2. contribute to the United Nations' Sustainable Development Goals (SDG 2, 8, 9, 12, 15) and
3. support the realization of a truly safe and sustainable food production



Emerging risks

WHAT IS AN 'EMERGING FOOD RISK?'

A risk resulting from a newly identified hazard to which a significant exposure may occur, or from an **unexpected new or increased significant exposure** and/or susceptibility to a known hazard.



INCREASED EXPOSURE
TO KNOWN HAZARD



NEW
HAZARD



INCREASED SUSCEPTIBILITY
TO HAZARD

Example: mycotoxins

Factors contributing to mycotoxin production:



**INCREASED
TEMPERATURE
& HUMIDITY**



**EXTREME
WEATHER
EVENTS**



**ALTERED
PRECIPITATION
PATTERNS**

Mitigation strategies:



**CLIMATE-RESILIENT
AGRICULTURAL PRACTICES**



**ENHANCE STORAGE &
DRYING TECHNIQUES**



**DEVELOP EARLY
WARNING SYSTEMS**



**SUSTAINABLE
FARMING PRACTICES**

Supply chains

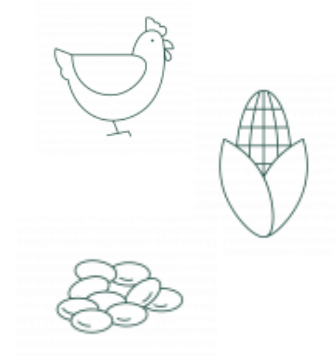


Three selected supply chains:

▶ Poultry [chicken]

▶ Cereals [maize]

▶ Legumes [lentils]



‘Drivers of change’ may act as modifiers of effect on the onset of emerging risks



Drivers of change

Science & Technology

Innovation
Digitalisation

Geo-politics

Globalisation
International trade

Socio-economics

Consumer preference
Income distribution

Demographics

Population growth
Urbanisation

Environment

Climate change
Natural resources

Socio-cultural

Social values
Food choices

Policy

Food security
Regulation

Cloud computing

AI & Big Data

AI & Big Data

AI & Big Data

Outcomes

Data collection, processing and visualisation from a number of actors throughout the food chain, using a system approach.



System approach



System approach



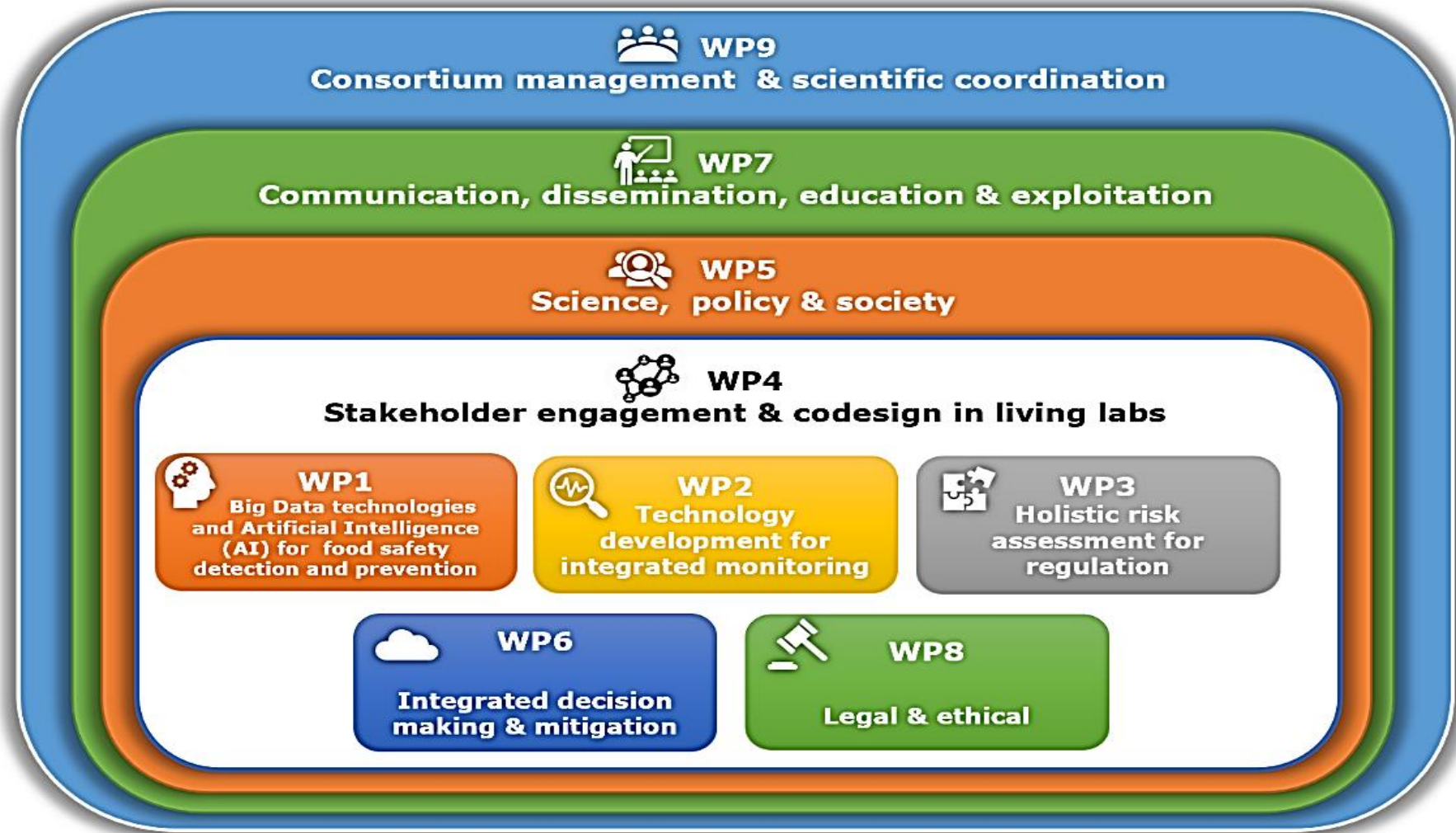
System approach

Food safety emerging risks system

Food security



WP structure



Some project highlights



Data and models deployed on infrastructure



A sensitive and compact on-site and real time quantitative detection of foodborne and clinical pathogens by on-chip qPCR



Non-linear responses via agglomeration and aggregation of gold nanoparticles for surface-enhanced Raman spectroscopy (SERS) coupled with chemometric analysis for chlorpyrifos detection

About HOLiFOOD

Overall objective: to improve the food safety risk analysis framework in Europe
Specifically, to develop:



Early Warning and Emerging Risk Prediction Systems to identify and monitor existing and emerging food safety risks in the food chain



Targeted and non-targeted detection methods for existing and emerging hazards



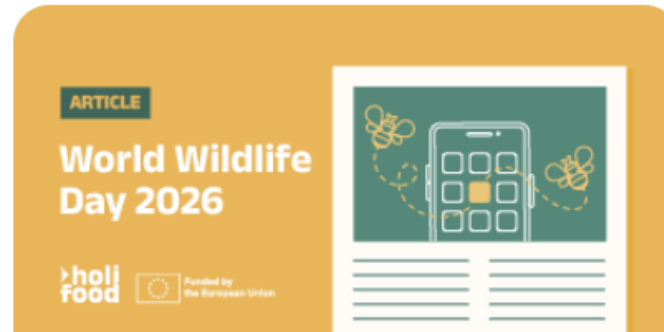
Holistic risk assessment methods and tools to support regulation in a changing global environment



Improved data and knowledge sharing infrastructures that will be able to power an ecosystem of decision support systems



How to use a holistic approach to food safety



Tiny Guardians Under Threat: How Apps Are Helping to Protect Our Honeybees



Prototype on chip qPCR tested

See our website for continued updates: <https://holifoodproject.eu/>

Enjoy the symposium!



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