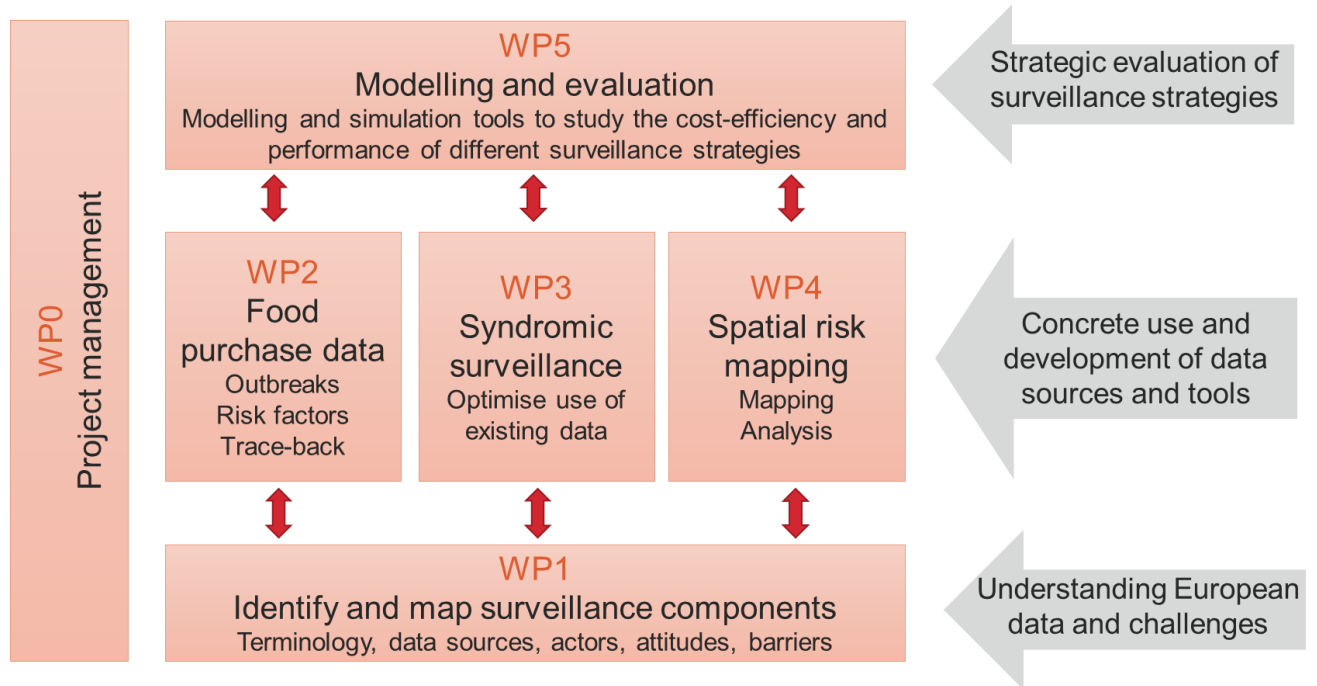# Overview NOVA WPs, tasks, deliverables, milestones

Novel approaches for design and evaluation of cost-effective surveillance across the food chain

- 19 partner institutes, 10 countries, 3 years, 2018-2020, 4 M€
- *SVA, SSI, DTU, ANSES, Sciensano, INIA, NVI, NIPH, RIVM, APHA, BfR, UCM, RKI, FLI, SpFrance, ISS, IZS, PHAS, PHE*

WP0: Coordination and project management

T-0.1 Project management
T-0.2 Organise annual assemblies
T-0.3 Economic reporting and financial management

Deliverables

Ref	Title	Due month
D-JRP6-0.1	Documentation of consortium assembly and steering committee meeting	M3
D-JRP6-0.2	Documentation of consortium assembly and steering committee meeting	M20
D-JRP6-0.3	Documentation of consortium assembly and steering committee meeting	M35

Milestones

Ref	Title	Due month
M-FBZ1.NOVA.1	Consortium assembly and steering committee meeting	M2
M-FBZ1.NOVA.13	Consortium assembly and steering committee meeting	M19
M-FBZ1.NOVA.26	Consortium assembly and steering committee meeting	M34

WP1: Food chain surveillance mapping

T-1.1 Definition of a joint food borne zoonosis surveillance terminology
T-1.2 Mapping of surveillance: data, regulatory framework, key stakeholders, opportunities and barriers

Deliverables

Ref	Title	Due month
D-JRP6-1.1	Glossary of terms based on a common food borne zoonosis surveillance terminology	M24
D-JRP6-2.7	Mapping of food chain surveillance across countries	M35

Milestones

Ref	Title	Due month
M-FBZ1.NOVA.15	Glossary of surveillance terminology for foodborne surveillance is disseminated.	M24

WP2: Analysis of food purchase data

T-2.1 Data availability and barriers
T-2.2 Food purchase data for outbreak investigations
T-2.3 Big data analysis of risk factors for sporadic disease
T-2.4 Food distribution data for hospital outbreaks
T-2.5 Trace back and food risk mapping

Deliverables

Ref	Title	Due month
D-JRP6-2.3	Structured review of the field.	M5
D-JRP6-2.1	Description by member state of data sources, agreements and organisations (e.g. retailer chains).	M12
D-JRP6-2.8	Epidemiological analysis of existing surveillance data regarding ha-FBO and foods involved.	M12
D-JRP6-2.5	Data infrastructure built, electronic informed consent tool in function.	M12
D-JRP6-2.2	Description by member state of barriers for use: legal, political, economic, practical and technical obstacles.	M22
D-JRP6-2.9	Studies using the German results extended to the partner institutes.	M24
D-JRP6-2.4	Assessment of the use of the method as an analytical tool, rather than merely hypothesis-generation.	M30
D-JRP6-2.6	Case control study of food risk factors for sporadic campylobacter infections.	M34
D-JRP6-2.10	Description and documentation of software, development of tutorials and training material.	M34

Milestones

Ref	Title	Due month
M-FBZ1.NOVA.4	Pilot, data availability.	M9
M-FBZ1.NOVA.8	SOP, best practice description.	M22
M-FBZ1.NOVA.9	Development of method to handle time and GTIN.	M17
M-FBZ1.NOVA.10	Prospectively calculation of disease association measures and retrospective analysis of food consumption patterns in hospitals.	M24
M-FBZ1.NOVA.21	Integration into FoodChain-Lab, release as cloud service.	M27
M-FBZ1.NOVA.22	Case control study of food risk factors for sporadic salmonella infections.	M30

WP3. Syndromic surveillance

T-3.1 Identify the opportunities for SyS of FBD
sT-3.1.1 Food chain mapping
sT-3.1.2 Data source screening: availability, quality and suitability for SyS
T-3.2. Univariate syndromic surveillance development for FBD (and AMR)
T-3.3. Evaluation of multivariate syndromic surveillance for FBD

Deliverables

Ref	Title	Due month
D-JRP6-3.1	Full mapping of the chain process for three main productions in E.U	M8
D-JRP6-3.2	Data inventory with assessment of availability, quality and fitness for SS	M10
D-JRP6-3.3	Description of the SS components implemented and guidelines for their use	M24
D-JRP6-3.4	Recommendations about the quality standardisation of data produced across the food chain for their use in SyS ()	M30
D-JRP6-3.5	Contribution of multiple syndromic surveillance components in the FBD surveillance	M36

Milestones

Ref	Title	Due month
M-FBZ1.NOVA.3	Food Chain mapping completed, data sources identification advanced, and ready to start developing the SS components	M7
M-FBZ1.NOVA.5	Case-study choice	M9
M-FBZ1.NOVA.14	SS components developed and tested	M22
M-FBZ1.NOVA.27	Integration of multiple sources developed and tested	M34

WP4: Spatial risk mapping

T-4.1. Identification of spatial relationships and patterns in Salmonella prevalence
sT-4.1.1: Surveillance in high prevalence regions to detect introduction and changes in prevalence.
sT-4.1.2: Surveillance in low prevalence regions to reduce prevalence.
T-4.2. Risk of introduction of Salmonella in pig farms through animal feed.
T-4.3. Role of the environment in the occurrence and maintenance of Salmonella infection in extensive farming.

Deliverables

Ref	Title	Due month
D-JRP6-4.1.	Maps for Salmonella prevalence geographical patterns in intensive livestock and slaughterhouses completed in high prevalence regions	M12
D-JRP6-4.3.	Assessment of the spatio-temporal infection dynamics model in Salmonella in low prevalence regions.	M12
D-JRP6-4.7.	Salmonella data in extensive farming in Mediterranean scenario mapped and analysed.	M12
D-JRP6-4.2.	Identification of periods with higher probability of detection of infection identified in high prevalence regions and temporal evidences for an association with human cases	M24
D-JRP6-4.4.	Evaluation of optimal surveillance strategies.	M24
D-JRP6-4.5.	Characterization of the spatial network structure of the pig industry in a Mediterranean scenario and Salmonella data mapped and analysed.	M24
D-JRP6-4.8.	Cartographic map of hot spot areas for Salmonella transmission between wild boars and low biosecurity systems.	M24
D-JRP6-4.6.	Assessment of the potential effect of the withdrawal of the use of formaldehyde-based feed treatments done.	M36
D-JRP6-4.9.	Potential new environmental surveillance indicators identified.	M36

Milestones

Ref	Title	Due month
M-FBZ1.NOVA.16	Result reporting on the spatio-temporal patterns of infection distribution in intensive pig farms, slaughterhouses and human cases in high prevalence regions and evidences for an association between them.	M24
M-FBZ1.NOVA.17	Result reporting on the spatio-temporal patterns of infection distribution in intensive pig farms, slaughterhouses and human cases in low prevalence regions and evaluation of optimal surveillance strategies.	M24
M-FBZ1.NOVA.18	Result reporting on hot spot areas for Salmonella transmission between wild boars and low biosecurity systems.	M24
M-FBZ1.NOVA.28	Result reporting on risk of Salmonella introduction in pig farms by animal feed and the potential effect of the withdrawal of the use of formaldehyde-based feed treatments.	M36
M-FBZ1.NOVA.29	Result reporting on new environmental surveillance indicators.	M36

WP5: Evaluation of surveillance programs & cost efficiency

T-5.1: Adapt infectious disease models for assessing the effect of surveillance programs in primary animal production on consumer exposure to foodborne pathogens.

sT-5.1.1

sT-5.1.2

T-5.2 Assessing the effect of using metagenomics in surveillance of foodborne zoonoses.

T-5.3 Modelling the effect of surveillance programs in the food production on human health.

sT-5.3.1.

sT-5.3.2

Deliverables

Ref	Title	Due month
D-JRP6-5.3	An assessment of the public health effects of very different surveillance strategies to detect emerging foodborne infections in a MS or at European level.	M24
D-JRP6-5.1	Report comparing performance of surveillance strategies	M30
D-JRP6-5.5	A practical risk based sampling approach that combines exposure to zoonoses with disease burden and costs for sampling at a European level.	M30
D-JRP6-5.2	Recommendations for metrics to evaluate surveillance performance	M36
D-JRP6-5.4	Report assessing the quantitative effect on human health of changing surveillance capacity across different sources in an MS	M36

Milestones

Ref	Title	Due month
M-FBZ1.NOVA.2	Meeting for information exchange (data, literature, data bases) exchange on exposure assessment, DALY's, consumption data and food handling at home	M10
M-FBZ1.NOVA.6	Surveillance strategies to implement into the models agreed	M18
M-FBZ1.NOVA.7	Basic model describing models describing spread of emerging zoonoses in immunological naïve animal population established	M12
M-FBZ1.NOVA.11	complete specification of the infectious disease models	M24
M-FBZ1.NOVA.12	Submodels to be integrated in the model framework identified	M24
M-FBZ1.NOVA.19	The model parts to detect emerging pathogens in the food-chain and detecting human cases, respectively implemented in the model.	M24
M-FBZ1.NOVA.20	Interim report for a practical risk based sampling approach that combines exposure to zoonoses with disease burden and costs for sampling at a European level.	M24
M-FBZ1.NOVA.23	surveillance layer added to models	M30
M-FBZ1.NOVA.24	A dynamic modelling layer of surveillance is overlaid the submodels	M30
M-FBZ1.NOVA.25	initial set of results circulated to project team	M32

Gantt chart of NOVA work packages and tasks

Legend: Duration █ (light green) | Deliverable █ (dark green) | (M) Milestone

Work packages (WP) and tasks (T)

Time, months — First annual period (M1–M12) · Second annual period (M13–M24) · Third annual period (M25–M36)

Work packages (WP) and tasks (T)	M1–M2	M3–M4	M5–M6	M7–M8	M9–M10	M11–M12	M13–M14	M15–M16	M17–M18	M19–M20	M21–M22	M23–M24	M25–M26	M27–M28	M29–M30	M31–M32	M33–M34	M35–M36
WP0: Coordination																		
T-0.1 Project management	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
T-0.2 Organisation assemblies	M	█										M						M
T-0.3 Financial management	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
WP1: Surveillance mapping and terminology																		
T-1.1 Surveillance terminology	█	█	█	█	█	█	█	█	█	M								
T-1.2 Mapping	█	█	█	█	█	█	█	█	█	█	█	M						
WP2: Food purchase data																		
T-2.1 Data & Barriers			█	█	█	█	M											
T-2.2 Outbreak investigations			M	█	█	█	█	█	M									
T-2.3 Large dataset analysis			█	M	█	█	█	█	M	M	█	█	█	█	M			
T-2.4 Hospital outbreaks			█	█	█	█	█	M	█	M	M	█						
T-2.5 Tracing & Mapping				█	M	█	█	█	M	█	█	M	█	M				
WP3: Syndromic surveillance																		
T-3.1 Identify the opportunities for SyS	█	█	█	█	█													
T-3.2 Univariate SyS components				M	M													
T-3.3 Multisource SyS							█	█	█	█	M	█	█	█	█	█	M	█
WP4: Spatial risk mapping																		
T-4.1 Identifications of spatial patterns	█	█	█	█	█	M	█	█	M	█	█	M						
T-4.2 Risk of introduction	█	█	█	█	█	M	█	█	█	█	█	M	█	█	█	█	M	M
T-4.3 Role of environment	█	█	█	█	█	█	█	█	█	█	█	M	█	█	█	█	█	M
WP5: Surveillance modelling and evaluation																		
T-5.1 Modelling effect on human exposure						M	█	█	M	█	█	█	█	█	M	M	█	█
T-5.2 Using metagenomics in surveillance	█					M	█	█	█	█	M	█	█	█	M	M	█	█
T-5.3 Modelling effect on human health	█	█	M	█	█	█	█	█	M	█	█	M	█	█	M	█	█	M