Interventions to control the dynamics of antimicrobial resistance from chickens through the environment

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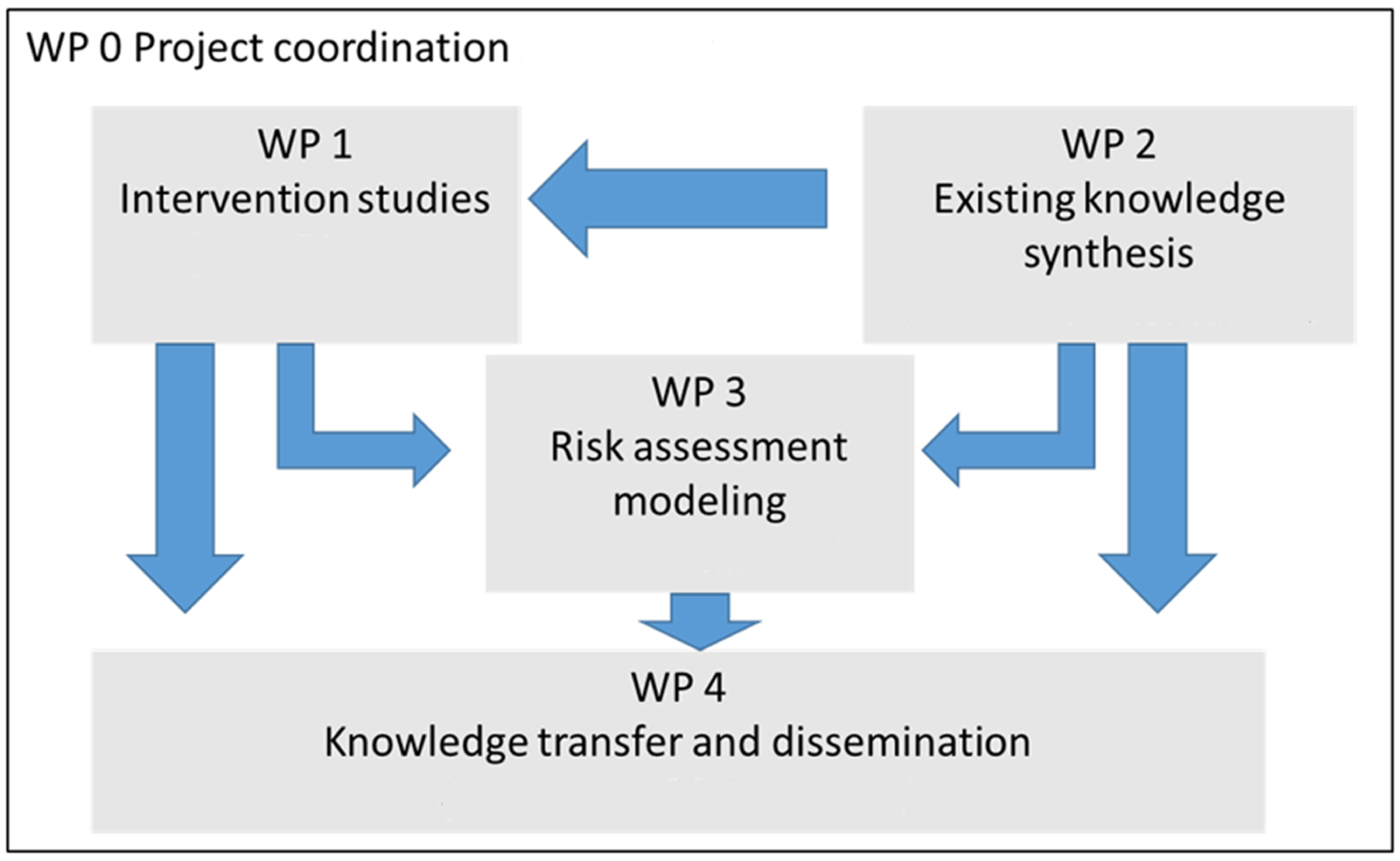
Overall structure of the work plan with work package interdependency



The overall objective of the project **ENVIRE** is to contribute to the reduction of the selection and the spread of antimicrobial resistance (AMR) in broiler chickens and from chicken farms to the environment, and ultimately to humans.

Focus will be laid on **ESBL *Escherichia coli*** and ***Enterobacteriaceae*** and on resistance against **fluoroquinolones** as well as **colistin**.

Different intervention studies will investigate the potential of various on-farm measures:

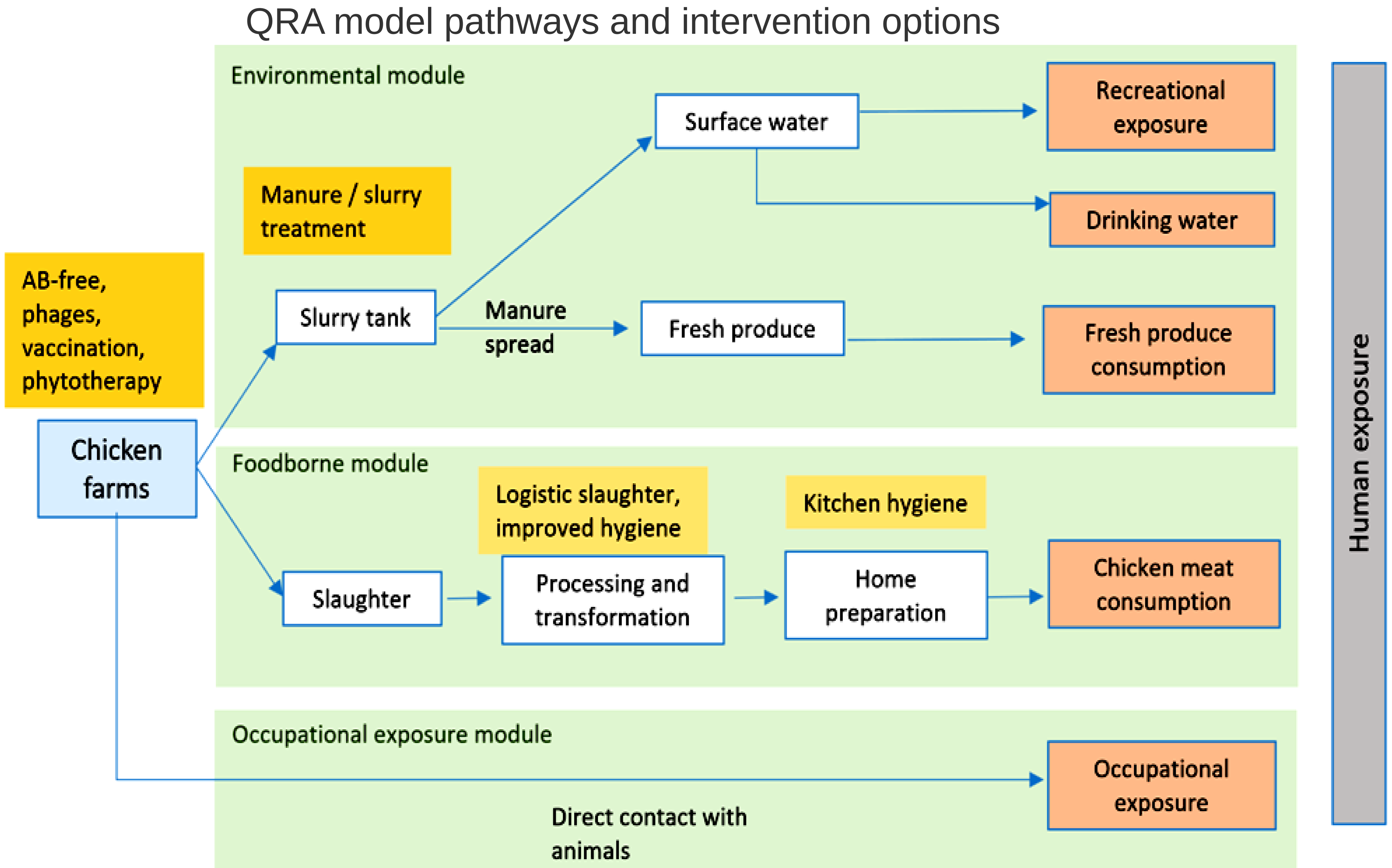
I) Antibiotic-free chicken raising
II) Phytotherapy as alternative for antibiotics
III) *E. coli* vaccination
IV) Application of bacteriophages
V) Treatment or storage of manure
VI) Depollution of farm effluents to remove antibiotics and their residues

A quantitative risk assessment model is being developed and will be used to assess the effectiveness as well as potential synergistic effects of the selected interventions, to reduce human exposure via the foodborne, occupational and environmental pathways.

The reduction of AMR release in the environment will have direct and indirect effects on public health, animal health and the environment.

Every step to break this constant exchange supports the increase of One Health.

QRA model pathways and intervention options



Project partners

- **Tunisia**: Faculty of Medicine of Sousse, University of Sousse
- **France**: French Agency for Food, Environmental and Occupational Health & Safety (ANSES)
- **Germany**:
  - Freie Universität Berlin
  - Leibniz Institute for Agricultural Engineering and Bioeconomy e.V.
- **Lithuania**: Lithuanian University of Health Sciences
- **Poland**: Wrocław University of Environmental and Life Sciences

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