Partnering to Strengthen the Risk-Benefit Assessment within EU Using a Holistic Approach
- The EFSA partnering grant project RiskBenefit4EU

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Background and Purpose
Human diet may present both risks and benefits to consumers. Risk-benefit assessment (RBA) intends to estimate the overall health impact benefits and risks for humans following exposure (or lack of exposure) to a particular food or food component. RBA is an evolving research discipline and only few research groups are established around the area. In the RiskBenefit4EU-project (RB4EU) partners from Portugal, France and Denmark team up with a specific objective to develop, apply and validate a framework to increase capacity within RBA.

Project organization and objectives
With the partners from INSA (PT) being the project leaders, and the partners from France and Denmark with experience in RBA, the overall aim of RB4EU is to gather, develop and harmonize approaches for RBA-problem formulation and solving. The objectives are to increase capacity of RBA in Portugal, and in the process generate a capacity building framework for RBA and validate it via a case study.

Capacity building activities
- Training activity
  - Training 1 (5 days)
    - Harmonisation of concepts used in RBA
    - Main principles in toxicological, nutritional and microbiological RA
    - Introduction to the RBA stepwise approach
  - Training 2 (5 days)
    - Analysis of published RBAs
    - Convey acquired knowledge to define an RBA framework
    - Apply framework to case study
  - Short-term technical missions (5 days)
    - Technical guidance
    - Model implementation
    - Stochasticity and Monte Carlo simulation
  - Dissemination
    - Two scientific publications (*)
    - Two international conferences

Case study
In Portugal, the MYCOMIX project2 revealed a potential health concern associated to aflatoxin exposure through regular consumption of cereal-based foods in children. Acknowledging the beneficial effect of fibre intake from wholegrains, the RB4EU project formulated a RBA-problem:

What is the health impact of substituting cereal-based breakfast products with infant breakfast products in children in Portugal? Different scenarios were considered (current consumption situation and different levels of breakfast and infant cereals intake). The estimate of the health impact encompass both nutritional, toxicological and microbiological health effects, and is expressed in disability adjusted life years (DALY).

Conclusions of the capacity building
- To build capacity within RBA, a harmonization of terminology and methodology is paramount.
- A case study is efficient and should build on project participant’s experience and a relevant public health question.
- The experience and framework of capacity building gained in RB4EU will over time enable national authorities to establish RBA as tool to provide scientific evidence to inform management decisions in food safety and nutrition.