

# Shaping the semantics of healthy and sustainable food systems: a participatory meta-framework-based approach. *Extended poster abstract.*

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## Abstract

Serious health and nutrition challenges characterise the current global scenario, requiring rapid and long-term viable solutions. Negative health conditions appear strictly connected to present social issues, such as poverty and inequalities, as well as to contemporary environmental threats. Hence, an inextricable convergence between health and sustainability matters strongly emerges, reclaiming an urgent transition to a healthier and more sustainable world. The food system is the principal domain within which this transition must occur due to its pivotal role in determining globally these social, environmental and health-related concerns. In order to face these challenges, a collaborative approach, shared among the plurality of involved stakeholders, appears strictly necessary, principally due to the peculiar complexity and trans-disciplinarity of the food systems' studies.

In this optic, the design of common, suitable and consistent semantic resources has high potential to state this participatory method, by ensuring data integration, assessment, and reusability across system scholars and practitioners. Further, digital ontologies showed up as an attractive tool for underpinning the development of these resources, providing solid conceptual bases while guaranteeing data and information interoperability. Currently, different food and health digital ontologies have been established. However, they rarely cover sustainability-related features. Furthermore, such ontologies are essentially designed following a top-down approach, without involving related stakeholders.

In order to improve the existing food-related health and sustainability ontological scenario, here, we present a meta-framework, stating fundamental determinants, to mandatory cover when addressing this system transformation. The meta-framework encompasses three major portions. Each one outlines, respectively, the determinants which point out 1) involved entity standpoints and positionings within the system, 2) food system(s) attributes, architecture and dimensions as well as related conceptualizations; and 3) relevant food system notions summoned by this transformative change.

To operationalize this conceptual tool, we further propose a meta-framework application procedure. This method engages selected system stakeholders in a collaborative meta-framework usage, allowing the identification of common features from personal perspectives, and their subsequent enumeration into an appropriate narrative. Applying to specific cases of transition towards more sustainable and healthier food systems, this approach enables the formulation of appropriate ontological elements, addressing, each time, transformation case-related themes.

Finally, outlining core food systems health and sustainability determinants, this meta-framework shows up as an exciting possible conceptual basis for further establishing a healthy sustainable food system(s) representations ontology.

## Keywords

Sustainability, health, food system, digital ontologies, participatory design, meta-framework foundations.

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