

A CHALLENGING FUTURE FOR FEEDING THE HUMAN POPULATION: THE ALTERNATIVA PROJECT TO INTEGRATE AND EVALUATE IMPACTS OF FOODS ON HUMAN HEALTH AND SUSTAINABILITY

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INTRODUCTION

The pressure that global food systems exert on the environment has amplified over time, following the growth of the human population, changes in food consumption patterns and intensification of production systems. By 2050, it is expected that the current global population will have increased by more than 30 %. This increase will be followed by an increase in food demand. Without changes in food systems, overpressure on agriculture and food production will be unavoidable, with adverse consequences for the environment and human health. Food production and agriculture contribute up to 30 % of all greenhouse gas emissions, occupy 40 % of available land, and use 70 % of available fresh water; it is also among the largest drivers of biodiversity loss, species extinction and natural resource degradation. Animal-derived protein production, such as meat and milk, is among the most important drivers of this impact. In facing these growing challenges, it is crucial to evaluate the health and sustainability impacts of alternatives for animal-based food proteins.

METHODOLOGY

Risk-benefit assessment (RBA) of foods, a relatively new decision-support tool, estimates the overall human health impact following exposure to a particular food or food component, integrating risks and benefits in comparable measures. Methods that also take into account the environmental impact of the food production systems are needed to perform a sustainable holistic assessment. Life cycle assessment (LCA) is the method typically recommended to support policymaking by quantitatively evaluating and assessing the effectiveness of sustainability interventions during the entire life cycle of a product. A framework that integrates these two aspects in a common framework is currently lacking. 'ALTERNATIVA | Alternative protein sources in the European diets – integrating health risk-benefit and sustainability' will develop a holistic approach to assess the impact of alternative protein sources, integrating health and sustainability assessment. This project

will gather and combine expertise in RBA and sustainability assessment, to enhance the capacity of partners involved; an application will be provided for evaluating the impact of replacing red meat with alternative protein sources.

RESULTS

ALTERNATIVA is building on previous experience gathered under EFSA Partnering Grants in the risk-benefit assessment of foods, namely the RiskBenefit4EU (Partnering to strengthen the risk-benefit assessment within EU using a holistic approach) and NovRBA (Novel foods as red meat replacers – an insight using Risk-Benefit Assessment methods) projects, and is advancing the field by including new societal concerns. On the other hand, social, environmental and economic sustainability assessments of food products have been improved in EU projects, e.g. STRENGTH2FOOD (Strengthening European Food Chain Sustainability by Quality and Procurement Policy). A common set of indicators was developed, covering the economic impacts (e.g. gross value added), the environmental impacts (e.g. carbon footprint) and the social impacts (e.g. gender equality). The advances in risk-benefit assessment methodologies will be used and combined with sustainability assessment methods, to identify alternative protein sources that could be more viable alternatives, to feed the human population while ensuring sustainability and health.

DISCUSSION

Curbing the adverse trends that humanity is facing is directly linked to our food choices. Only through a holistic approach, considering the multiples impacts and integrating different disciplines, such as RBA and sustainability assessment, will it be possible to tackle these expected challenges, take the best decisions and implement the most appropriate actions. ALTERNATIVA will provide innovative tools to support the best decisions concerning the diets of the future, securing human nutrition, and planetary health.

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