PRACTICE ABSTRACT

DIVINFOOD
Co-constructing interactive short and mid-tier food chains to value agrobioDIVersity IN healthy plant-based FOOD

Food design and agile prototyping to explore NUCs scenarios

Summary

The potential of minor crops as nutritious and ecologically sound foods is hindered by a typical neglect at farming, processing and consumption level. It is also limited by lack of exploration of innovative ideas for new products.
The rapid generation of creative ideas to bring neglected and underutilised crops (NUCs) to market and stimulate their consumption may offer previously unexplored solutions.

Introduction

Orphan crops receive limited research and market attention. Despite the growing interest in meat- and dairy-like products, recipes for vegan and healthy foods do not necessarily include NUCs and their processing and marketing remain confined to a limited array of usual techniques, shapes and appearances.
This particularly applies to some leguminous crops, such as white lupin. The unavailability of innovative and appealing lupin-based recipes contributes to restrain a more widespread adoption.

Solution

Food design is an emerging field with significant potential in contexts, such as agroecology, that are still outside mainstream consumption. Designers use creative techniques such as emergent scenario design and agile prototyping to envision both the concept and its real-world application.
The agile prototyping methodology was applied to develop lupin-based ideas in a collaborative classroom-design involving a team of 25 students. The class was divided into three groups tasked with delivering 'food design concepts' to showcase innovative approaches to sustainable food systems and consumption patterns.

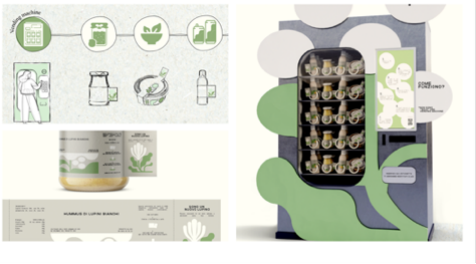

Figure SEQ Figura * ARABIC 1 The Loop-ini concept designed by students

The process began with a presentation by an expert in the role of a fictitious "client," who provided an overview of white lupin and NUCs.
Students then researched the pulse and lupin markets to develop new scenarios, exploring a wide range of lupin valorization possibilities, adhering to fundamental principles, such as plausibility & feasibility (creation of narratives that depict potential developments arising from existing trends, technological advances, and societal shifts) and diversity (exploration of a wide range of future scenarios).
Once innovative scenarios were identified, the students proceeded to define naming conventions, visual identities, system maps and stakeholder connections.
The results were finally presented in a pitch and discussed in relation to the basic idea, relevance for the indicated target, and innovative profile.
In the present case, divergence emerged between two distinct demographic targets: youth and children. The delineation of educational institutions and green spaces as distinct contextual milieux is also a result of this work.

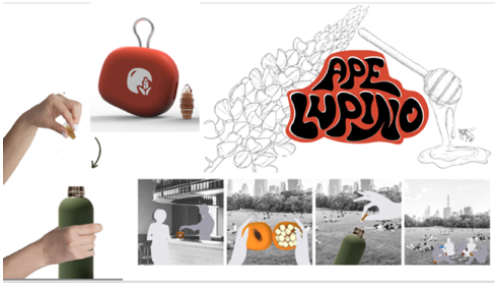

Figure 2 The ApeLupino concept designed by students

The three concepts are ultimately intended to be illustrated and debated with the white lupin living lab participants. They serve as a source of inspiration to explore possible innovative pathways.

Benefits and limits for practitioners or stakeholders

The three design concepts mentioned in the case show the feasibility of constructing comprehensive scenarios within limited timeframes, fostering stakeholder reflection on project diversity, coherence and significance.

Scenarios need to be logically consistent, within the context of lupin valorisation for example, with components and dynamics linked together in a coherent way. This ensures that the scenarios are internally consistent, thus enhancing their credibility and facilitating a convincing presentation of causal relationships and potential impacts.

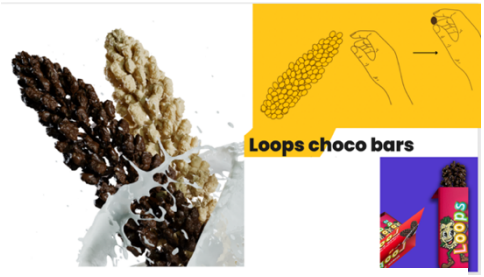

Figure 3 The Loops concept designed by students

Each generated scenario must also provide valuable insights for decision-making and policy development, tailored to the objectives of the project, ensuring that they are directly applicable to the project's goals.

Utilising agile design or prototyping, particularly in participatory design for scenario creation, meets the growing market demand for agile prototyping to contextualise and validate products. Structured scenario-based design and design thinking facilitate stakeholder engagement, innovation and departure from traditional business models within the food system.

However, the experiment encountered limitations, notably in the absence of transdisciplinary collaboration that is crucial for skill integration. It is essential to ensure, through scenario elaboration, diverse perspectives from stakeholders representing various communities and sectors. The validation with external sector stakeholders may enhance scenario accuracy.

Further information

Further readings

- Sonia Massari, Francesca Galli, Luca Colombo (2024) Lupins Unleashed: overcoming challenges, vision and design of innovative products to enhance agrobiodiversity. IFSA2024 | SYSTEMIC CHANGE FOR SUSTAINABLE FUTURES
- Youbin, K. and Jaehwan L. (2019), A Product Design Process for Innovation based on Iterative Agile Prototyping. *Journal of Industrial Design Studies*

Weblinks

- Divinfood's webpage on white lupin: https://divinfood.eu/leg-it-switz-en/

About this practice abstract and DIVINFOOD

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DIVINFOOD - Co-constructing interactive short and mid-tier food chains to value agrobioDIVersity IN healthy plant-based FOOD, is running **from March 2022** to **Feb 2027.**

The overall goal of DIVINFOOD (a multi-actor, participatory project) is to facilitate the use and increase the value of Neglected and Underutilised Crops (NUCs) in food chains to foster healthier diets and more sustainable food systems.

Project website: www.divinfood.eu

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