

PROPOSAL FOR A DISCUSSION PANEL AT THE 'SUSTAINABLE FOOD SYSTEMS <>
SUSTAINABLE DIETS' CONFERENCE (FRIDAY, 11 OCTOBER 2019)

<https://graduate.aur.edu/events/conference-sustainable-food-systems-sustainable-diets>

TITLE

Legumes: cornerstones of the transition towards more-sustainable agri-food systems?

We invite all food scholars, especially sustainable diets and food policy experts, other speakers/participants of the conference to be on the panel and help us discuss the role of legumes in sustainable diets, and the implications of the protein paradox for the food system.

1. The role of legumes in current diets

Marta Wilton Vasconcelos, Universidade Católica Portuguesa, CBQF Laboratório Associado, Escola Superior de Biotecnologia, Porto, Portugal

The role of legume grains in meat-reduced diets is not a new concept. Around the 10th century, most of Europe was suffering from problems of food shortage and widespread malnourishment. Providentially, around this time, a new system of crop rotation including legumes was adopted, that besides allowing land to be more fertile, provided legume grains to be consumed by the most impoverished populations who lacked much-needed protein, minerals, vitamins, and fibre in their diets. This allowed flourishing of populations, having a profound effect on Europe's current demographics. Fast-forwarding almost 11 centuries, legumes saw their consumption steadily decreasing across Europe, even in countries where they were part of traditional dishes and embedded in cultural heritage (such as the Mediterranean diet). However, a new wave of change has surged in the last decade that could favour a new increase in legume consumption. Reducing intake of foods of animal origin has been pointed out as a necessity for food sustainability. Driven by several factors, including increased consumer demand for healthier, more sustainable choices, there was a surge in the development of novel food products that include legume grains in their composition. However, vegetarian meals, particularly those containing legumes, are not always easily accepted, and historical changes from traditional meals to processed, easy to prepare, readily available options have emerged. Here we will show that legumes have versatile and distinct seed composition and cooking properties and that many relationships may be found between seed traits and pasting and cooking behaviours of different germplasm collections. We will also summarise the identified barriers (unfamiliarity on how to cook legumes; lack of time; organoleptic traits; side effects) and leverages (wanting to eat "healthier"; reduce the environmental footprint of diets; lowering the intake of animal protein) for increased consumption. We will also highlight the work done on germplasm characterisation for nutritional profiling, our local and global efforts to develop novel legume-based products and dishes while at the same time promoting their consumption as part of a healthy diet across Europe. Several examples of product development and testing will be showcased. Finally, legume grains are nutrient-rich foods that have well-established benefits for health, such as in the prevention of cancer, obesity, cardiovascular disease, hypertension, diabetes mellitus, and microbiome modelling. As part of a study that is looking at the health impact of a replacement diet that includes legumes on a daily basis will also be showcased. Results show the potential of legumes as raw material for developing new food products that are appealing to a wide suit of consumers but whose uptake is very much legume and country-specific. Also, a positive change in consumer's

perceptions towards legumes is opening doors to a new framework of sustainable diets where legumes will play a major role.

Marta Wilton Vasconcelos (female), is working as principal investigator and docent, at ESB-UCP having worked in the field of legume nutrition for the past 13 years. She graduated in Biology from Lisbon University in Portugal after which she conducted her PhD studies in the Philippines at IRRI, developing an iron and zinc biofortified rice. She did a Postdoc position at the United States at the Children's Nutrition Research Center, at Baylor College of Medicine and after that received a permanent position as a Research Associate. In 2007 Marta Vasconcelos was acknowledged by the US Citizenship Department as an Internationally Recognized Outstanding Researcher. In 2008 she established the PlanTech lab, at ESB-UCP, working on the field of legume and cereal nutrition and biotic stress.

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2. Governance solutions for legume-based food systems

Bálint Balázs, Environmental Social Science Research Group, Budapest, Hungary

Legumes are at the centre of policy debates concerning global food security, sustainable food production systems and our transformation towards more sustainable food systems. Where they exist, policies to realise legume-based food production have failed to increase legume-based diets and even production over the long term. The marginal role of legumes in agri-food systems illustrates 'pars pro toto' our unbalanced agri-food systems which are 'locked-in' to unsustainable states of operation that systematically obliterate the true economic, social and environmental costs of current production and consumption patterns. Such legume paradox presses for more effective policy innovations to avoid further incoherencies among policies across sectors. However, this needs to be realised in a highly fragmented, unknowable, 'no-one-stop-shop' policy environment. Public funding for legume production and consumption would provide clear opportunities for synergies, as 'sustainable diets' might be a policy goal that is most widely acknowledged. This paper is an action researchers' reflection on a non-conventional, deliberative policy approach that seeks to engage multiple stakeholders and decision-makers in envisioning more favourable policy and governance frameworks. Several examples of policy inconsistencies for legume-based food systems will be presented from Europe and beyond. We also highlight the role of new methodologies required for policy deliberations in science-society-policy interfaces to create policy innovations that meet current and future food and nutritional security challenges. New insights from the public deliverables of the European Union (EU)-funded H2020 project Transition paths to sustainable legume-based systems in Europe (TRUE), and the multi-stakeholder European Legume Innovation Network (LIN) workshops (www.true-project.eu/lin-workshops/) will be presented. Our results point out how to enable co-innovative practices to bring into effect policies that may more successfully support current, and future, food and nutritional security challenges via the use of legumes. Consumers' demand for nutritious, affordable, environmentally friendly food needs to rely on the diversification of the agri-food systems which entails supply chain actors' cooperation towards a more-effective policy environment.

Bálint Balázs, MA in History and Sociology, PhD in Environmental Sciences. Senior Researcher and Executive Manager of the Environmental Social Science Research Group, Budapest, Hungary. He has international research experience in EU FP6-7 and H2020 projects in the field of sustainable and local food systems, transition to sustainability and policy analysis, as well as public engagement, science-policy dialogues, cooperative research and participatory action research. He is a board member of the Environment & Society Research Network of the European Sociological Association.

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