

Nutrition and Diet as Key Drivers to a More Sustainable and Healthier Future

Introduction

Food affects both human health and the health of the planet. Imbalanced nutrition, low in fruits, vegetables, legumes, nuts/seeds and whole grains is responsible for one of the greatest health burdens globally and in most regions. Our diets and the food system underpinning them are affecting the environment and required resources. In some cases, crossing of key planetary boundaries and limits might influence the stability of Earth's ecosystem [1]. Out of 30 diets, the Mediterranean has been selected as No. 1 for the seventh year in a row. Meanwhile, other popular diets, including the ketogenic ("keto") and Atkins, landed toward the bottom of the Best Diets Overall list, at Nos. 25 and 26, respectively [2]. The Mediterranean diet has a lower environmental impact than other diets and shows a relatively low carbon per capita footprint. Moreover, the water footprint of this diet is also relatively low [3].

Selecting or developing new diets that have low environmental footprint combined with health benefits could be a major driver for the successful implementation of WHO and EU One-Health approach [4]. One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems. It recognizes the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and inter-dependent [5]. Sustainable healthy food systems promote all dimensions of individuals' health and wellbeing; have low environmental pressure and impact; are accessible, affordable, safe and equitable; and are culturally acceptable. The aims of sustainable healthy diets are to achieve optimal growth and development of all individuals and support functioning and physical, mental, and social wellbeing at all life stages for present and future generations; contribute to preventing all forms of malnutrition (i.e. undernutrition, micronutrient deficiency, overweight and obesity); reduce the risk of diet-related

Editorial

Apostolos Patsias*

*Head of chemical Microbiological Laboratory,
Agricultural Poultry Co-operative Pindos, Greece*

***Correspondence:** Apostolos Patsias, Head of chemical Microbiological Laboratory, Agricultural Poultry Co-operative Pindos, Greece, Email: apatsias@pindos-apsi.gr

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diseases; and support the preservation of biodiversity and planetary health. Sustainable healthy diets must combine all the dimensions of sustainability to avoid unintended consequences [6-8].

Towards that goal Food-based dietary guidelines (FBDGs) provide country-specific guidance on what constitutes a healthy diet. With increasing evidence for the synergy between human and planetary health, FBDGs have started to consider the environmental sustainability of food choices [7]. Food-based dietary guidelines (FBDGs) are increasingly including content to address the relationship between food and environmental sustainability. At present, this information is more likely to be reported in background documents than consumer documents, restricting its visibility to users of the consumer documentation. The principles most commonly addressed in FBDGs are associated with culture, environmental effect, biodiversity, and food waste. However, information is general, and practical, specific advice, or quantified recommendations for action are scarce. To achieve the transformation to food

systems needed to curb the accelerating environmental decline globally, more effort and commitment to developing FBDGs that explicitly emphasise the crucial link between diet and planetary health and provide specific and practical advice to address these issues.

Precision nutrition is another emerging concept that aims to develop nutrition recommendations tailored to different people's circumstances and biological characteristics. Responses to dietary change and the resulting health outcomes from consuming different diets may vary significantly between people based on interactions between their genetic backgrounds, physiology, microbiome, underlying health status, behaviors, social influences, and environmental exposures [9]. On this field much research will be needed before more precise nutrition recommendations can be achieved. This includes better understanding and accounting for variables such as age, sex, ethnicity, medical history, genetics, and social and environmental factors. The advent of new methods and technologies and the availability of considerably more data bring tremendous opportunity.

More research is also required on a more general perspective, in the course of further developing sustainable food systems and healthier diets. While there is growing evidence supporting the health benefits of sustainable diets, more data is needed to understand the long-term effects on various health outcomes, including cardiovascular health, cancer risk, and overall mortality. There is also a need to understand how changes in dietary patterns and food production systems can enhance the resilience of food systems to environmental, economic, and social shocks, such as climate change, pandemics, and economic instability. Given the complex interplay between nutrition, agriculture, environmental science, economics, and sociology, there is a need for more interdisciplinary research that integrates insights from multiple disciplines to address the multifaceted challenges of creating a sustainable and healthy food system. Comprehensive scientific reviews of the scientific literature on healthy eating; science-based targets for sustainable food production and further basic and applied research will be key pillars for a 'great food transformation' towards healthy diets from sustainable food systems by 2050 [6].

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