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LOOKING AT THE FOOD CHAIN STAKEHOLDERS: CHALLENGES AND OPPORTUNITIES FOR SUSTAINABLE FOOD STRATEGIES IN HIGHER EDUCATION INSTITUTIONS

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Resumo

The food value chain is a key contributor to various environmental problems resulting from several activities, such as production and use of fossil fuels and agrochemicals (e.g., fertilizers and pesticides), (Clark et al., 2020). The several food chain players also play an important role towards the transition to more sustainable practices. These players include, the primary production of food products, the processing (including preservation), the distribution, retail, purchases & menu planning and cooking, the consumption, and the food wastes destination. Each key player has a pivotal role within the food service. This work looked at the challenges and opportunities from several relevant stakeholders from the food value chain to capture their positive reaction towards sustainability on the food production and consumption chain.

At the legislative level, the promotion of healthy and sustainable food is of multi-sectoral concern and currently is being covered by several and disperse inter-ministerial platforms comprehending legislative documents and guidelines. Recently, the XXIII Portuguese Government created the Ministry for Agriculture and Food. As far as Higher Education Institutions (HEIs) are concerned, the recent survey carried out by the Sustainable Campus Network revealed that the Excellence Seal project “Healthy Food in Higher Education” was adopted by some institutions. This project arises within the scope of the National Program for the Promotion of Healthy Eating (PNPAS) and the Integrated Strategy for the Promotion of Healthy Eating (EIPAS) by aims “promoting initiatives that encourage healthy eating among the university population”. However, it also reveals the difficulty in applying some of the legal guidelines/requirements, namely, in green procurements and the participation of local producers in public contracts to supply to HEIs canteens. Conducting community education will help people’s involvement in the access to more information regarding consumer trends.

The agricultural sector is directly responsible for 10% GHG emissions (Rosenzweig, 2020) and other negative impacts (Steffen, 2015) leading to risks in the biosphere integrity and in biochemical flows. The food production stakeholders need to be integrated and Europe has already committed to be part of

the solution through the “Farm to Fork strategy”. HEIs have a key role, through practices and research, on helping achieve the ambitious targets by 2030 of i) reduction by 50% of the use of chemical pesticides, ii) reduction by at least 50% of nutrient losses, iii) reduce at least 20% the use of fertilisers, iv) reduction by 50% of the sales of antimicrobials and v) reaching 25% of organic farming. Innovation still needs HEI contribution through partnerships with different stakeholders, namely in soil management (as for increased soil organic matter content) crop management (by for instance changing monoculture to crop diversification), livestock management (silvo pastoral system), improved water and fertilisation management, integrated pest management and waste management.

The HEIs can and must contribute to the fulfilment towards the provision of sustainable food, with the adoption of behaviours and/or developing initiatives that promote community awareness and the minimisation of the impacts into the environment. At a national level, there are projects developed with the school community that aim to promote sustainable food, promoting good food practices with the target population, in order to enhance these behaviours. To that purpose is essential to identify and understand the inherent environmental aspects, not only regarding the preparation of meals, but also the origin and seasonality of the products used, forms of preparation and confection, among others. This extends to other topics of concern as the selection and storage of the food and beverages used (Nóbrega, 2017), and meals and food chain by-products (waste and gas emissions) (Strasburg, 2016). Recently different efforts had been conducted to sustainability recommendations to menu planning (Sousa, 2021). However, in general, they are already implemented and generally used in university canteens. In fact, although important, the offer of vegan menu options in public institutions is not the only path towards sustainability.”

The consumption phase is currently dealing with largest challenges. In one hand the COVID-19 pandemic brought a global decrease on food consumption away from homes. On another hand, Portugal within the EU, shows the largest meals carbon footprint value. Portugal sums up 1460 kg CO₂ eq./cap.year, whereas the average EU diet shows to contribute with 1070 kg CO₂ eq./cap.year (Sandström et al., 2018). University canteens may have an important role in offering meals prepared with safe and nutritious foods. Several studies reported that determinants of food consumption by university students are mainly related to sensorial preferences, convenience, food availability and accessibility, and price (Czarniecka-Skubina et al., 2020). Meals that were taking place at the canteens are now being replaced by lunch boxes prepared at home. It is therefore important to analyse meals in lunchboxes and to develop strategies and tools that are effective for students to develop healthy, sustainable and safe eating habits. Other opportunities are either in the innovation in servings to lower the footprint of meals or through awareness of consumers and those responsible for menu planning for an effective change towards sustainability by consciousness behaviours. This may make use of carbon footprint labelling in the menus.

The food chain is a large contributor to waste production. European legislation sets out the guidelines and targeted actions seeking reduction in waste streams from the food sector: as for instance the reduction of single-use plastics; targets for biowaste deposition at landfills and increase paths for recycling. But on the other hand, the food safety legislation and its interpretation have created some constraints. Probably due to the low budget of the social services of the HEIs, they have always found solutions for valorizing food leftovers, but waste has grown above all in packaging. Partnerships may eliminate or minimize all this waste. In the purchase of goods and services, the verbs refill, reuse, return will be used more often. In planning, the shifts to local and seasonal may reduce wastes. This will require a change in the relationship with suppliers, but above all with customers. Knowledge, creativity, and innovation will be needed, on the kitchen team, to use all the components of the food and create new recipes with less or without waste. Also, new partnerships to influence customers to adopt changes in dishes are required. These may cover reductions in the amounts of animal protein served or reduce the amount served to avoid leftovers in plates after meal. Food leftovers are currently sent off to be either landfill or incinerated. But the challenge to identify more adequate paths is of utmost importance. These may be through for instance take-away or for centralized composting or other appropriate local management solutions.

In overall the work presented shows that the strategies to sustainability on the food chain require actions for multiple agents. Some of the strategies to single actions that focus in the improvements at specific single steps from the food value chain are not new but a strategic shift towards integrative transitions need convergent efforts from multiple scientific backgrounds and partnerships towards implementations.

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