

Stakeholder consultation for Horizon 2020 Societal Challenge - "Health, demographic change and wellbeing" for the programming exercise 2016/2017

- [Recommendation on 1.1: Understanding health, well-being and disease](#)

It is our opinion that higher focus on the importance of the diet for improving health promotion and disease prevention should be envisaged under societal challenge 1.

Diet has indeed an effect in human health. There are several diet-dependent or affected diseases directly linked to the nutritional status, such as type 2 diabetes. Nowadays, overweight and obesity are growing public health problems, above all among children and adolescents. In addition, diet has been highlighted as one of the factors underlying common diseases taking place during the process of ageing.

However, up to know, the dietary determinants of a healthy life are not yet fully understood. Thus, FoodDrinkEurope agrees that there is a greater need to demonstrate the how to, by dietary means, counteract and/or slow down the progress of some diseases. Based on the knowledge gained with these studies, foods and treatments designed especially for a targeted group of users could be developed, and the best ways to communicate dietary recommendations to consumers could be explored.

Another fact that needs to be considered is that dietary needs are closely linked to specific groups of population. In the case of the elderly, a better scientific understanding of all aspects of their diet, not only the nutritional needs but also of the sensory and textural requirements of their foods, is needed to better address their dietary needs. In advanced age, sensory and textural quality of food, nutrient density and bioavailability become most critical for an adequate nutrition of the elderly (at home or hospitalized). There is insufficient knowledge on the nutritional status of the advanced-age groups regarding energy supply and needs for nutrients (i.e. vitamins, essential amino acids, fatty acids, minerals, trace elements). Moreover, new concepts for providing appropriate savoury foods with proper textures, high nutritional quality and easy to handle (including packaging) are needed.

In this group of population diet plays also a major role in preventing cognitive decline. Age-associated decline of cognitive functions in the elderly is of high societal relevance and any amelioration of this disease will provide a substantial quality of life gain in seniors/geriatric patients in order to remain participative and independent as long as possible. However, the current data on the effects of the diet and their individual constituents on maintaining brain

functions in the elderly are clearly insufficient for providing any concise dietary recommendations, for developing new food products or for any other public health measures. Thus, research in this specific area needs to be encouraged within EU funding structure. By combining longitudinal epidemiological studies with experimental studies (intervention studies), and using tools of cognition science, more valuable knowledge should be gained. This would provide the basis for food product developments and dietary recommendations. A special emphasis may be given to lipids, other lipophilic food ingredients and/or antioxidants.

Another issue that we cannot leave behind is the increasing obesity rate all across Europe. The time dimension of the factors driving dietary quality and obesity percentages has been overlooked in research, mainly because of the paucity of adequate longitudinal data. However, evidence from other countries and especially the US suggests that few factors have shown relevant changes over the last two decades, mainly technical progress, income distributions and relative prices, while the time variations of psychological and social factors has received little attention. Furthermore, longitudinal analysis and the application of the appropriate econometric techniques will shed light on the role played by habit formation and time discounting in determining unhealthy behaviours, as well as the potential feedback effect of health status. The objective would be to explore the time patterns of food choice and its drivers and outcomes, in order to capture the key determinants and enable evidence-based policymaking in the medium and long term, including the evaluation of policy measures adopted in recent years. To this purpose, we will need to combine, match and merge existing secondary longitudinal and repeated cross-sectional data-sets in different domains into a comprehensive pseudo-panel data-set, considering all European regions and different population segments, including available information on time patterns in the economic, lifestyle, social and psychological determinants, as well as the relevant health indicators. The relevant projects shall develop and apply appropriate dynamic models to capture the aforementioned longitudinal effects.

Finally, the provision of these healthy foods needs to suit the changing needs of the European consumer. Therefore, a consumer driven approach is required by facilitating the design of foods with new properties but always aligned to consumer-relevant preference and needs profiles (i.e. modelling process and products onto sensory insight of the consumer). This will demand a better understanding of food structure and tailoring their functionality. To succeed, a property-targeted full chain approach is needed to exploit the food raw materials by process-based enhancement of specific functional characteristics and also the structural disintegration of our foods in the gastro-intestinal tract. The foods thus delivered will also need to be perceived as 'natural' by the consumer. In order to achieve this goal, we need to improve our understanding of structure-life history, to overcome process related hurdles for novel foods, design and formulation engineering in food and to exploit the functional properties of ingredients, step by step design and built up of a specific food from its components and formulation and process interactions in the final product.

Considering all the above-cited facts about the direct relationship between diet and health, the ETP Food for Life included its theme Health, Wellbeing and Longevity (with a sub-theme Adding life to years) in its Strategic Research and Innovation Agenda adopted in 2012. When

developing a scientific programme for this area, the ETP working group listed a detailed set of research lines that could be used directly in future calls. According to the ETP experts, these are some of the topics that should be addressed:

1. Understanding of the human metabolic energy efficiency including the human gut micro biota
2. Nutritional, sensory and textural needs of the elderly
3. Plant protein sources for the use in high quality food
4. Early biomarkers for the detection of diseases
5. *In vitro* models for *in vivo* nutritional predictions
6. Use of stable isotopes in food and nutrition research to develop techniques for food labelling and/or to determine the metabolic fate of nutrients
7. Role of diet in:
 - a. pregnancy and in the outcome of offspring
 - b. preventing cognitive decline
 - c. treatment of low grade inflammation
 - d. drug delivery
 - e. delivery of health promoting ingredients
 - f. reduction of “anti-nutritive” components in food, such as allergens (gluten)

– *Expected impact on health, wellbeing and ageing including impact on SMEs, growth, and jobs*

Promoting research in diet-related areas will definitively have a beneficial effect on our society in terms of health, wellbeing and ageing. It will entail a better understanding of the structure formation and breakdown of foods, based on consumer demands and, how the food industry can deliver such foods. In addition, a better knowledge based on nutritional status and needs of the selected groups of population (e.g. elderly) across the European population will allow us to improve foods in response to the impairments in sensory perception, their needs regarding texture and a high level of convenience with proper nutrient supply.

Nevertheless, the translation of research outcomes into practical applications is a major challenge. Therefore, it is important to involve industry and SMEs in this process. Since turnover and costs are major drivers in the sector, it is likely that innovations that lead to cost reduction, new product production and increased competitiveness will be implemented more readily than others. This represents an opportunity for promoting research in healthy diets and products, which might be recognised by the consumers as added-value products.

Special attention should be given to SMEs, since they represent 98% of the 400,000+ companies in the European food industry, the majority of which could be classified as micro-companies. New and innovative ways of involving them should be sought, in particular when it comes to the later stages of the research projects when the ideas become more applied. The best way to strengthen a SME innovation platform might be reducing “time to market”

since in some cases SMEs do not have the infrastructure and the capacity to take up new technologies from the research. In other cases, the situation is exactly the opposite, and an example of this is the very successful model in Switzerland, referred to as the 'CTI projects'. These are open for SMEs, universities and start-ups where the government pays the half and the participating large companies the other half. The IP comes from the small company, which should be strengthened with the support of the other partners. The win-win for the larger ones is that certain processes, methods and technology, which otherwise would not find in-house investment, can be developed by universities and SMEs and bring the results to market. It builds on the creative strengths of SMEs and universities in quite a practical sense.

The establishment of a stable network among universities, research centres, large companies and SMEs poses a very good opportunity for the creation of jobs.

– *Justification 1/2:*

a) Gaps addressed (science, technology, markets, policy) and/or

b) New opportunities for people, systems and economy including international linkages

When it comes to research, there is often a gap between the development of new technologies and the inference of this outcome into new policies or economic opportunities. This could be solved by following a more pragmatic approach when drafting the calls for proposals, giving special attention to those areas pointed out as crucial by decision makers. Nowadays, population ageing is a well-recognized demographic shift taking place at different rates across Europe and thus it is a high-priority for the authorities to ensure a healthy life for the elderly. The same can be said for overweight, being the increasing rate of obesity among children and adolescents a problem of much concern. It is not only a social problem, but also economic, since in recent years the cost of ageing- and obesity-related medical care has increased astronomically. Thus, FoodDrinkEurope suggests fostering research in these areas, since it will generate extensive evidence for medium and long-term policies to improve diets and health. This knowledge will clarify the interaction of economic, lifestyle and psychological factors in determining dietary and health outcomes.

Although the current market in this area is still very limited, it is very likely that it will experience rapid growth in the next years due to the continuous increase in the potential market. FoodDrinkEurope strongly believes that it is time to take advantage of this growth, which will create major business opportunities.

The challenge of promoting healthier diets is also being considered within the European research structure, e.g. the Joint Programming Initiative (JPI) on A Healthy Diet for a Healthy Life. Close working relationships were instituted between this organisations and the ETP Food for Life, with the aim of promoting similar activities. The link was affirmed by the ETP ensuring that its scientific working group for this challenge was a subset of the corresponding group within the JPI, thereby ensuring a good match between the two scientific agendas.

- *Justification 2/2: How can interdisciplinarity issues be addressed? (E.g. social sciences, humanities and gender aspects in research, cross-cutting with other societal challenges)*

A transition into healthier diets and lifestyles should be encouraged. With this aim, novel multidisciplinary, preventive, and therapeutic approaches and social changes are needed to address the complex interplay of biologic, genetic, and social factors that are involved. However, changes are extremely difficult to implement, for a number of reasons, and research is needed to understand the processes behind such changes. Therefore, it is important to know how to quantify the impacts of large scale diet shifts, since such shifts will inevitably have large impacts on how food chains are built up and managed.

“Health, Demographic Change and Wellbeing” is linked to the other six challenges of H2020, especially: “Food, Agriculture, Marine Research and the Bio-economy” and “Climate Action, Environment, Resource Efficiency and Raw Materials”. It will be critical therefore to make sure that the design of activities across each of these challenges is not done in isolation from the others and that Societal Challenge 1 is part of the whole package of actions that, together, will make what can be described as the great change to healthier diets and lifestyles across Europe.