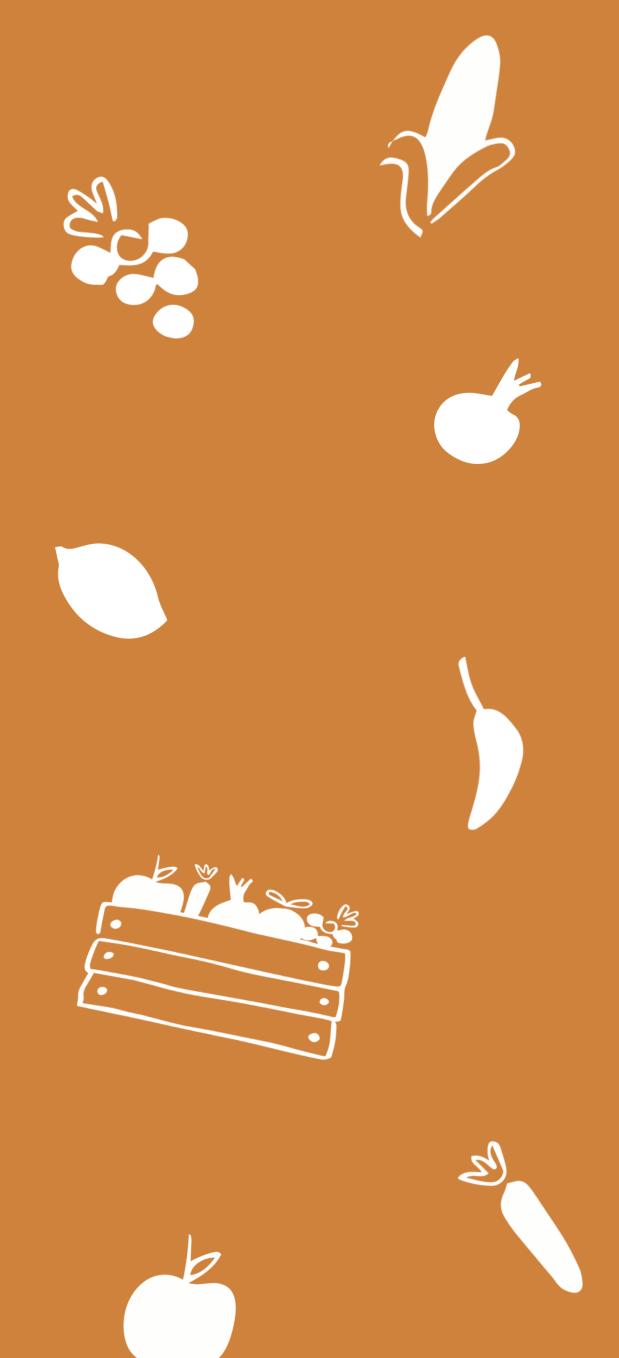




Can Innovative
Technologies Support
Production of
Healthier Foods?

Anita Kušar Policy Officer / DG Research and Innovation European Commission





# Can innovative technologies support production of healthier foods?

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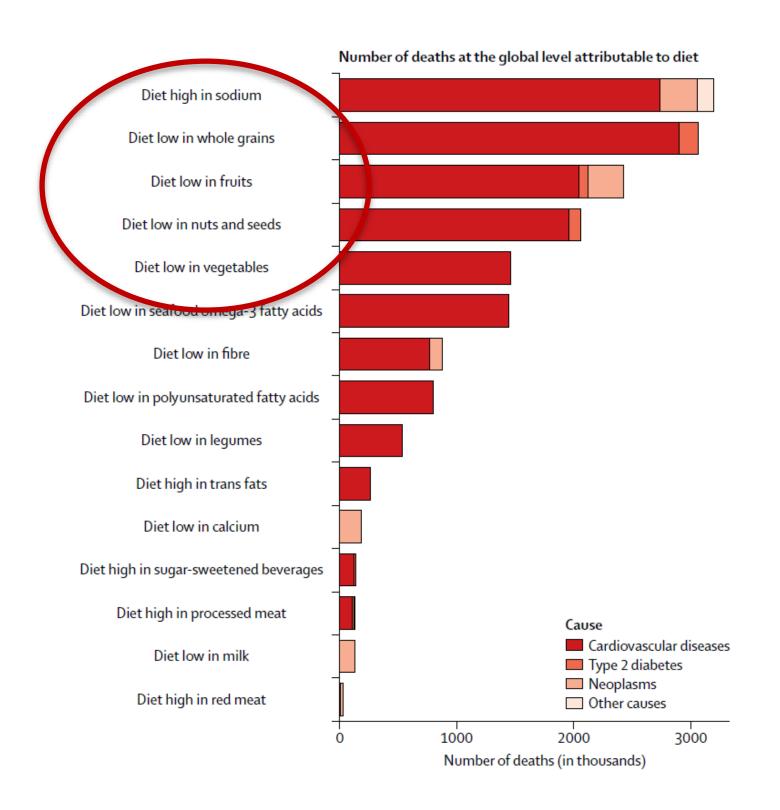




# Food systems and human health



- In the EU average intakes of energy, red meat, sugars, salt, and fats continue to exceed recommendations, consumption of fruit and vegetables, legumes, whole-grain cereals and nuts is insufficient<sup>1</sup>.
- It was estimated that in the EU in 2017 over 950,000 deaths (one out of five) were attributable to unhealthy diets <sup>2</sup>.
- Food systems have the potential to nurture human health.



<sup>1</sup>Willett W., Rockström J., et al., Lancet, 393(10170), 447-492 (2019) <sup>2</sup>Afshin A., Sur P. J., et al., Lancet, 393(10184), 1958-1972 (2019)





# Food systems and human health



- Moving to a more **plant-based diet** with more *fruits, wholegrains* and vegetables could reduce not only risks of life-threatening diseases, but also the **environmental impact of the food** system<sup>3</sup>.
- One of the important objectives of the European commission's Farm to fork Strategy is 'to increase the availability of healthy and sustainable food options' 4.

<sup>&</sup>lt;sup>4</sup> EC. Farm to Fork Strategy – for a fair, healthy and environmentally-friendly food system. https://ec.europa.eu/food/farm2fork\_en (Accessed on January 10th 2020)



<sup>&</sup>lt;sup>3</sup> FAO Sustainable healthy diets. Guiding principles. http://www.fao.org/3/ca6640en/CA6640EN.pdf (Accessed on April 6th 2022)





# Food systems and human health

- FOX stimulates short food supply chains for **fruit and vegetables** by applying small innovative mild processing technologies.
- One of FOX focuses was achieving the optimal physical and nutritional quality of fruit and vegetable products.



• To address sustainable diets<sup>5</sup>, the assessment of products' health dimension was evaluated.

<sup>5</sup> Green A., Nemecek T., et al., Global Food Security, 26, 100406 (2020)



# FOX methodological approach



- Evaluation of **nutritional quality** of newly developed foods was performed with *nutrient density index* <sup>6</sup>.
- The health nutritional index (HENI)<sup>7</sup> has been chosen for a systematic, comparative and holistic assessment of the *effects of foods on human health*.
- Newly developed foods with innovative mild processed technologies were compared with commonly consumed foods.
- Opportunities for communication on nutrition and health aspects were observed (nutrition and health claims)<sup>8</sup>

<sup>&</sup>lt;sup>8</sup> Reg. (EC) No 1924/2006 on nutrition and health claims made on foods. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:404:0009:0025:En:PDF. (Accessed on 21 May 2022)



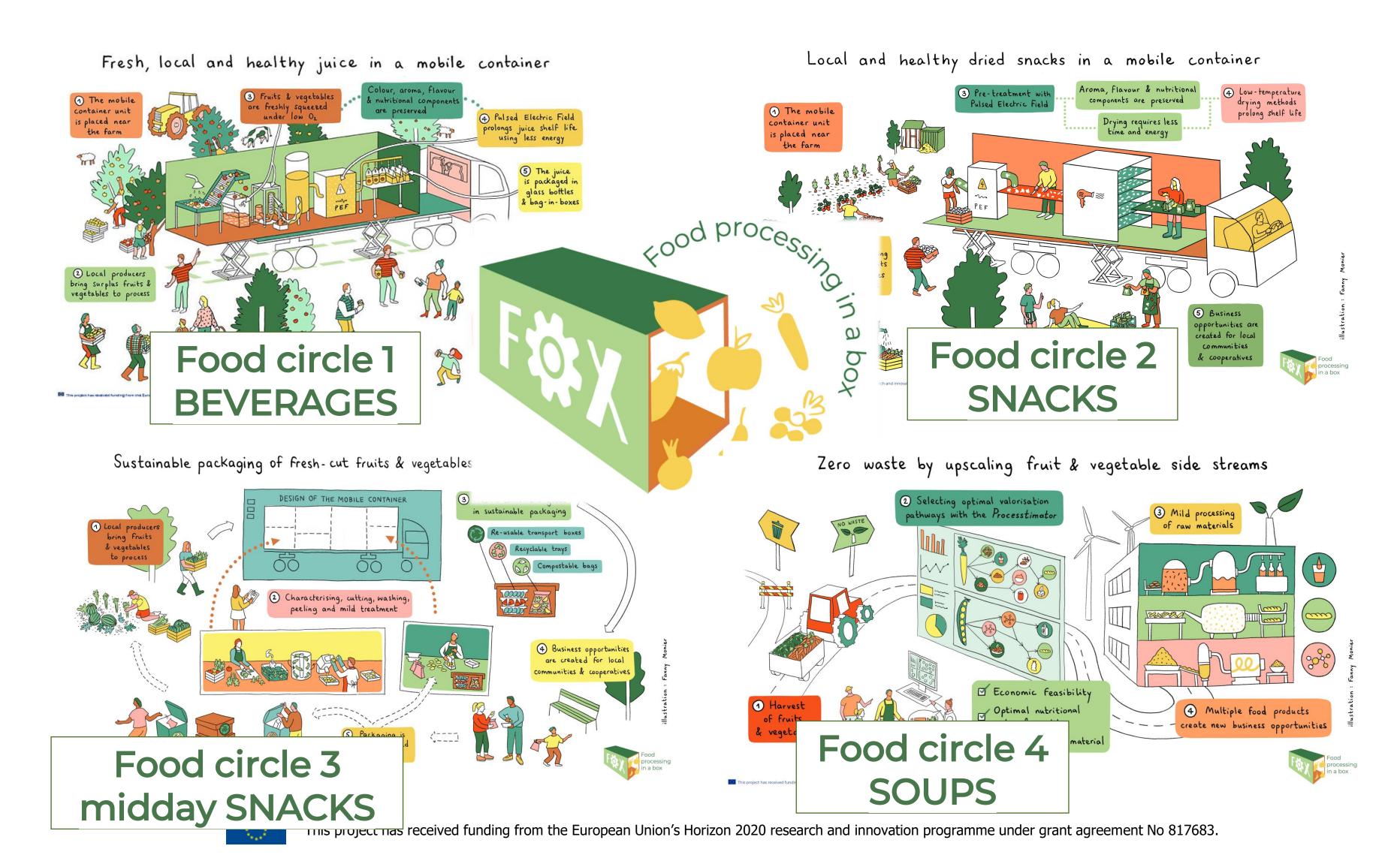
<sup>&</sup>lt;sup>6</sup> Drewnowski. Defining Nutrient Density: Development and Validation of the Nutrient Rich Foods Index. Journal of the American College of Nutrition, Vol. 28, No. 4, 421S–426S (2009)

<sup>&</sup>lt;sup>7</sup> Stylianou et al. Small targeted dietary changes can yield substantial gains for human health and the environment. Nature Food, vol 2, 616–627 (2021)







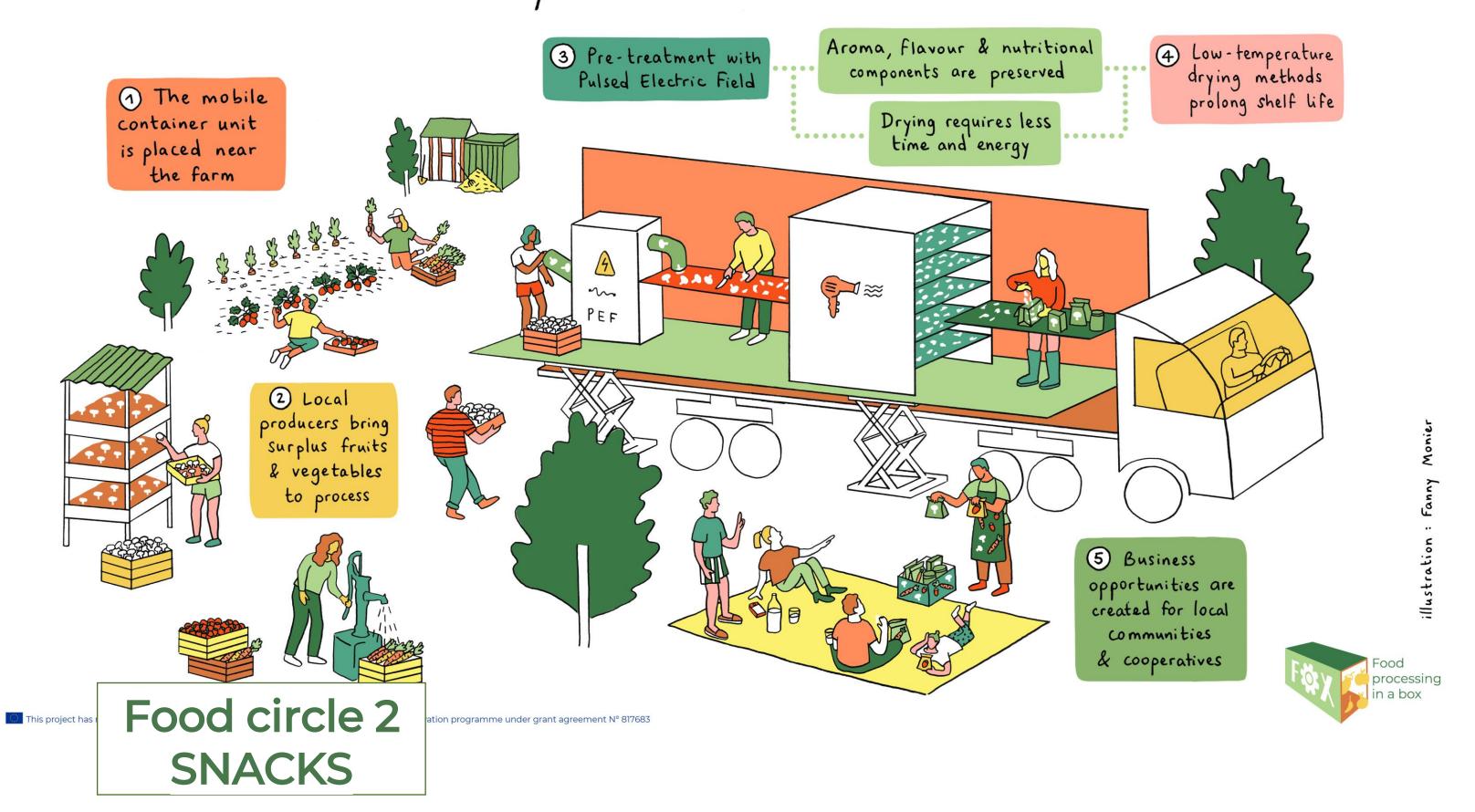






### FOX FOOD CIRCLE 2

Local and healthy dried snacks in a mobile container





# FOX methodological approach



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<sup>&</sup>lt;sup>9</sup> Open Platform for Clinical Nutrition – OPEN. Korošec et al. The Slovenian food composition database. Food Chem. 2013, 140, 495–499

<sup>&</sup>lt;sup>10</sup> Fineli—National Food Composition Database in Finland. https://fineli.fi/fineli/en/index. Accessed on 25 May 2022

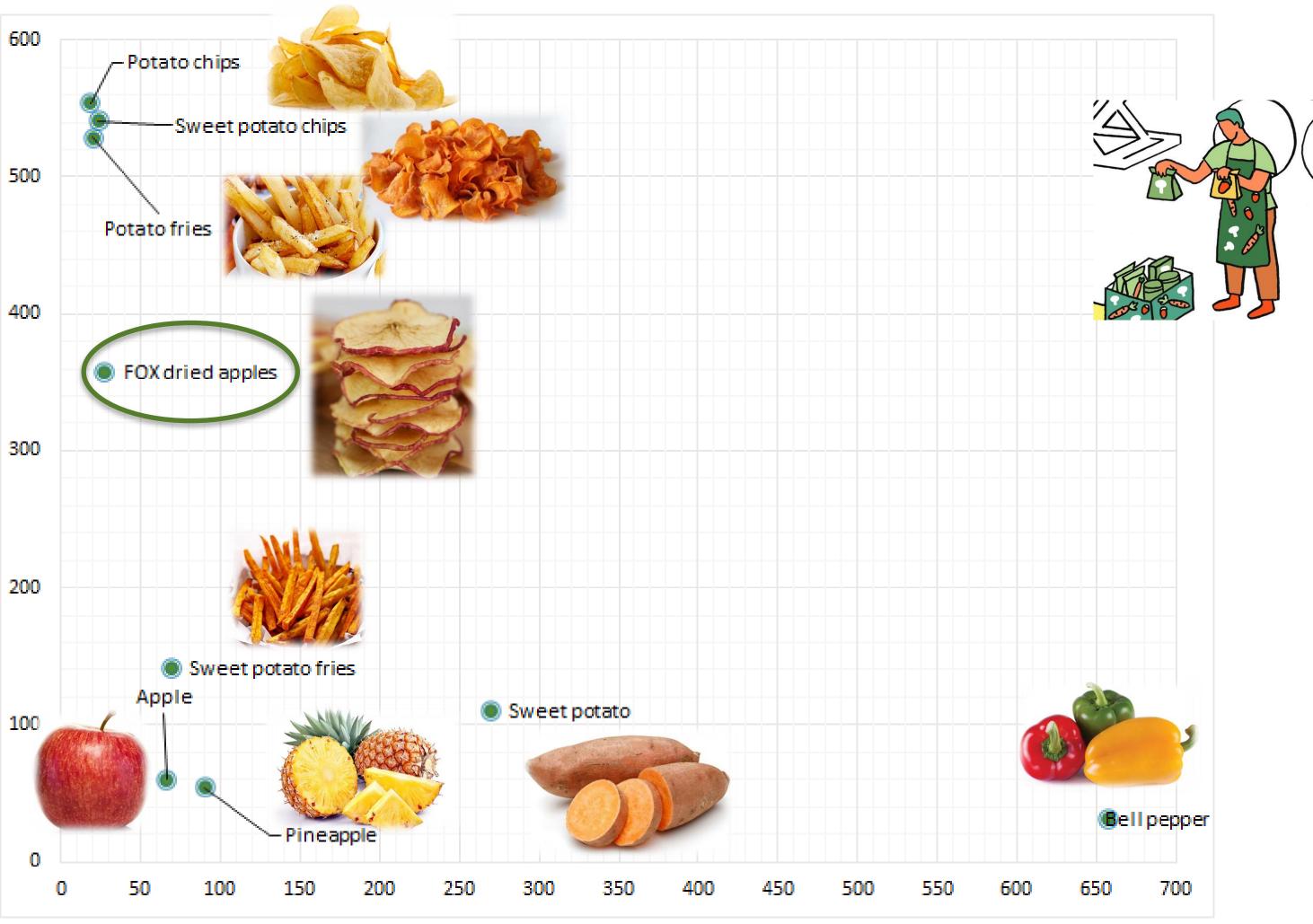
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817683.



# FOX results - Nutritional Quality





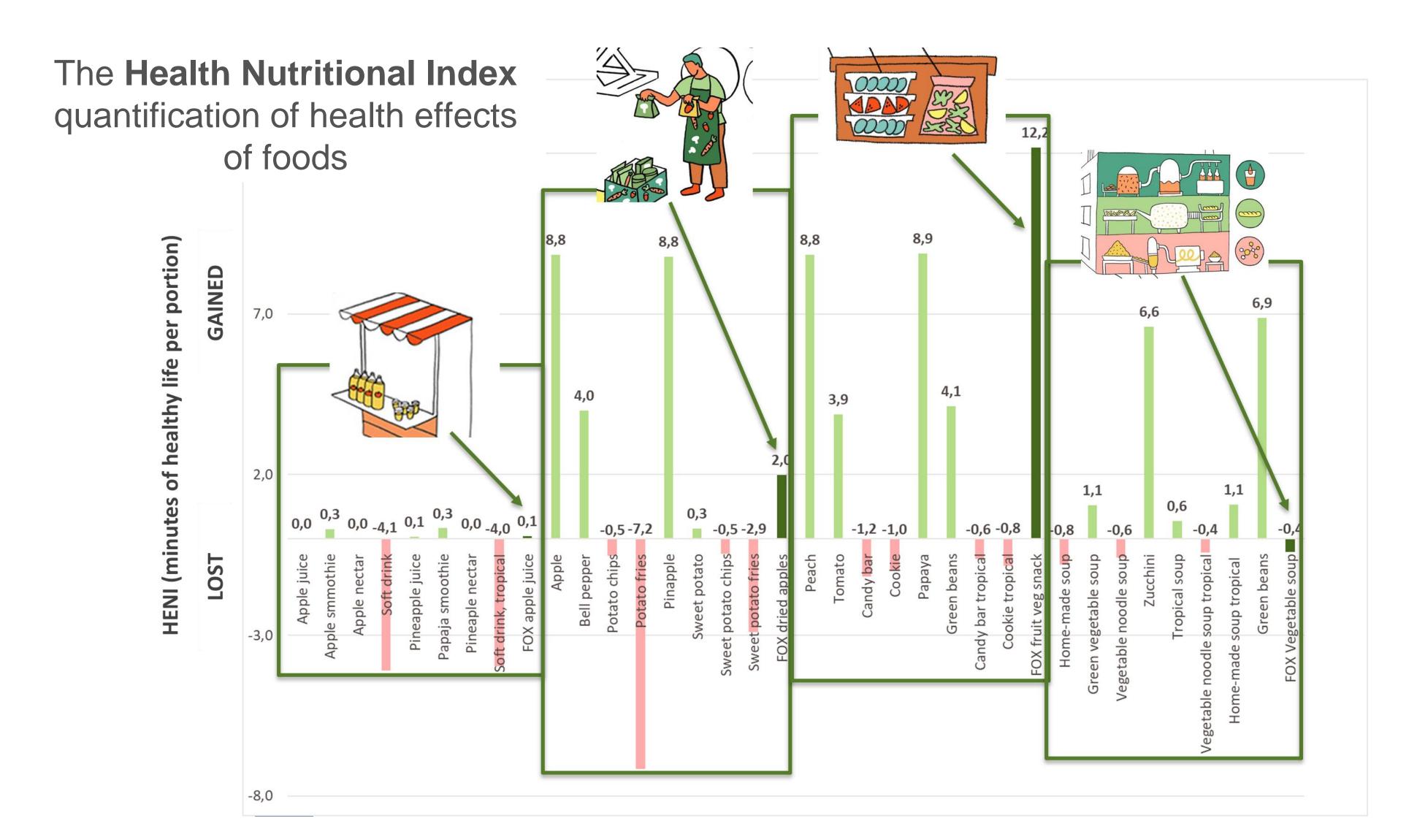


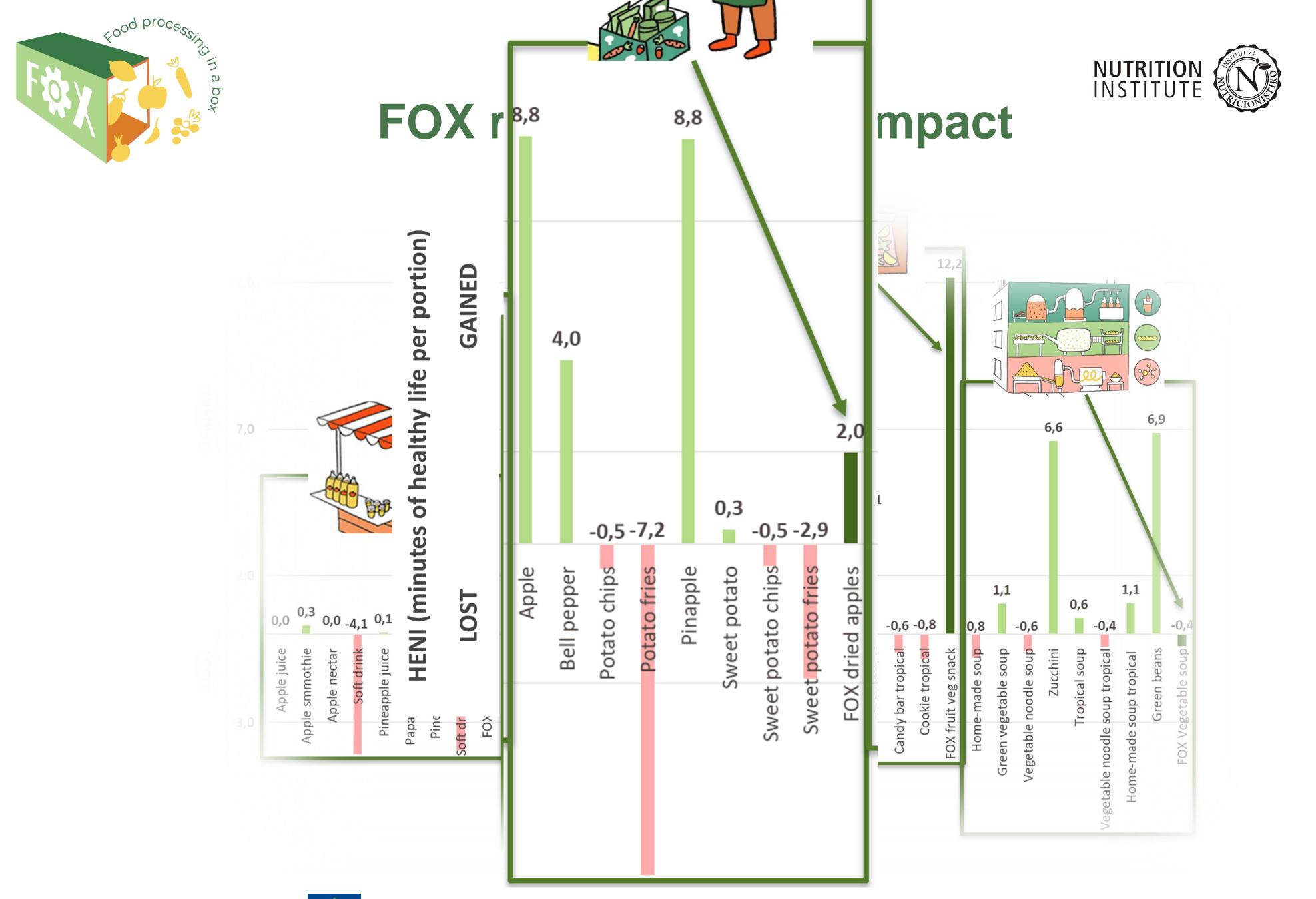
NRF 9.3 index score / 100 kcal





# FOX results – Health Impact









#### FOX Products – Promotion

#### FOX apple juice

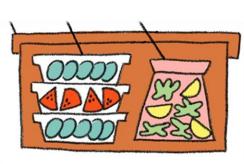


# FOX dried apples

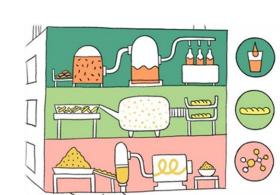


Potassium contributes to normal function of the nervous system.

FOX fruit veg salad



FOX soup





# Can innovative technologies Support production of healthier foods?

#### **CONCLUSIONS**

- Newly developed FOX technologies <u>enable</u> production of nutritious and healthy foods.
- Meal quality can be improved when commonly eaten foods (snacks) are replaced with FOX products.
- FOX products can be promoted by using nutrition and health claims.
- Nutritional *quality and health impact* of FOX products can be still improved by using **fruit or vegetable species** with higher nutritional value or by adding dietary fibres (presents also possibility of using side streams) or reducing salt content.



# Can innovative technologies Support production of healthier foods?

#### RECOMMENDATIONS

- YES, innovative technologies can support production of healthier foods.
- The evaluation of *nutritional quality and health impact* is needed and has to be incorporated into development of **new food technologies** (measured with available methods, assumtion /expectations vs. results).
- Innovations should focus into parameters with major impact on human health (nutrients to encourage/limit) and foods/ingredients with higher nutritional value (fruits, vegetables, nuts, whole grains, ...).



# WP7 – Task 7.3 Health Impact Assessment



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Many thanks to consortium for collaborative and friendly atmosfere. It was a pleasure to be a member.

# Thank you all for your attention!





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Sustainable Food Systems Network