



Best-ReMaP
Healthy Food for a Healthy Future

REFORMULATION AND PROCESSED FOOD MONITORING

Monitoring the food market for a
healthy Europe

Karine Vin, ANSES, WP 5

18.09.2023



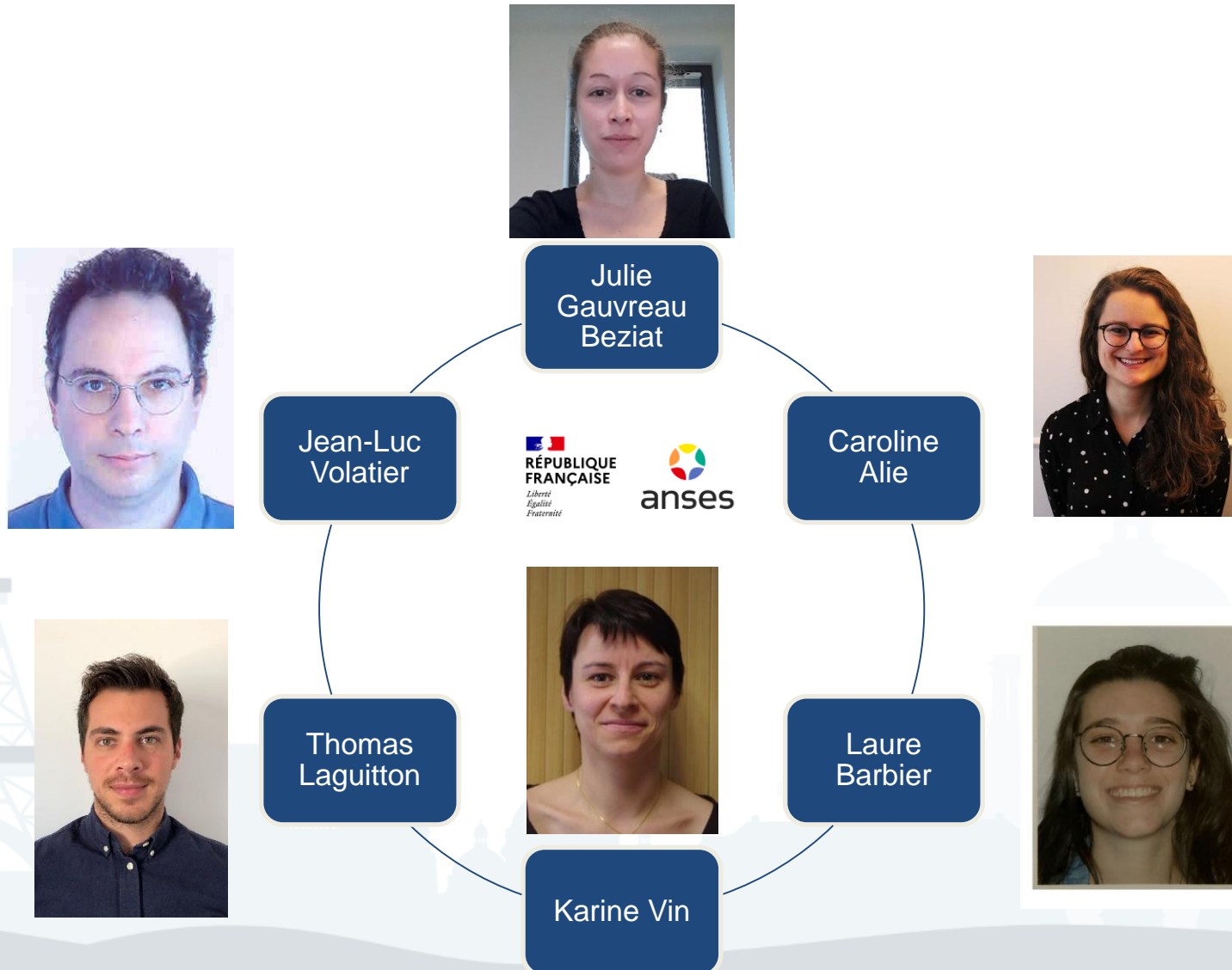
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REFORMULATION AND PROCESSED FOOD MONITORING

ANSES team

Thanks to the team and to all participating countries for their great work!



REFORMULATION AND PROCESSED FOOD MONITORING



Objectives and benefits of the WP5

Share and promote the best practices on how to implement a European sustainable monitoring system for processed food reformulation

The activities of this Work Package:

- ✓ Gives an overview of the **nutritional quality of the food**
- ✓ Allows **comparisons between countries**
- ✓ Provides data to evaluate and adapt **nutrition policies**
- ✓ Identifies best formulation to incite manufacturers **to improve the nutritional quality** of their products



Key information: nutritional quality monitoring / tool for nutrition policy / promoting reformulation

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Best-ReMaP key methods (based on JANPA - Joint Action on Nutrition and Physical Activity (2015-2017))

- ❑ **5 Priority food categories:** Bread products / Delicatessen meats / Soft drinks / Breakfast cereals / Fresh dairy products and desserts
- ❑ **Data collection: information available on labels** - pictures taken in shops. Crowdsourcing and webscraping tested but not validated
- ❑ **Data codification** in subcategories of products designed to monitor food reformulation by grouping products with similar sales name, manufacturing technology, recipe, or marketing positioning
 - Possible identification of best in class products
 - Identification of margin of reformulation
 - Possible comparison between countries
- ❑ **Indicators defined for the follow up** (food offer, nutritional values...)
- ❑ **Common tools and programs**
- ❑ **Quality checks** (classification, type of brand, consistency of data, outliers...)
- ❑ **Feed the common database developed by the JRC**
 - First database at European level
 - Branded composition data for 5 food categories and 19 countries

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Best-ReMaP data collections



- **First data collection for 4 countries:** Bosnia and Herzegovina, Croatia, Ireland and Poland

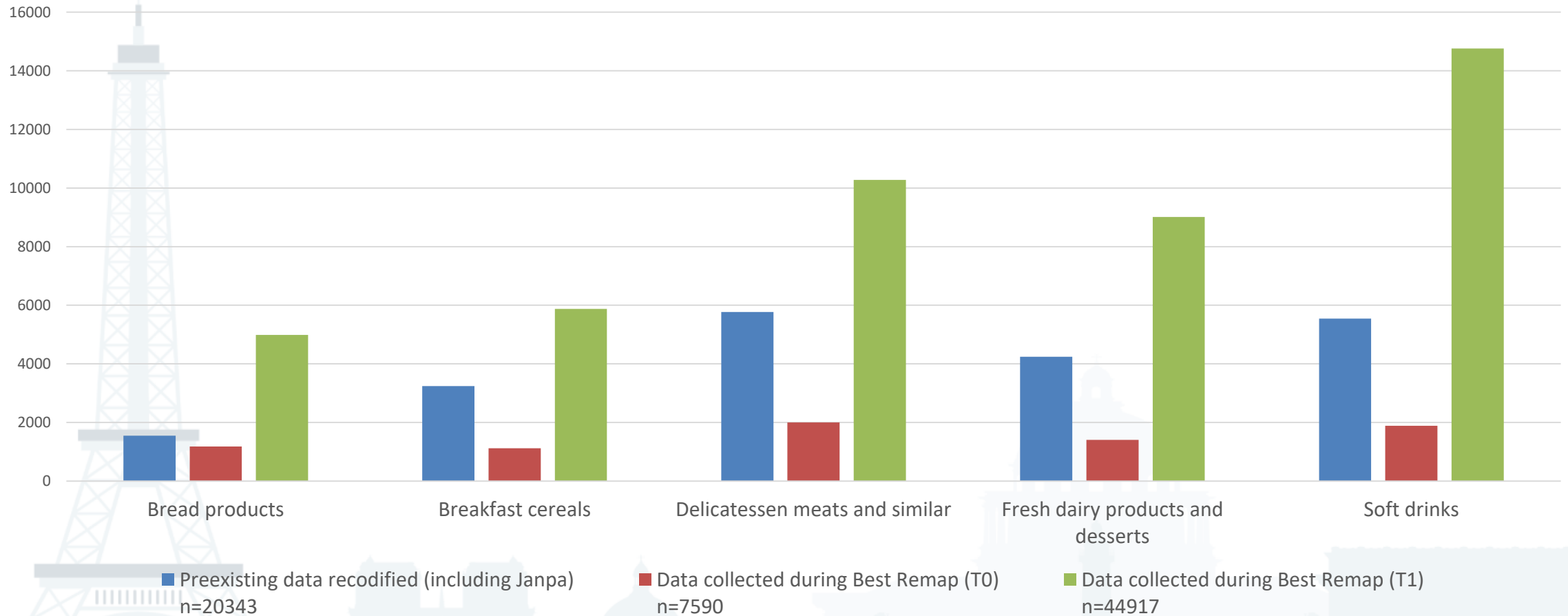
- **Follow up for 14 countries:** Austria, Belgium, Bulgaria, Denmark, Estonia, Finland, Germany, Greece, Hungary, Italy, Malta, Portugal, Romania and Slovenia

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Best-ReMaP data collections

Number of products collected or classified during BestRemap



≈ 20 000 products recodified (pre-existing data)
≈ 52 000 products collected during Best -ReMap

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Preliminary results

WP5's main outputs

- ❑ Dissemination of the methodology for data collection, data codification and production of indicators
- ❑ In order to combine consumption data with composition data at the brand level: link between Best-ReMaP subcategories and FoodEx2 classification
- ❑ Data collection (more than 50 000 products collected and encoded)

But

- ❑ Very little time left for data analysis
- ❑ Time gap different in the participating countries (caution to be taken when comparing the results of different countries)
- Production of preliminary results only
- Presentation of examples to illustrate the added value of the monitoring but no conclusion at this point
- Continuation of the study in the next JA Prevent-NCD in order to analyse the data and link the results with countries nutrition policies

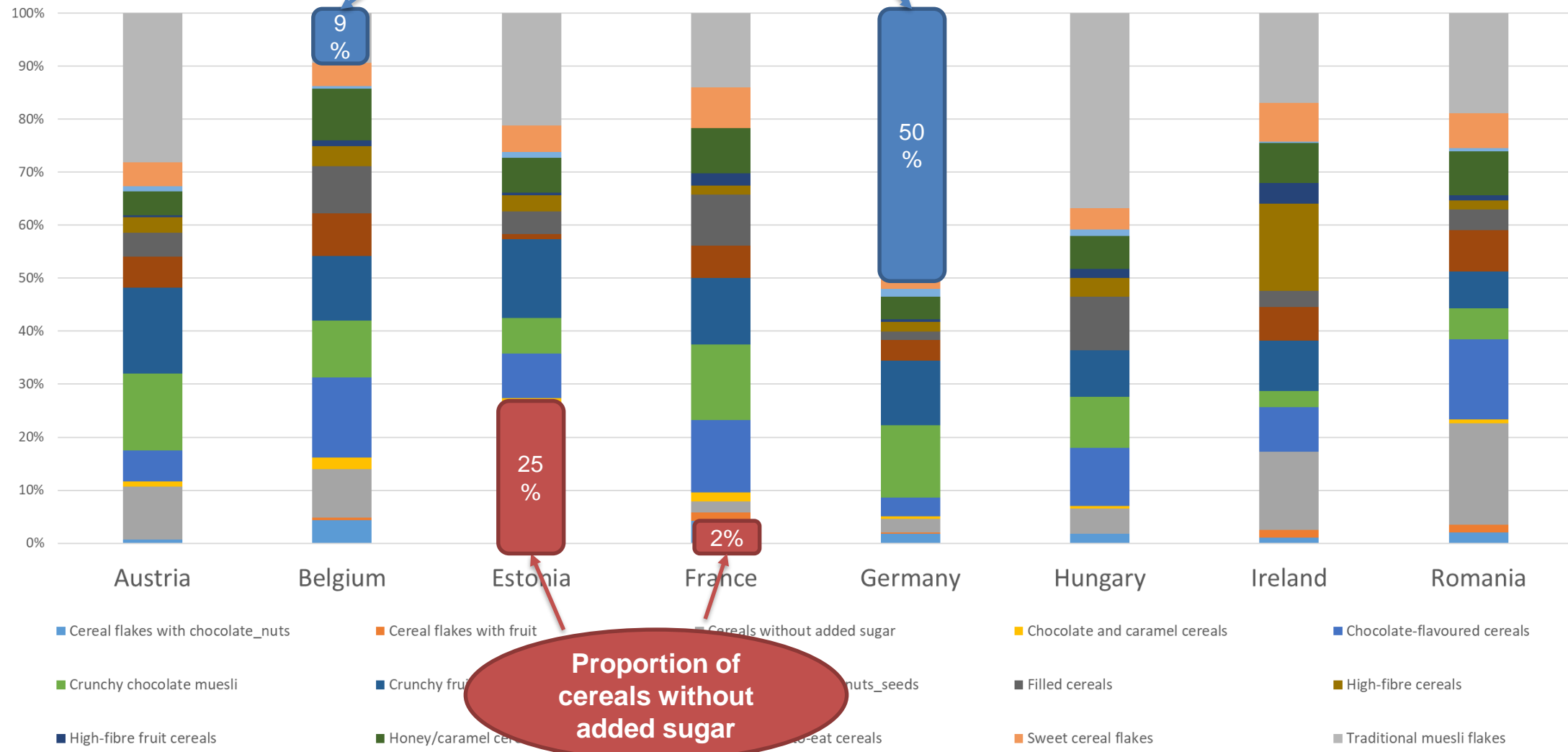
REFORMULATION AND PROCESS MONITORING



Preliminary results: Analysis of the food offer for breakfast cereals (T1 data collection)

Proportion of traditional muesli flakes

Proportion of cereals without added sugar



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Preliminary results: first conclusions of the comparison of the food offer

All countries with 13 to 15 subcategories of cereals but:

- 14 subcategories with more than 10 products in France
- 7 subcategories with more than 10 products for Hungary

- Differences in the proportions of the subcategories

Different food offer

Necessity to work:

- At the country level
- At the subcategory level

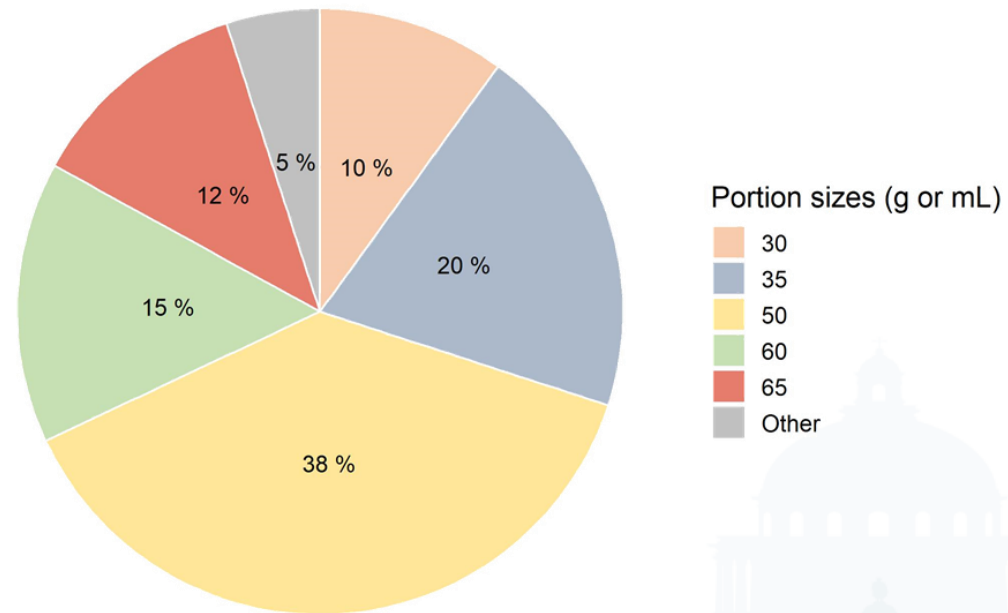
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Preliminary results: analysis of the portion sizes - example: Breakfast cereals in Croatia

Proportion of the five most represented portion sizes among collected products, by subcategory

Breakfast cereals : Traditional muesli flakes (n=40)



Portion sizes vary from 30g to 65g, with 68% of products with a portion size \leq 50g.

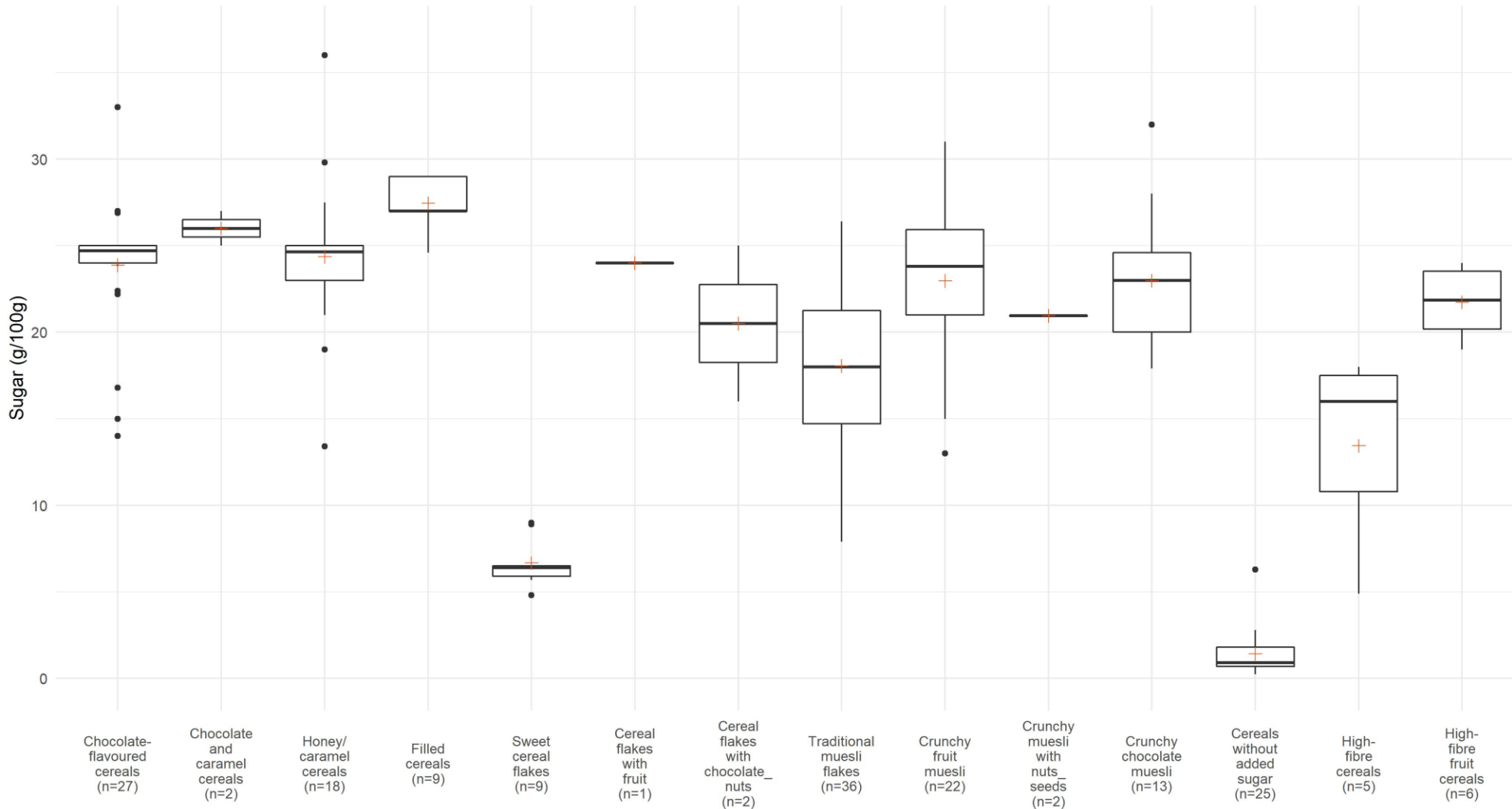
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Preliminary results: analysis of the nutritional quality of the food offer, by subcategory of product – example: Poland (T0)



Sugar distribution among subcategories

Breakfast cereals (n=177)

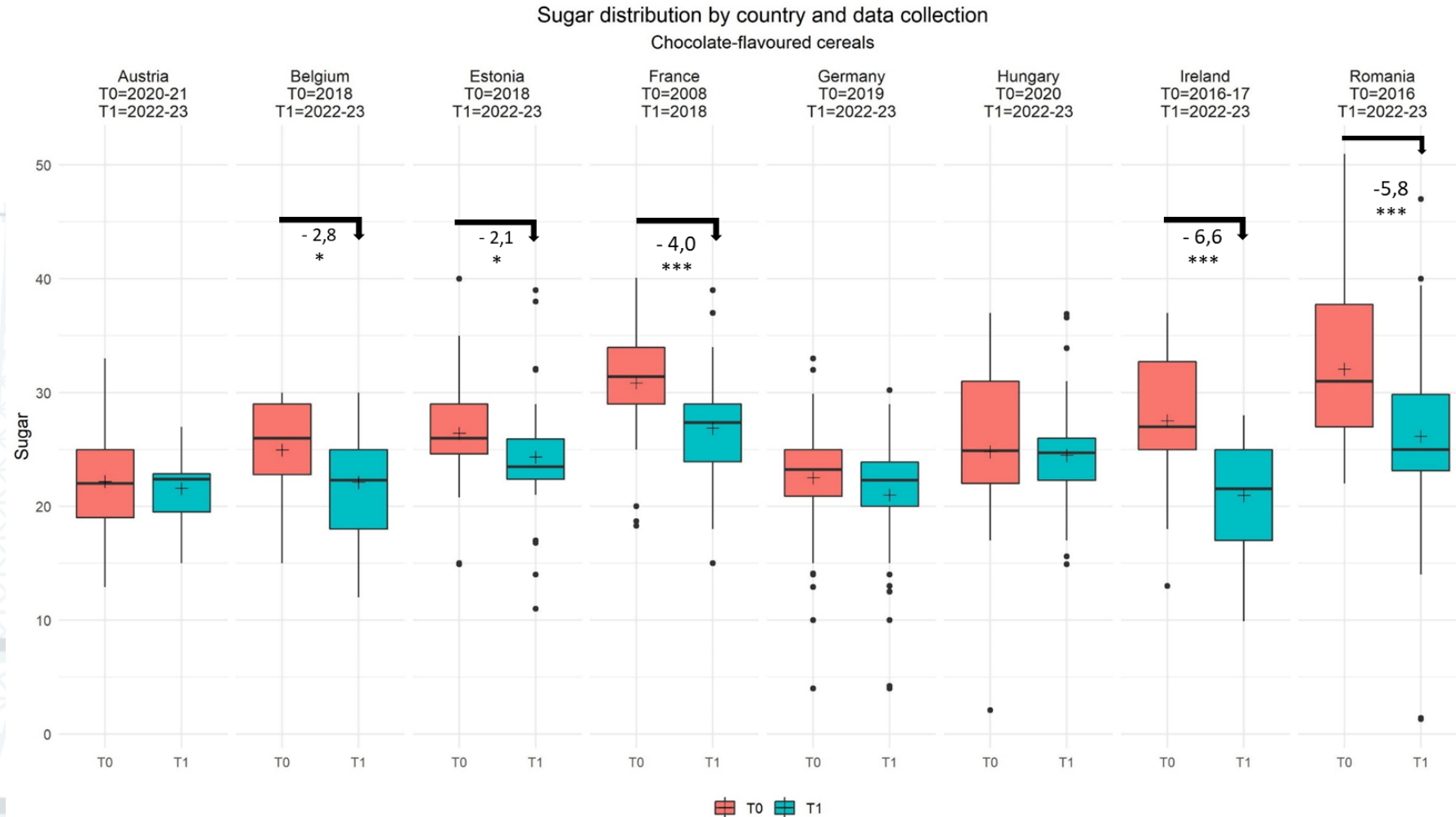


- Variation of mean values depending on the subcategory
- Variability highly dependant of the subcategory of product

→ All statistical analyses have to be done at the subcategory level

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Preliminary results: comparison of trend analysis - example: chocolate-flavoured cereals



Mean values and variability highly dependant of the country

- No extrapolations from one country to another
- Possible establishment of benchmark and identification of best reformulation efforts by comparison of results **for a given time period**
- Different time gaps / preliminary results – the significant evolutions are for the countries with the highest gap between T0 and T1

REFORMULATION AND PROCESSED FOOD MONITORING

European comparisons of the processed food composition evolution on nutrient intakes



Overview of the methodology to calculate food intakes

Description of Best-RemaP
subcategories in FoodEx2
baseterms

Composition data (g/100g)

X

Consumption data (g/day)

(Foodex base-term) from the Efsa Comprehensive
European Food Consumption database

Intakes (g/day) at T0 and T1

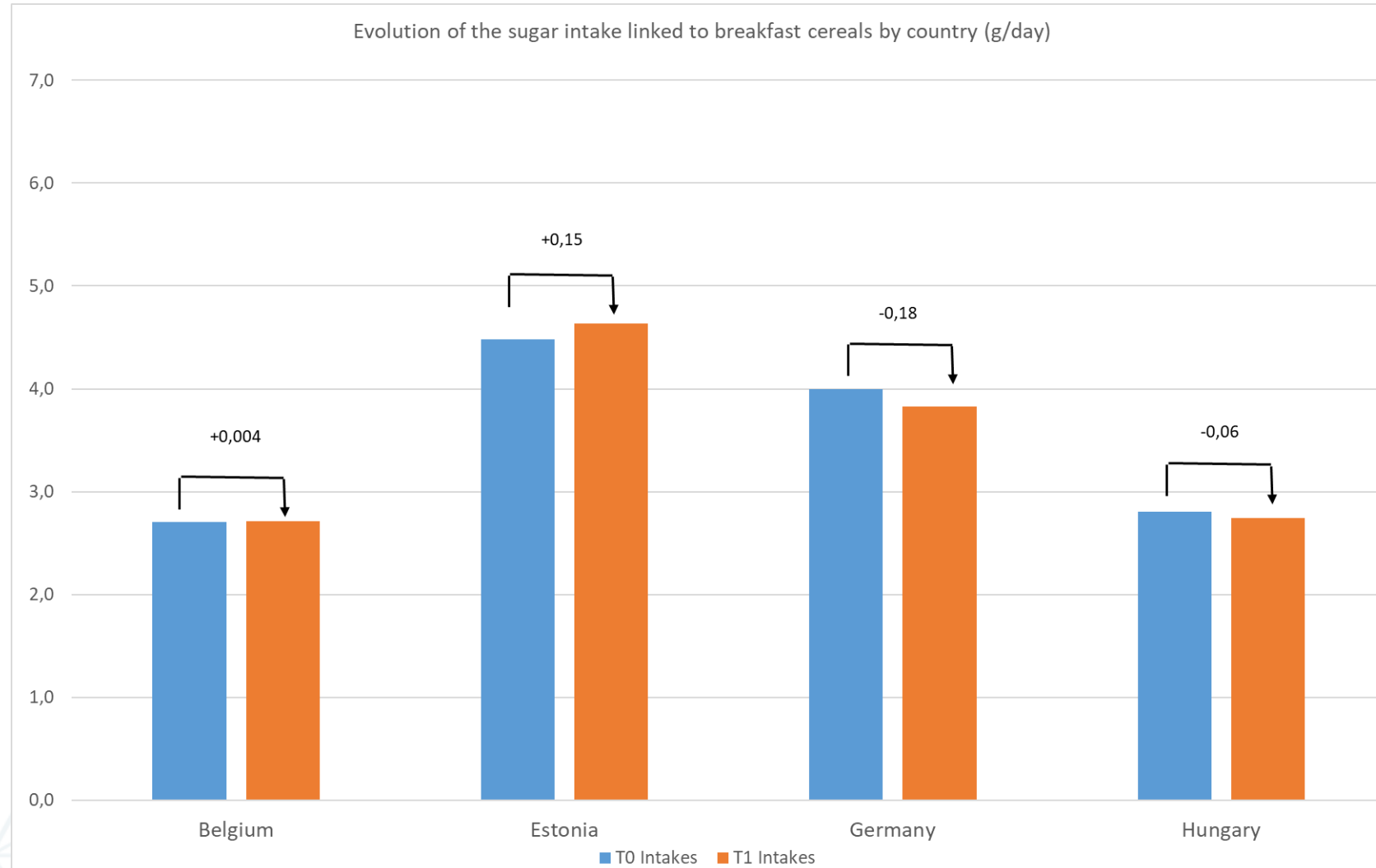
Sugar
Saturated fat
Fat
Salt

Children (3 to 9 years old)
Adolescents (10-17 years old)
Adults (18-64 years old)

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Preliminary results: evolution of the sugar intake for children – example: breakfast cereals



/!\ Different time gaps depending on the countries

Only 2 to 4 years between the 2 snapshots

Impact existing but somehow limited, not always in the direction of recommendations and dependant of the country

→ Necessity to extend the monitoring to the other food categories to cover the whole diet and to link the results with food policies (Prevent-NCD)

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Does food composition evolution has the same impact on nutrient intakes for all socio economic status ? Case study for France

Evolution (%) of the 5 categories's contribution to total intakes in France		Primary/secondary school	High school	Degree Bac +1/+3	Degree Bac+4/more
Sugar	Children	-1,4	-1,7	-1,6	-1,47
	Adolescents	-1,7	-1,5	-1,6	-1,7
	Adults	-1,0	-1,2	-1,1	-1,1
Salt	Children	-0,29	-0,56	-0,40	-0,23
	Adolescents	-0,60	-0,71	-0,65	-0,84
	Adults	-0,29	-0,31	-0,22	-0,37
Saturated fat	Children	+0,03	-0,04	-0,1	-0,21
	Adolescents	-0,5	-0,4	-0,6	-1,0
	Adults	-0,1	+0,05	+0,3	-0,1
Fibre	Children	+0,4	+0,2	+0,04	+0,19
	Adolescents	+0,3	+0,3	+0,1	+0,12
	Adults	+0,1	+0,1	+0,3	+0,28

Comparable and (mostly) positive impact of the evolutions of the nutrient intake regardless the social class
 → Nutritional evolutions (including reformulations) benefit all populations groups including those from lower social classes and can contribute to the reduction of health inequities (France)

REFORMULATION AND PROCESSED FOOD MONITORING

Conclusions of the WP5 (based on preliminary results)



- ❑ Data collection
 - Unprecedented number of branded data collected and codified according to the same sub-categories and linked with pre-existing data in order to study reformulations
 - Link with FoodEx2 established in order to merge with consumption data

- ❑ Comparison between countries (preliminary results on some countries)
 - Important differences in the food offer
 - High variability of the nutritional content regarding the subcategory of product and the country
 - *Necessity to work at the country and the subcategory level*

- ❑ Impact of food composition evolution (including reformulation) on nutrient intakes (preliminary results on some countries)
 - The impact exists but can be limited and not always in the direction of recommendations
 - Differs among countries
 - Benefits all social categories (evaluated only for France): reduction of health inequities



What we have achieved

- Specific classification system designed to follow reformulations
- Methodological developments
- Common methodology and tools allowing comparisons disseminated around Europe
- Quality checks to ensure reliability of the data
- Common database developed by the JRC to gather and make the data available to all



What we will be able to do (premises during Best-ReMap)

- Analysis of the food offer
- Follow up of reformulations
- Comparison of nutritional content across Europe and identification of margins of reformulation
- Assessment of food policies



What we will do after Best-ReMap

- Continuation of the actions of WP5 in the next JA present-NCD : analyses of all the data gathered during Best ReMap / JANPA / Euremo in link with nutrition policies



What we need to promote

- Necessity to continue regularly the monitoring and to extend it to the other food categories / countries
- Need to encourage reformulation, on the basis of benchmarks across Europe



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Thank you for your attention!

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Joint Action on implementation of validated best practices in nutrition
(Reformulation, Marketing and Public Procurement)



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WP5 food reformulation

Public policies to stimulate food reformulation

Dr Stefanie Vandevijvere, Sciensano
18.09.2023



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Impact of food reformulation on individuals' behaviour, nutrient intakes and health status



SUPPLEMENT ARTICLE | [Open Access](#) |

What is the impact of food reformulation on individuals' behaviour, nutrient intakes and health status? A systematic review of empirical evidence

Mathilde Gressier Boyd Swinburn, Gary Frost, Alexa B. Segal, Franco Sassi

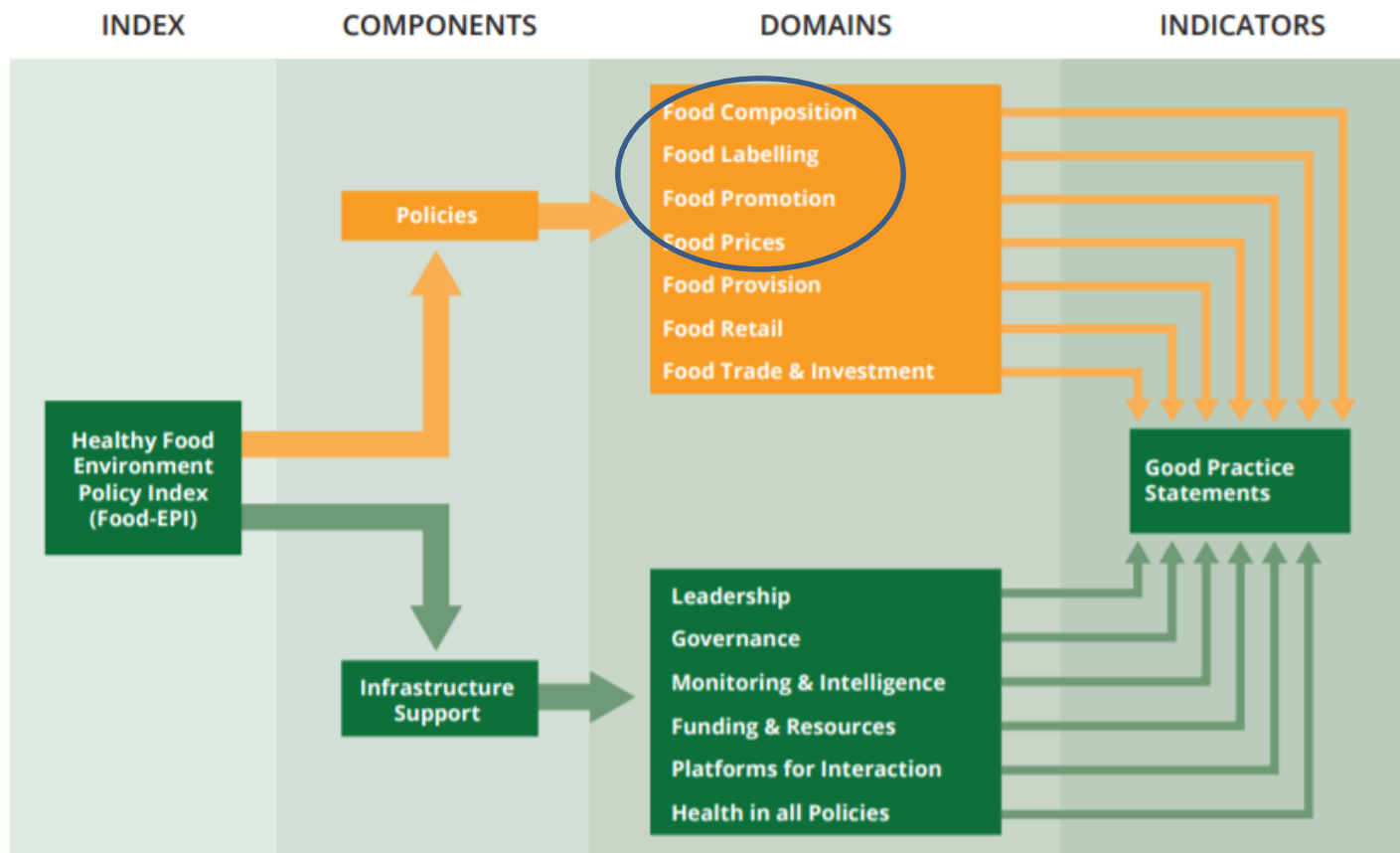
- Fifty-nine studies (in 35 papers)
- Most studies examined food choices (n = 27) and dietary intakes (n = 26). The nutrients most frequently studied were sodium (n = 32) and trans fatty acids (TFA, n = 13).
- Reformulated products were **generally accepted** and purchased by consumers, which led to improved nutrient intakes in 73% of studies.
- Two meta-analyses showing, respectively, a -0.57 g/day (95%CI, -0.89 to -0.25) **reduction in salt intake** and an effect size for **TFA intake reduction** of -1.2 (95% CI, -1.79 to -0.61).
- Only six studies examined effects on health outcomes, with studies on **TFA reformulation** showing overall improvement in **cardiovascular risk factors**.
- For **other nutrients**, it remains **unclear** whether observed improvements in food choices or nutrient intakes may have led to an improvement in health outcomes.



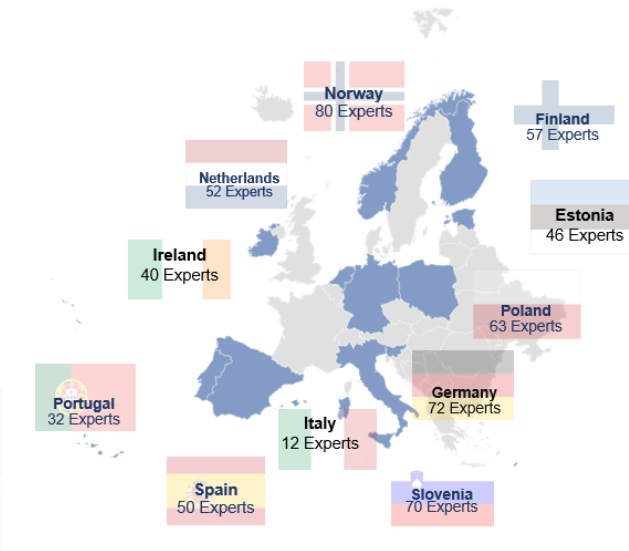
Science and Technology in childhood Obesity Policy

WP5 food reformulation

Public policies to stimulate food reformulation



Implemented in 11 EU countries



WP5 food reformulation



Public policies to stimulate food reformulation



Country	Food composition	Food labeling	Food marketing	Food prices	Food provision	Food retail	Leadership	Governance	Monitoring	Funding	Platforms	Health in all policies
Estonia	LOW	LOW	LOW	LOW	MEDIUM	LOW	MEDIUM	MEDIUM	MEDIUM	MEDIUM	LOW	MEDIUM
Finland	HIGH	LOW	MEDIUM	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	HIGH	HIGH
Germany	LOW	LOW	VERY LOW	VERY LOW	LOW	VERY LOW	MEDIUM	LOW	MEDIUM	LOW	LOW	VERY LOW
Ireland	LOW	LOW	LOW	MEDIUM	MEDIUM	LOW	MEDIUM	HIGH	MEDIUM	MEDIUM	MEDIUM	MEDIUM
Italy	LOW	LOW	LOW	LOW	MEDIUM	LOW	MEDIUM	MEDIUM	MEDIUM	LOW	VERY LOW	LOW
Netherlands	LOW	LOW	LOW	LOW	LOW	LOW	MEDIUM	MEDIUM	HIGH	MEDIUM	MEDIUM	LOW
Norway	MEDIUM	MEDIUM	MEDIUM	LOW	MEDIUM	LOW	MEDIUM	HIGH	MEDIUM	HIGH	MEDIUM	MEDIUM
Poland	MEDIUM	MEDIUM	LOW	MEDIUM	LOW	VERY LOW	LOW	LOW	MEDIUM	MEDIUM	MEDIUM	LOW
Portugal	HIGH	LOW	MEDIUM	MEDIUM	MEDIUM	LOW	HIGH	MEDIUM	MEDIUM	LOW	MEDIUM	LOW
Slovenia	MEDIUM	LOW	MEDIUM	VERY LOW	MEDIUM	VERY LOW	MEDIUM	MEDIUM	MEDIUM	MEDIUM	MEDIUM	MEDIUM
Spain	LOW	LOW	LOW	LOW	LOW	VERY LOW	MEDIUM	LOW	MEDIUM	LOW	LOW	LOW

WP5 food reformulation

Public policies to stimulate food reformulation

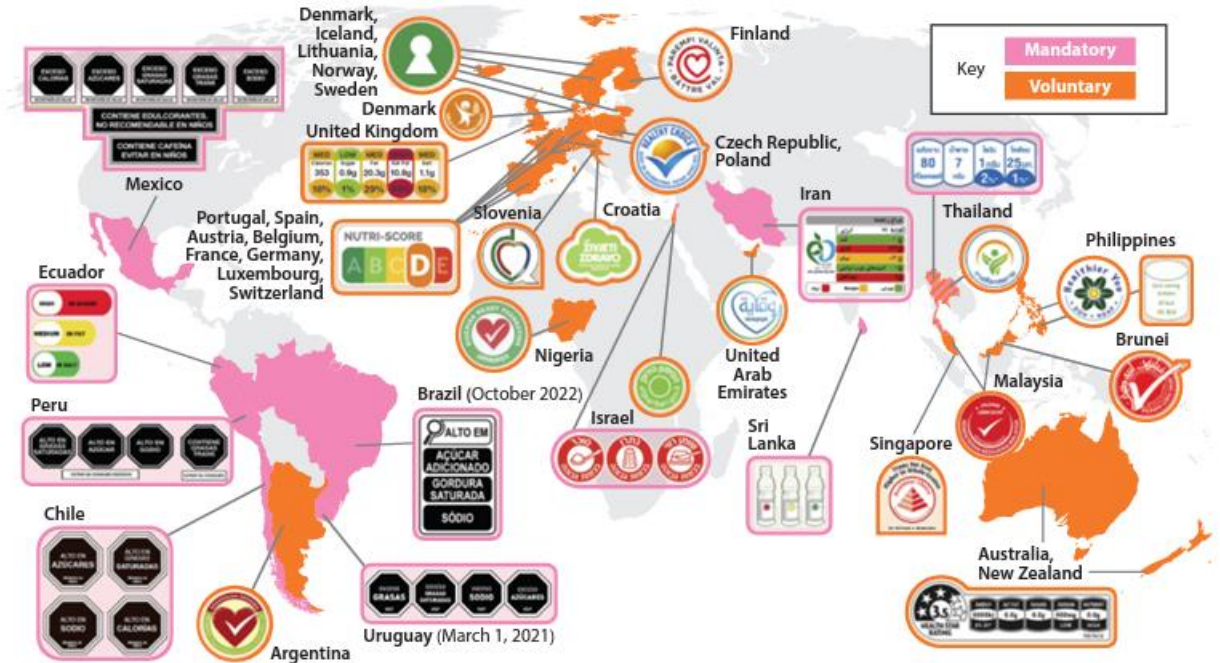


Front-of-pack nutrition labeling



Annual Review of Nutrition
The Influence of Front-of-Package Nutrition Labeling on Consumer Behavior and Product Reformulation

Christina A. Roberto,¹ Shu Wen Ng,² Montserrat Ganderats-Fuentes,¹ David Hammond,³ Simon Barquera,⁴ Alejandra Jauregui,⁵ and Lindsey Smith Taillie²



Results suggest that front-of package labeling systems consistently led to improvements in the nutritional profile of foods and drinks, though effects can be limited for some voluntary systems.

WP5 food reformulation



Public policies to stimulate food reformulation

Front-of-pack nutrition labeling



- The vast majority (83%) of products displaying the star rating in 2016 had been reformulated (defined as at least a 5% change in a key nutrient) since the system's implementation in 2014. The amount of reformulation was greater in labeled products than in non-labeled products (though non-labeled products were healthier at baseline). The majority of products that displayed the Health Star Rating also had ratings in the top half of the range (i.e., 3.0–5.0 stars)
- A more recent analysis examining uptake over time between 2014 and 2019 reported that the Health Star Rating system appeared on 41% of eligible products, though this was skewed toward products considered to be healthier with higher ratings (products with the logo had a mean star rating of 3.4 versus 2.6 for products without the logo)
- A cost-effectiveness analysis of the reformulation driven by the labeling system estimated that it would lead to small changes in population energy intake that would likely translate to reductions in body weight (−0.01 kg if voluntary and −0.11 kg if mandatory)

Herrera et al, 2018; Ni Mhurchu et al, 2017; Shahid et al, 2020

WP5 food reformulation



Public policies to stimulate food reformulation

Front-of-pack nutrition labeling



- After the first phase of Chile's Food Labeling and Advertising law, the percentage of products qualifying for a high-in-sugar label went from 80% to 60%, while the proportion qualifying for a high-in sodium label went from 74% to 27%. There was, however, very little change in the proportion of products containing a label for saturated fat or calories.
- Following label implementation, the distribution of nutrients of concern for most food groups moved just below the nutrient cut offs, and this change suggests that the companies are reformulating just enough to avoid the label
- The use of any nonnutritive sweeteners increased from 37.9 to 43.6% ($p < 0.001$) after the law's implementation. Concern that products high in sugar are being reformulated by increasing noncaloric sweetener content, important to monitor the use of noncaloric sweeteners in the food supply

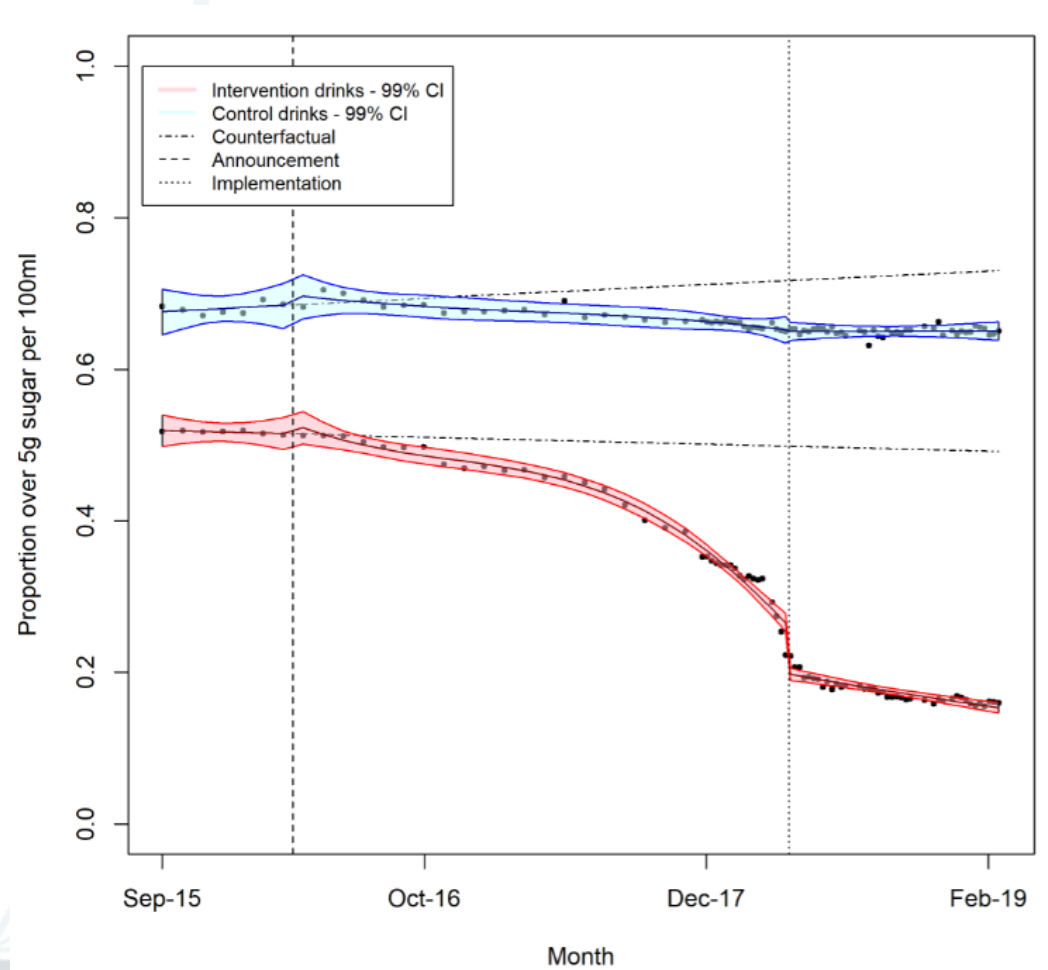
Reyes et al, 2020; Zacheta Ricardo et al, 2021

WP5 food reformulation



Public policies to stimulate food reformulation

Fiscal policies



UK sugar levy manufacturers of soft drinks containing more than 5g of sugar per 100ml have been made to pay a levy of 18p a litre, or 24p a litre for sugar content over 8g per 100ml, since the tax came into force in April 2018.

Scarborough et al, 2021

WP5 food reformulation




Public policies to stimulate food reformulation

Fiscal policies

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<https://doi.org/10.1093/eurpub/ckad157>

Effective policies to promote sugar reduction in soft drinks: lessons from a comparison of six European countries

Olivier Allais ¹, Géraldine Enderli², Franco Sassi³, Louis-Georges Soler¹

- Comparing trends in sugar content of 10 695 **new SSBs** launched between 2010 and 2019 in six European markets, including the UK and France (**taxes** designed to incentivise reformulation), the Netherlands (policy based on **voluntary agreements** to reduce sugar), Germany, Italy and Spain (**no national policies**)
- The announcement in 2016 and adoption in 2018 of the UK tax led to yearly reductions in average sugar content of 17% (95% CI: 15-19%) to 31% (13-48%) between 2016 and 2019, compared to 2015, while the 2018 French tax produced a 6% (95% CI: 5-7%) sugar reduction only in 2018, compared to 2017, shortly after it was redesigned to provide a stronger incentive for reformulation.
- Voluntary agreements implemented in the Netherlands in 2014 led to an 8% (95% CI: 4-13%) sugar reduction only in 2015, compared to 2013.
- Sugar **reductions** in new SSBs have been **greater** in countries that have adopted **specific policies** to encourage them; a **sugar-based tax design** encourages more sugar reductions than a volume-based tax design; **the tax rate and the amount of the tax reduction** from switching to the next lower tier in a sugar-based tax design may be critical to incentivize reformulation.

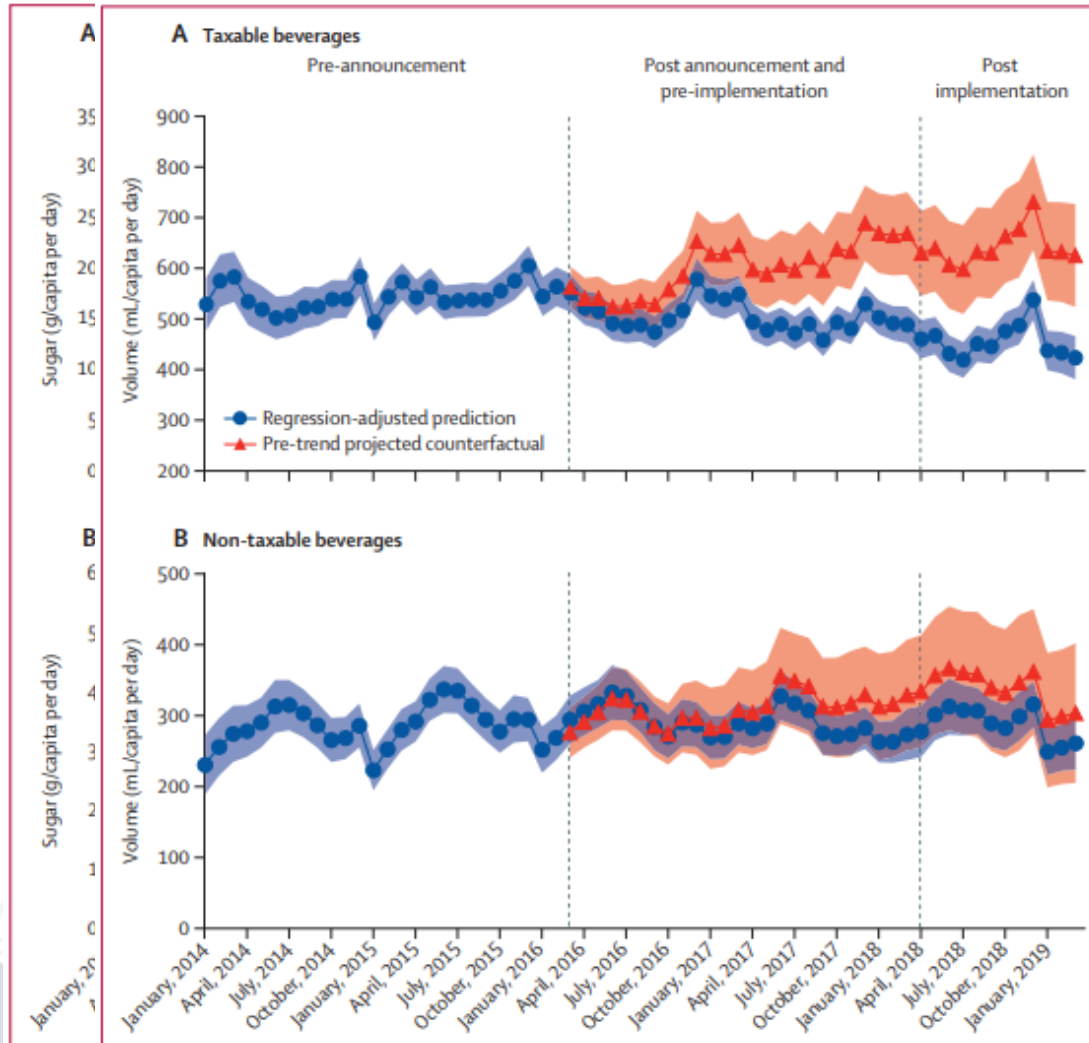


WP5 food reformulation



Public policies to stimulate food reformulation

Fiscal policies



In **2016**, South Africa **announced** an intention to levy a tax on sugar-sweetened beverages (SSBs).
In **2018**, the country **implemented** an SSB tax known as the Health Promotion Levy (HPL): 0,021 rand per gram of sugar (10% of the price/L)

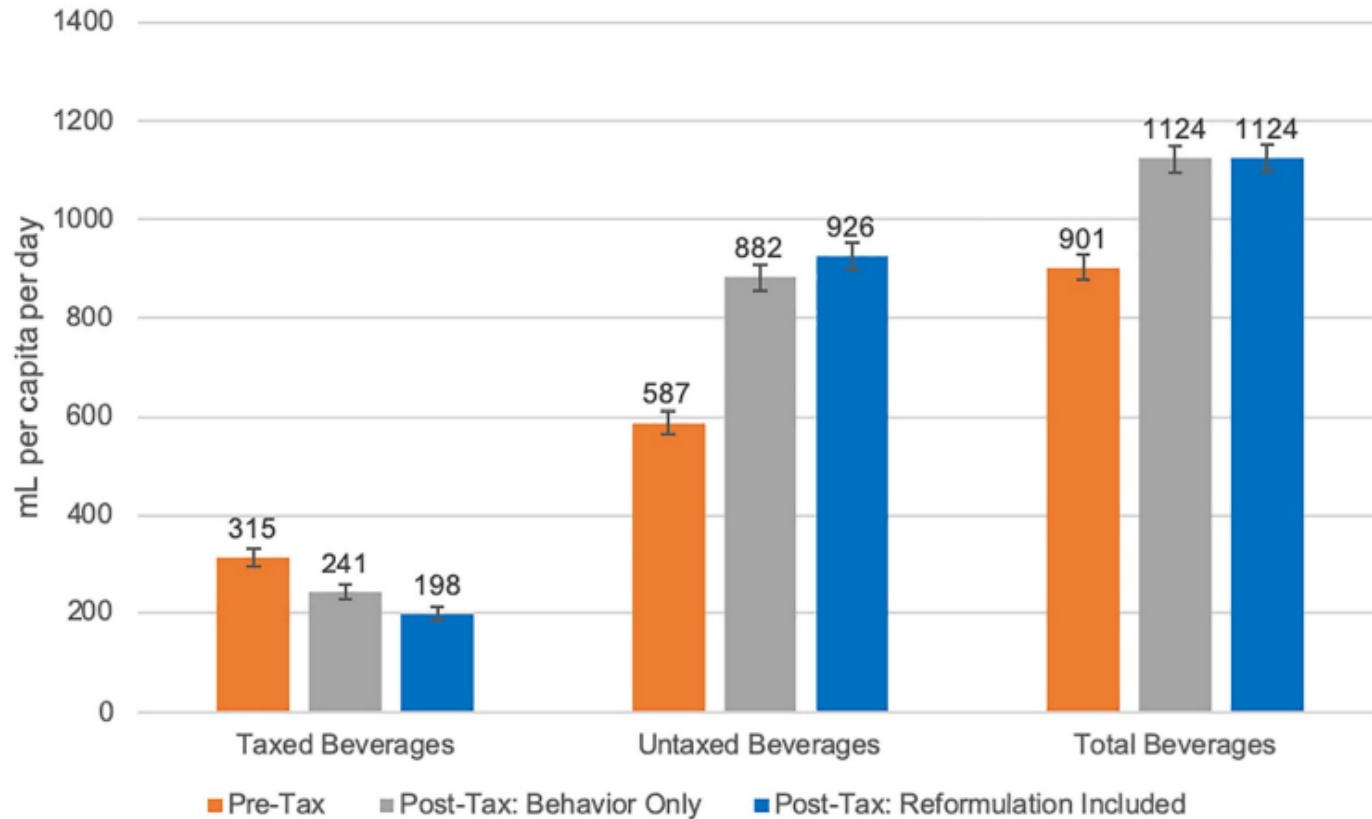
Essman et al, 2021

WP5 food reformulation

Public policies to stimulate food reformulation



Fiscal policies



Behavioral change accounted for reductions of 23% in volume and also 24% in energy and 22% in sugar, while reformulation accounted for additional reductions of 8% in energy, 9% in sugar, and 14% in volume from taxed beverages.

Essman et al, 2021

WP5 food reformulation

Public policies to stimulate food reformulation



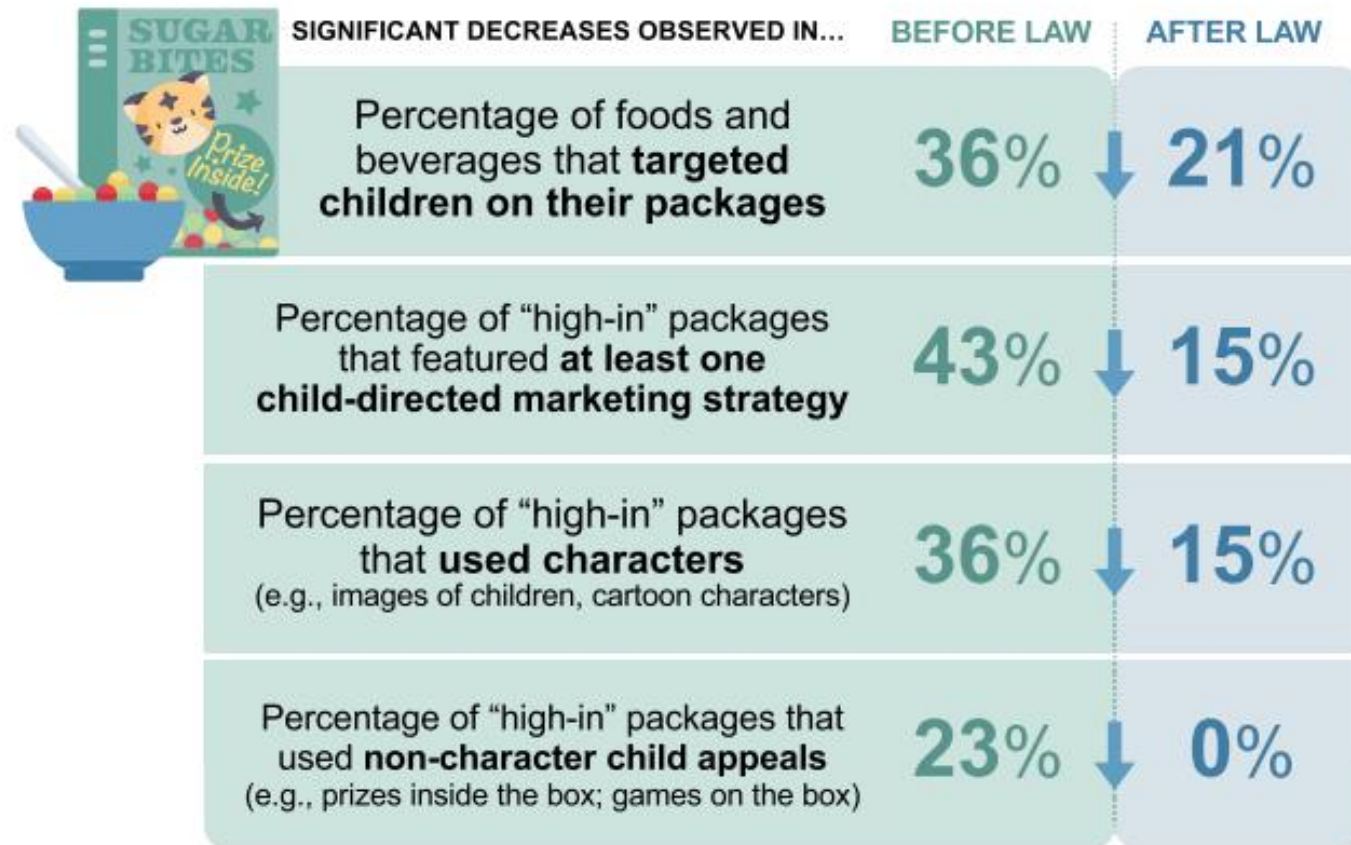
Marketing restrictions



BEFORE



AFTER



Popkin et al, 2021

WP5 food reformulation



Public policies to stimulate food reformulation

Conclusions

- Several public policies other than food composition targets that can stimulate reformulation, most commonly front-of-pack nutrition labeling and fiscal policies
- Important to be aware of side effects, which also need to be monitored like increase in the use of sweeteners
- Potential impacts of reformulation in use of nutrition claims and prices could be investigated
- Evidence is still limited compared to impact of policies on consumer purchases and behaviours



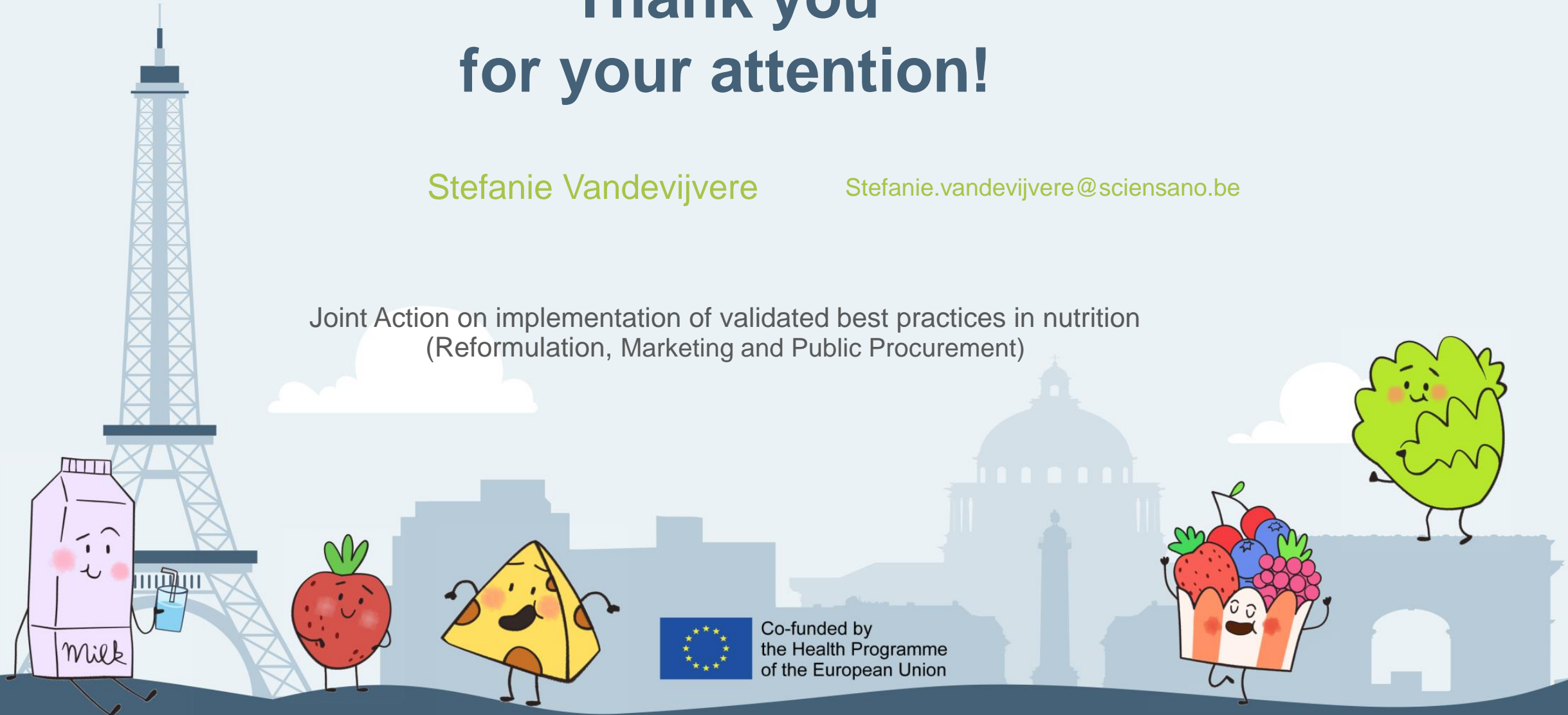
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Joint Action on implementation of validated best practices in nutrition
(Reformulation, Marketing and Public Procurement)



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