Nutrition labeling

Help for a healthier choice

I002784A – Food and Nutrition Policies

Hanna Linke, Jinmei Wei, Lorenzo Galeano, Aubin Chris Ntazinda,
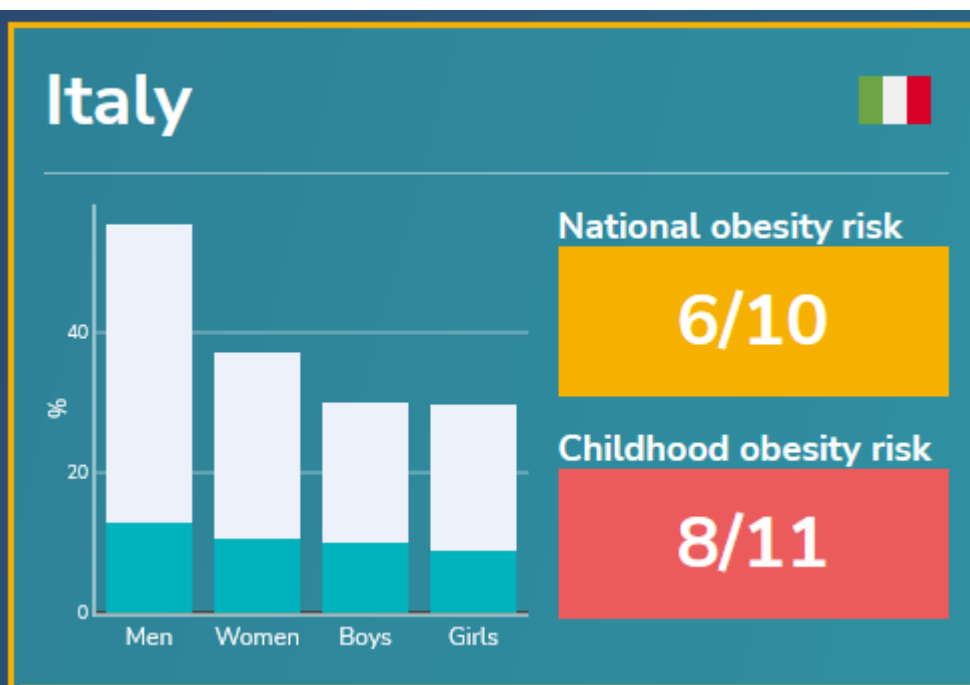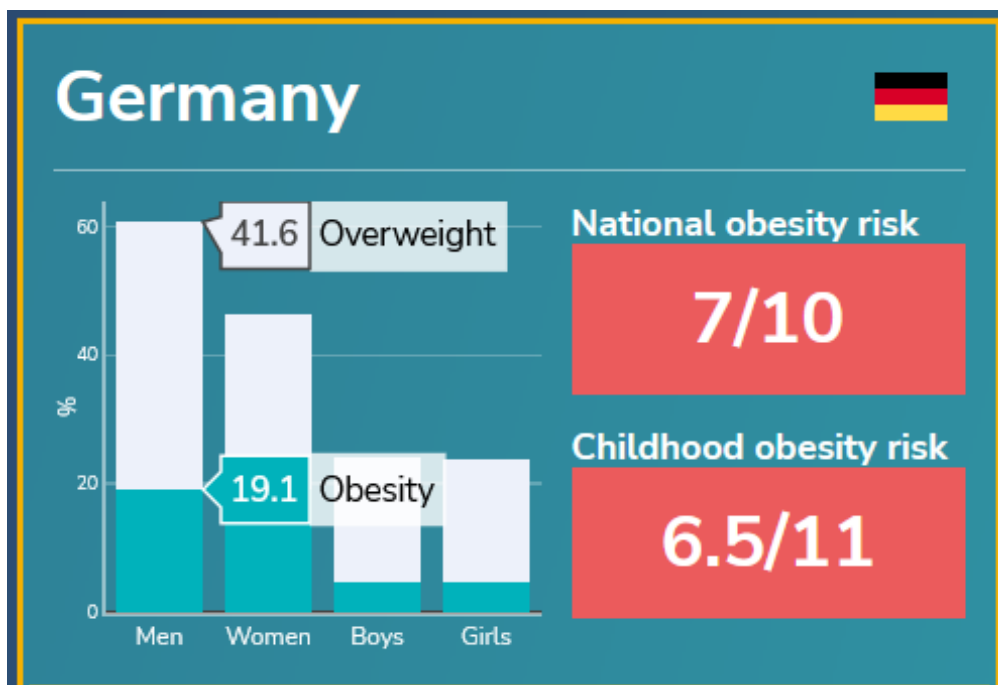
Structure

Introduction

- Non-communicable diseases are the leading cause of death worldwide today
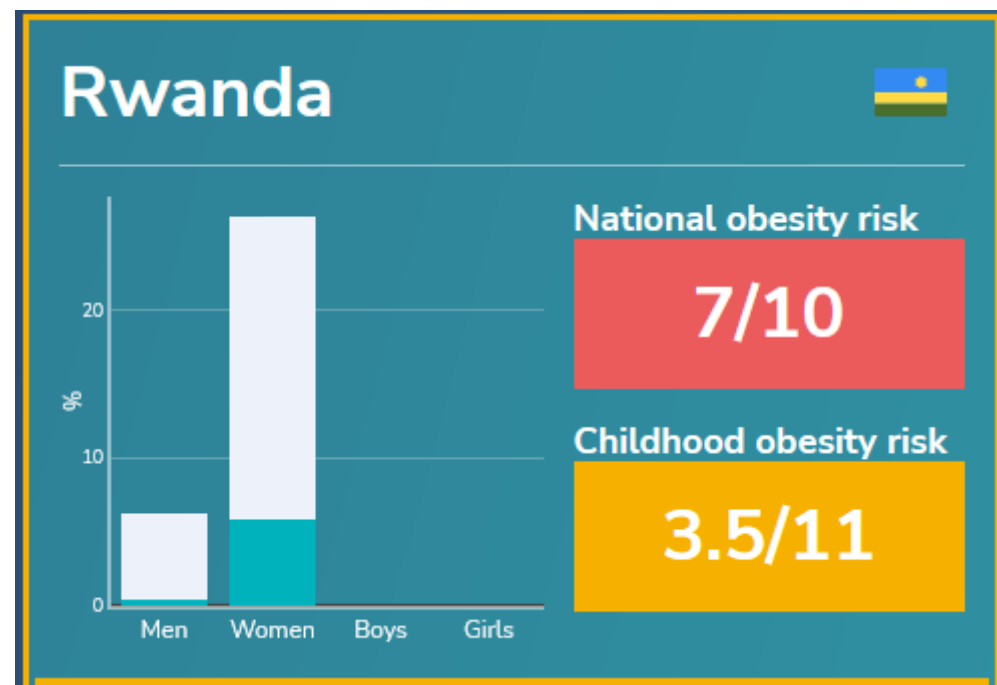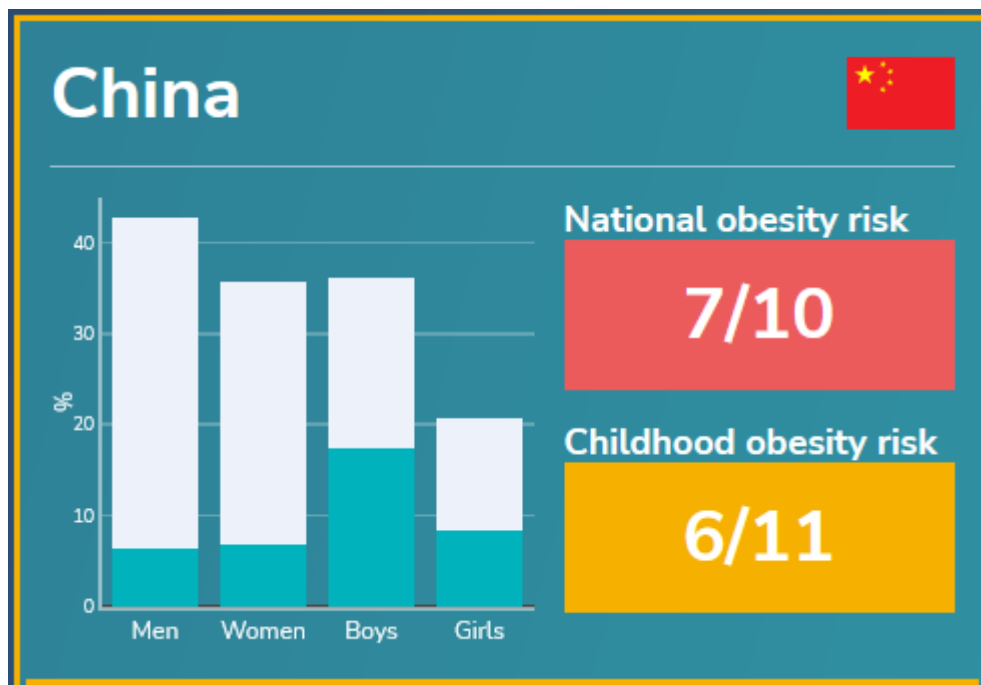 - Linked to obesity

- Not only in Germany, Italy and China obesity numbers has risen, but also in Rwanda

Introduction

Introduction

Introduction

- Risk factors like unhealthy diets are mostly avoidable

- Most unhealthy diets contain a lot of ultra-processed foods
  - Often associated with improper nourishment

- Ultra-processed foods: NOVA-classification
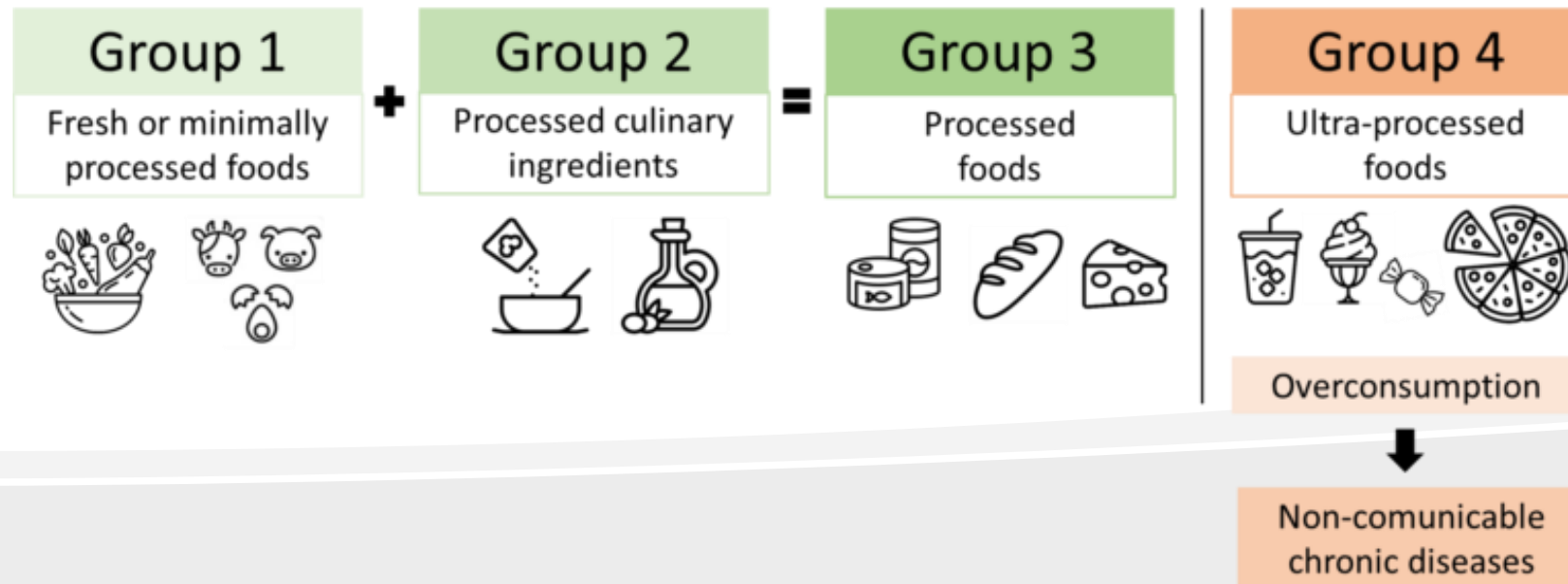
Introduction

Front of Package Labeling (FOPL) is considered as an effective intervention

Our leading questions:

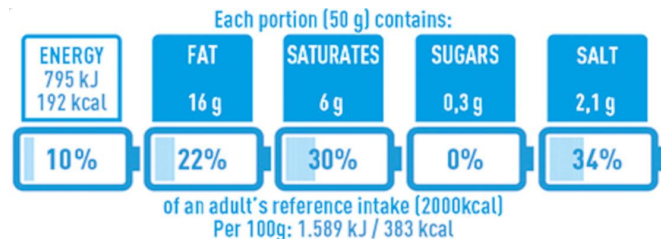| To what extent are they effective? | Which label is the best? | What about Rwanda? |

Front-Of-Package-Labels

Non-interpretive

- numeric and requires the consumer to self-interpret

- Nutrient specific

- E.g., monochrome labels

Interpretive

- indicates the product's healthiness, usually graphically

- E.g., nutrient specific (Multiple Traffic Light) or summary indicator

Nutri-Score

- Overall color-coded score, interpretive FOPL
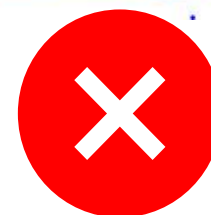
Nutri-Score – calculation

⊖	⊕
Energy	Fruits, vegetables, legumes, nuts and canola, walnut and olive oils
Sugar	Fibers
Saturated fatty acids	Proteins
Sodium	

Nutri-Score – effectiveness

most preferred FOPL

understood by people with low socio-economic status
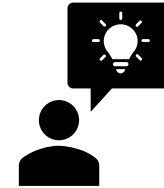
Color coding → effectiveness

Effects on healthier choices are weaker, but still positive

shopping basket has a healthier overall value

Nutri-Score – evaluation

- Easy to understand

- To distinguish at a glance

- Incentive for manufacturers to reformulate

- Does not represent nutrients individually

- Does not consider flavors, additives, sweeteners or preservatives

- Coke zero: A ➡ Olive oil: D

Nutri-Score – improvements

NutrInform Battery

Each portion (50 g) contains:

ENERGY 795 kJ 192 kcal	FAT 16 g	SATURATES 6 g	SUGARS 0,3 g	SALT 2,1 g
10%	22%	30%	0%	34%

of an adult's reference intake (2000kcal)
Per 100g: 1.589 kJ / 383 kcal
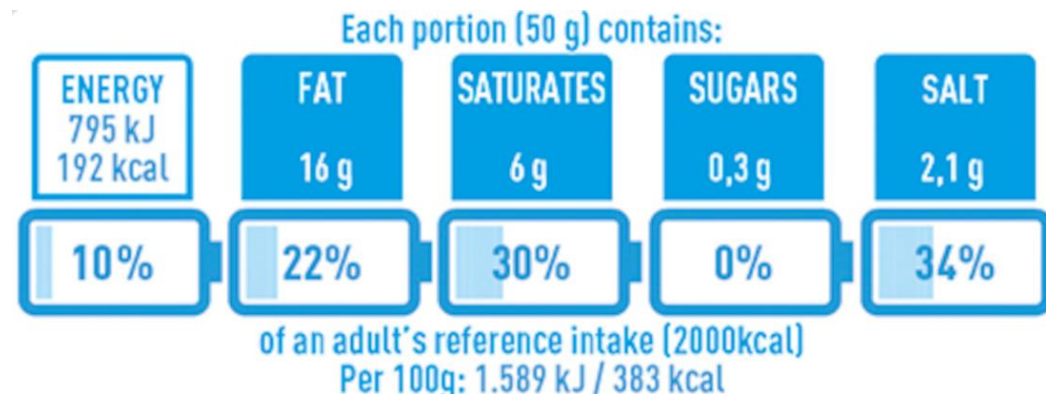
Decree of 19 November 2020

Developed by the collaboration of 4 Italian ministries.

but also trade associations that lead ahead the interests of Italian industry and agriculture.

NutrInform Battery

Non-interpretive front-of-pack label

- – Is an information and educational system rather than oriented directly to the purchase.

Purpose: evaluate the incidence of foods in the daily diet.

? Why this new FOPL? Nutri-Score penalizes the Mediterranean diet?

NutrInform Battery – How does it work?

①
- values relative to the single portion

②
- Quantitative indication

③
- Percentage of each elements
- Calculated per portion
- recommended daily intake.

④
- Graphic representation of energy or nutrients

Each portion (50 g) contains:

| ENERGY 795 kJ 192 kcal | FAT 16 g | SATURATES 6 g | SUGARS 0,3 g | SALT 2,1 g |
| 10% | 22% | 30% | 0% | 34% |

of an adult's reference intake (2000kcal)
Per 100g: 1.589 kJ / 383 kcal
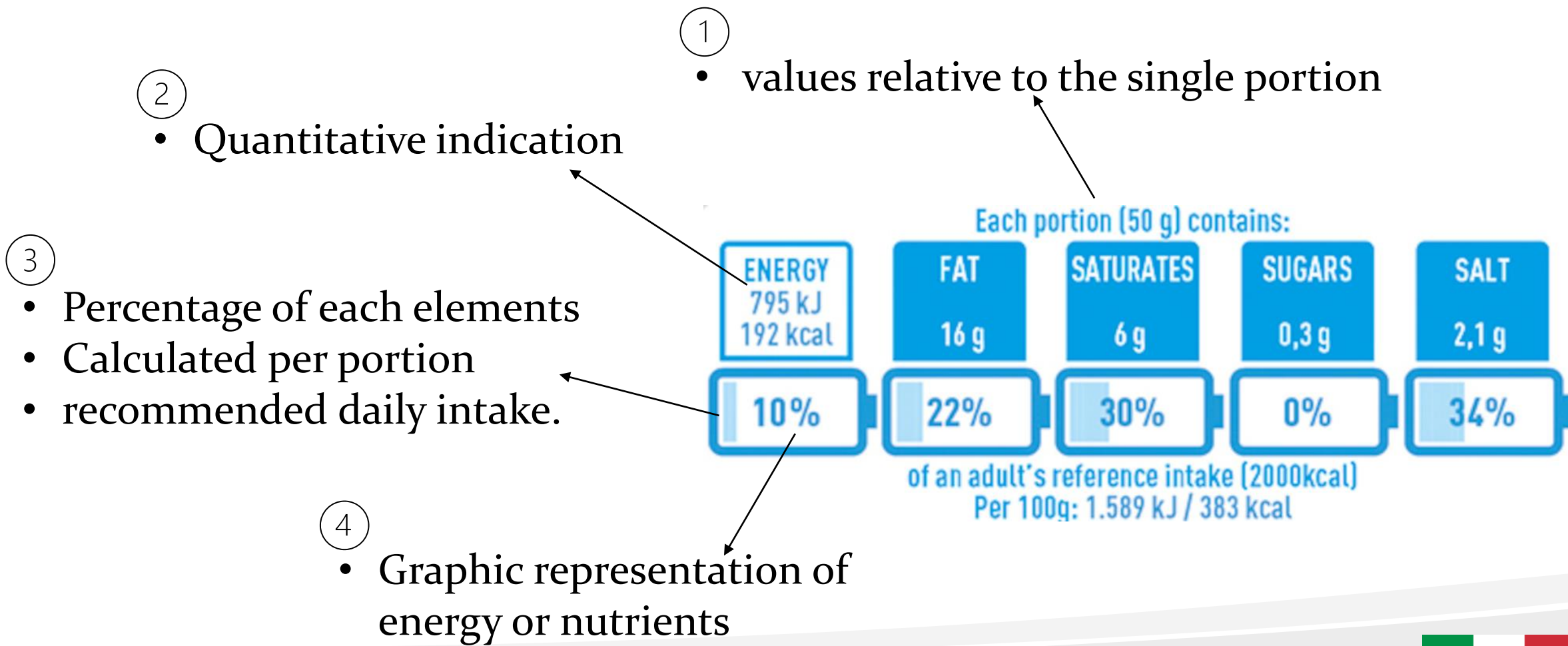
NutrInform Battery – effectiveness

▶ Not widespread, also because some products are excluded

▶ Two studies that suggest evidence for effectiveness
  – But both funded by Federalimentari, the Italian Federation of
    Food Industries

NutrInform Battery – evaluation

- Represent nutrients individually

- Educational label supported by the App

- It may request basic nutritional knowledge

- Battery in the common mentality → better if it is full

- Calculated on the reference intake of adults → children?

Healthier Choice

- Interpretive label
- China Nutrition Association
- Modified from healthy choice of Singapore
- Voluntary not mandato
- No grading system

Healthier Choice – effectiveness

- Effects on consumer food choice
  - Equally effective as MTL
  - The number of people switch to a healthier product increases
  - Consumers can't make a healthier choice
  - People tend to food products they like

- Effects on calorie intake ➡ unclear
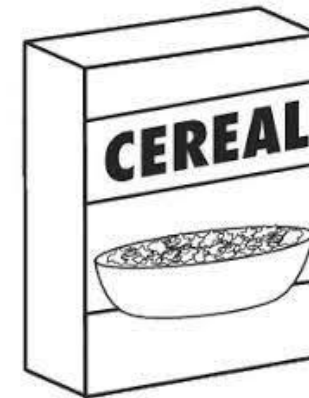
Healthier Choice – evaluation

+

- Easy to use and understand

- Less time to process information

- Quick decision among same food categories

- Strict standards to get label

−

- Halo effects

- Only judgements/ recommendation, no interpretive information

- No promotion effects for extra benefit nutrients

- Not broadly used

Healthier Choice – improvements

Color code	Add interpretive information like portion value	Better to combine the multi-level icon
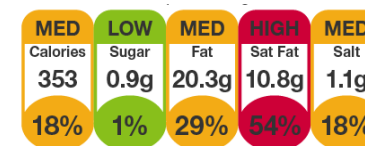
Comparison
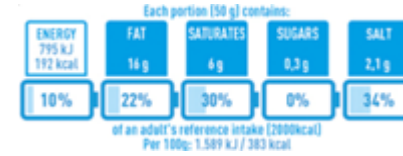
Interpretative labels > Non-interpretive label

- Nutri-Score, Healthier Choice > NutrInform Battery

Color code → most effective aspect

- Nutri-Score > Healthier Choice, NutrInform Battery

Intuitive

- Nutri-Score, Healthier Choice > NutrInform Battery

Informed consumption

- NutrInform Battery > Nutri-Score, Healthier Choice

Rwanda- Context
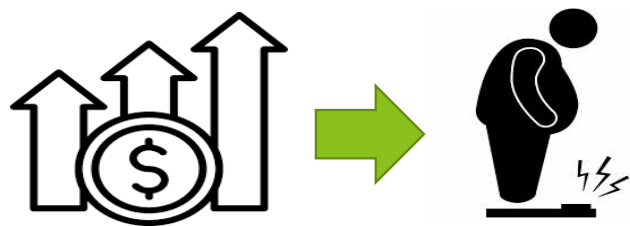
Shift from poor to a middle-income country
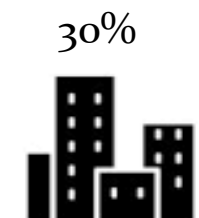
30%

wealthier urban women
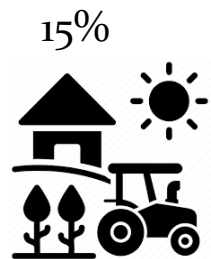
Access to high calorie foods , Limited physical activity

15%

70% population, Agriculture, Increased physical activity

FOPL development ??

💬 Preference for open air market

📦❌ Expensive processed foods and reduced packaging

Rwanda - context

Protestants

Religious belief

Cultural pressure

Largest producer licensed under Coca-Cola company

Stakeholder engagement for FOPL development ➡ less efficient

Conclusion

Nutri-Score for Europe

NutrInform Battery

No data that Healthier Choice works in China

FOPL seems not to be the best policy in Rwanda for now ➡ ???

Discussion

Since FOPL seems not to be working in Rwanda for now, what could we do instead?

Classification of Policy Interventions:
Number and Type of Diet and Health Measures in the EU

Measures supporting informed choice		Measures changing the market environment	
Type	No.	Type	No.
Advertising controls	5	Fiscal measures (2 types)	3
Public information campaigns	38	Regulate school and workplace meals	14
Nutrition education	35	Nutrition-related standards	1
Nutrition labelling	4	Government action to encourage voluntary reformulation	9
Nutrition information on menus	0	Availability measures for disadvantaged consumers	2
Total (informed choice)	82	Total (market environment)	29

Source: Capacci et al. (2011) *Nutrition Reviews*
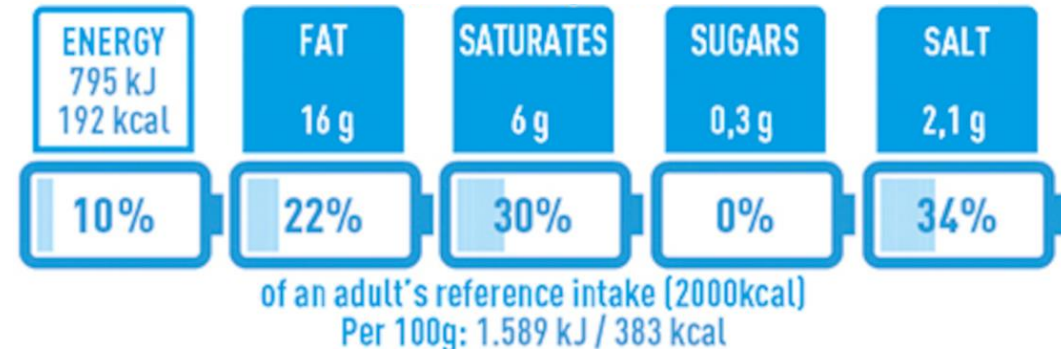
www.eatwellproject.eu

Discussion

Should trade associations be involved in the development of FOPLs?

THANK YOU **for your attention!**

Sources

- Introduction:
  - https://www.rki.de/DE/Content/Institut/Internationales/NCD/NCD_node.html
  - https://apps.who.int/iris/bitstream/handle/10665/353747/9789289057738-eng.pdf
  - https://globalnutritionreport.org/resources/nutrition-profiles/africa/eastern-africa/rwanda/
  - Wang, Limin; Zhou, Bin; Zhao, Zhenping; Yang, Ling; Zhang, Mei; Jiang, Yong et al. (2021): Body-mass index and obesity in urban and rural China: findings from consecutive nationally representative surveys during 2004-18. In: Lancet (London, England) 398 (10294), S. 53–63. DOI: 10.1016/S0140-6736(21)00798-4.
  - https://data.worldobesity.org/
  - Poti, Jennifer M.; Braga, Bianca; Qin, Bo (2017): Ultra-processed Food Intake and Obesity: What Really Matters for Health-Processing or Nutrient Content? In: Current obesity reports 6 (4), S. 420–431. DOI: 10.1007/s13679-017-0285-4.
  - Lyn, Rodney; Heath, Erica; Dubhashi, Janhavi (2019): Global Implementation of Obesity Prevention Policies: a Review of Progress, Politics, and the Path Forward. In: Current obesity reports 8 (4), S. 504–516. DOI: 10.1007/s13679-019-00358-w.
  - Monteiro CA, Cannon G, Levy R et al.: NOVA – The star shines bright. World Nutrition 2016; 7(1–3): 28–38.
  - https://cdn-wordpress-info.futurelearn.com/info/wp-content/uploads/32b0f38f-a0b6-4cd7-be71-644881c0b380-1-768x384.png

- Germany:
  - Julia C, Hercberg S (2017) Nutri-Score: evidence of the effectiveness of the French front-of-pack nutrition label. Ernahrungs Umschau 64(12): 181–187
  - Carruba, Michele O.; Caretto, Antonio; Lorenzo, Antonino de; Fatati, Giuseppe; Ghiselli, Andrea; Lucchin, Lucio et al. (2022): Front-of-pack (FOP) labelling systems to improve the quality of nutrition information to prevent obesity: NutrInform Battery vs Nutri-Score. In: Eating and weight disorders : EWD 27 (5), S. 1575–1584. DOI: 10.1007/s40519-021-01316-z.
  - Finkelstein, Eric A.; Ang, Felicia Jia Ler; Doble, Brett; Wong, Wei Han Melvin; van Dam, Rob M. (2019): A Randomized Controlled Trial Evaluating the Relative Effectiveness of the Multiple Traffic Light and Nutri-Score Front of Package Nutrition Labels. In: Nutrients 11 (9), S. 2236. DOI: 10.3390/nu11092236.
  - https://www.lebensmittelverband.de/de/lebensmittel/kennzeichnung/naehrwert/nutri-score
  - Ikonen, Iina; Sotgiu, Francesca; Aydinli, Aylin; Verlegh, Peeter W. J. (2020): Consumer effects of front-of-package nutrition labeling: an interdisciplinary meta-analysis. In: J. of the Acad. Mark. Sci. 48 (3), S. 360–383. DOI: 10.1007/s11747-019-00663-9.
  - https://nutriscore.blog/2019/04/21/misunderstandings-and-fake-news-about-nutri-score-how-to-try-to-destabilize-a-disturbing-public-health-tool/

Sources

- Italy:
  - Decree of 19 November 2020, Normattiva (platform where Italian laws are published
  - https://www.nutrinformbattery.it/
  - Mazzù, Marco Francesco; Romani, Simona; Gambicorti, Antea (2021): Effects on consumers' subjective understanding of a new front-of-pack nutritional label: a study on Italian consumers. In: International journal of food sciences and nutrition 72 (3), S. 357–366. DOI: 10.1080/09637486.2020.1796932.
  - https://www.politicheagricole.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/16147 (Official website of the Agri-food policies Ministry)
  - https://www.altroconsumo.it/
  - Marco Francesco Mazzù, Simona Romani, Angelo Baccelloni & Antea Gambicorti (2021) *A cross-country experimental study on consumers' subjective understanding and liking on front-of-pack nutrition labels*, International Journal of Food Sciences and Nutrition, 72:6, 833-847, DOI: 10.1080/09637486.2021.1873918
  - Carruba, M.O., Caretto, A., De Lorenzo, A. *et al.* Front-of-pack (FOP) labelling systems to improve the quality of nutrition information to prevent obesity: NutrInform Battery vs Nutri-Score. *Eat Weight Disord* **27**, 1575–1584 (2022). https://doi.org/10.1007/s40519-021-01316-z
  - Fialon M, Serafini M, Galan P, Kesse-Guyot E, Touvier M, Deschasaux-Tanguy M, Sarda B, Hercberg S, Nabec L, Julia C. Nutri-Score and NutrInform Battery: Effects on Performance and Preference in Italian Consumers. *Nutrients*. 2022; 14(17):3511. https://doi.org/10.3390/nu14173511

- China:
  - http://down.foodmate.net/standard/yulan.php?itemid=56098
  - James C Hersey, Kelly C Wohlgenant, Joanne E Arsenault, Katherine M Kosa, Mary K Muth, Effects of front-of-package and shelf nutrition labeling systems on consumers, Nutrition Reviews, Volume 71, Issue 1, 1 January 2013, Pages 1–14, https://doi.org/10.1111/nure.12000
  - Siegrist, M., Hartmann, C., & Lazzarini, G. (2019). Healthy choice label does not substantially improve consumers' ability to select healthier cereals: Results of an online experiment. British Journal of Nutrition, 121(11), 1313-1320. doi:10.1017/S0007114519000448
  - Cecchini M, Warin L. Impact of food labelling systems on food choices and eating behaviours: a systematic review and meta-analysis of randomized studies. Obes Rev. 2016 Mar;17(3):201-10. doi: 10.1111/obr.12364. Epub 2015 Dec 23. PMID: 26693944
  - Aschemann-Witzel, Jessica et al. "Effects of nutrition label format and product assortment on the healthfulness of food choice." Appetite vol. 71 (2013): 63-74. doi:10.1016/j.appet.2013.07.004
  - Martini, Daniela et al. "Relationship between front-of-pack labeling and nutritional characteristics of food products: An attempt of an analytical approach." Frontiers in nutrition vol. 9 963592. 19 Aug. 2022, doi:10.3389/fnut.2022.963592:
  - 中国统计年鉴—2021 (stats.gov.cn)

Sources

- Rwanda:
  - Ministry of Finance, R. of R. (2012). ECONOMIC DEVELOPMENT AND POVERTY REDUCTION STRATEGY , (September 2007), 2008–2012
  - https://www.statistics.gov.rw/publication/economic-development-poverty-reduction-strategy-2008-2012
  - Alexis Niyitegeka, Micheal Habtu, Hilda Vasanthakaalam, Erigene Rutayisire (2021) Knowledge and Factors Associated with Overweight and Obesity Prevention among Women Attending Kibagabaga Hospital, Rwanda. *Journal of Public Health International* - 3(3):8-18
  - Ruhara CM, Abdool Karim S, Erzse A, Thow AM, Ntirampeba S, Hofman KJ. Strengthening prevention of nutrition-related non-communicable diseases through sugar-sweetened beverages tax in Rwanda: a policy landscape analysis. Glob Health Action. 2021 Jan 1;14(1):1883911. doi: 10.1080/16549716.2021.1883911. PMID: 33876706; PMCID: PMC8079049.
  - Mukabutera A, Nsereko E, Aline U, Umwungerimwiza YD, Cyprien M. Overweight or obesity prevalence, trends and risk factors among women in Rwanda: A cross-sectional study using the Rwanda Demographic and Health Surveys, 2000–2010. Rwanda J. 2016;3(1):14-20. doi:10.4314/rj.v3i1.3F
  - Baraka E, Willis MS, Ishimwe BA. What Kigali's open-air markets reveal about achieving food and nutrition security: the role of African indigenous crops. Agric Food Secur. 2022;11(1):17. doi: 10.1186/s40066-022-00359-4. Epub 2022 Feb 14. PMID: 35194514; PMCID: PMC8852854.