



# EDUCATION FOR A NEW GENERATION OF FOOD CITIZENS

Emily Norford, EAT (FoodSHIFT2030 Network Partner)





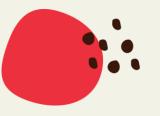
### 12:00 Welcome and Introduction

Christian Bugge Henriksen – UCPH, FoodSHIFT2030 Coordinator



### 12:05 Education for a new generation of food citizens

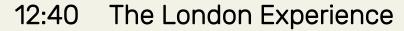
Chair: Emily Norford – EAT, FoodSHIFT2030 Network Partner



### 12:10 Projects from across FoodSHIFT2030

Athens - Katerina Riviou (Ellinogermaniki Agogi), and Ioannis Ioakeimidis (Associate Professor, Karolinska Institute)

Copenhagen - Emil Kiær Lund (Food School Coordinator) and Christian Bugge Henriksen



Guest speaker Rachel Copus (School Food Matters) and students from Northolt High School, London

**12:55** Panel discussion with questions from audience



### 13:20 Conclusion and next steps for FoodSHIFT



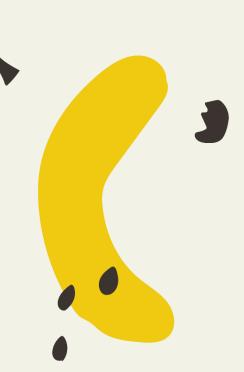
### Recording is ON

Live Translation available from English to Greek

Twitter @FoodSHIFT2030 #FoodSHIFT2030

Use the Q&A section to direct questions to speakers

Use the chat for technical issues and general





# PROJECTS FROM ACROSS FOODSHIFT

Athens
Katerina Riviou
and Ioannis Ioakeimidis







- 2000 students (4-18 years old)
- 250 teachers
- 55 years of operation
- Focus on STEM subjects

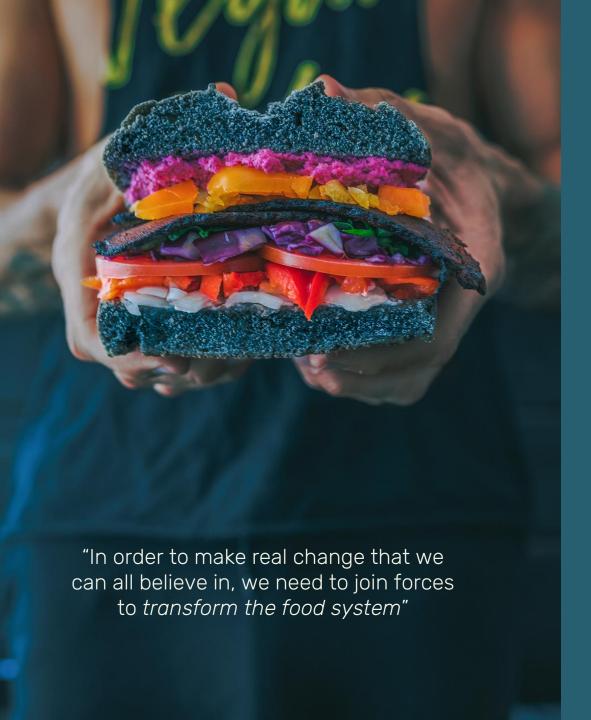
Research and Development Department

- 17 researchers in educational innovation and technology
- 200 international projects
- 20 years of operation











# WE NEED A TRANSFORMATION OF THE FOOD SYSTEM

- Citizen-driven
- Low carbon
- Circular
- Plant-based
- Resilient
- Localized











Malnutrition

Climate Change

Urbanization









Reducing GHG Emissions



More localised food systems









Citizens



Work Packages



# FOODSHIFT ACCELERATOR LABS

9 Front-Runner City-Regions











BERLIN



**BRASOV** 



# FOODSHIFT ACCELERATOR LAB



Open School Lab Athens,
Athens, GR
Schools as sites of food
experience and food system
transformation



Regional Lunch for All, Avignon,
FR
Public procurement as a driver for
a more regional, sustainable and
healthy food system



Food Tech 3.0, Barcelona, ES Solutions for local production in future cities



# FOODSHIFT ACCELERATOR LAB



Back to the land, Bari, IT
Sustainable land use and food
chain strategies for young
entrepreneurs building on social
innovation in food systems



FoodLifeCentre, Berlin, DE
An innovation hub for sustainable
regional food supply based on a
decentralisation concept for food
distribution and education



Interactive Food Lab, Brasov, RO Integrating traditional and local producers into an innovative and ambitious regional food system



# FOODSHIFT ACCELERATOR LAB



Kitchen of Tomorrow, Greater
Copenhagen, DK
Public procurement and professional
kitchens for a sustainable regional
food system, including rural and
coastal areas



City Agro-Park, Ostend, BE Operationalisation of an agricultural park



Accessible Food Gardens, Wroclaw, PO Strengthening of innovation potential of local sustainable food system

# FAL INNOVATION FOCUS AND MAJOR THEMES

Overview of the innovation focus and major themes covered by the nine FoodSHIFT Accelerator labs.

- - Children and youth education
  - Capacity Building
  - Public procurement
  - Food space and infrastructures
  - Short food supply chains

- Fresh food from the sea
- Urban farming
- Professional kitchens
- Plant based nutrition
- Food waste solutions

# FOODSHIFT



Schools as sites of food experience and food system transformation.



Public procurement as a driver for a more regional, sustainable and healthy food system.



Solutions for local production in future cities.



#### Back to Land

Sustainable land use and food chain strategies for young entrepeneurs building on social innovation in food systems.



#### Food Life Centre

An innovation hub of sustainable regional food supply based on a decentralisation concept for food distribution and education.



#### Interactive Food Lab

Integrating traditional and local producers into an innovative and ambitious regional food system.



### Kitchen of tomorrow

Public procurement and professional kitchens for a sustainable regional food system, including rural and coastal areas.



Operationalisation of an agricultural park.



#### Accessible Food Gardens

Strenghthening for innovation potential of local sustainable food system.

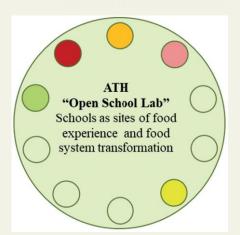
# Schools as sites of food experience & food system transformation



 Exploring new approaches for overcoming the growing divide between consumption and food knowledge by engaging schools in (re-)connecting young people with the land as well by strengthening the link between urban and agricultural communities, while providing hands-on learning opportunities for the leaders of tomorrow

### Lab innovation focus

- Social innovation by engaging schools in (re-) connecting young people with land, nature and use summer courses to promote healthy eating and plant-based foods
- Community empowerment providing hands-on learning opportunities for the food-smart citizens of tomorrow
- Strengthening the link between urban and agricultural communities by developing the dialogue between schools and food actor networks
- Cooperating solutions for using leftovers in school canteens and kitchens



- children and youth education
- capacity building
- public procurement
- food space and infrastructures
- short food supply chains

- fresh food from the sea
- urban farming
- professional kitchens
- plant based nutrition
- food waste solutions

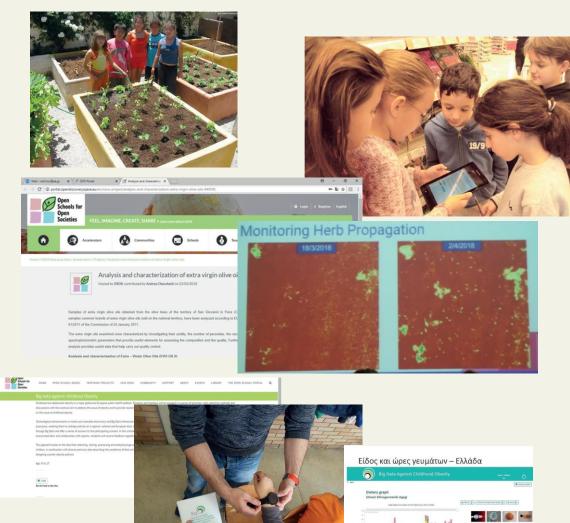
# The school transforming to the innovation hub of the local community

Following the OSOS Open Schooling Model, indicative multidisciplinary projects:

- From School Gardens to High Precision
   Agriculture
   (https://portal.opendiscoveryspace.eu/en/community/my-school-garden-o-sholikos-moy-kipos-70514)
- Healthy Food Habits/Big data against childhood obesity
  - A mobile app that monitors everyday dietary behaviour & physical activity of students
  - Students developing their own app & analysing their data

https://portal.opendiscoveryspace.eu/en/osos\_authoring\_tool/view/849827/849314

- Visits to museum/ Consulting with experts
- Visit of external students/ Liaison with athletic teams
- Educational Pathways in a Super Market
- After School Club: Entrepreneurship Project on FNS





# Events in collaboration with external FOODSWEET Experts

- Events in collaboration with externals and in occasion of special days, e.g.
  - invited presentations on the World Childhood Obesity Day (11/10)
    - Students of 4th primary grade discussion about nutrition & contemporary attitudes and behaviors with Ms. Kassari (Industrial-Organizational Psychologist and Systemic Project Management Analyst)
    - solve questions about healthy nutrition, compare children's eating habits in Greece, Spain and Sweden

https://www.ea.gr/ea/main.asp?id=1024&la g=en&eventID=770

Webinars for students in collaboration with local research institutions



# Educational Contests: Panhellenic School Competition "Bravo! Schools, Sustainable Greece 2020"







- "The open school as a food production lab"
- UN SDG 8 and in connection with Global Goals: 12 Responsible consumption & production and 4 Quality Education
- Our participation (in Greek):

https://observatory.sustainablegreece2020.com/en/schoolspractices/anoikto-sxoleio-wsergasthrio-paragwghsfaghtoy.2075.html



### Publication of scientific articles

- Online journal for students by students
- OSJ Open Schools Journal for Open Science issue Vol.3 (4)
- Indicative articles:
  - Zero Waste School
  - Science and Sustainability in Food
  - Healthy Eating Habits
  - Obesity free
  - Circular economy and innovative business
  - Planet Earth is screaming. Will you listen?
  - Water crisis beyond the destruction
  - Mathematical modeling of the epidemic diseases









(abstracts in English)



# Teacher training actions

- 5-days summer school for teachers from different countries
- face to face teacher trainings on designing educational activities with the support of the Institute of Educational Policy, under the auspices of the Ministry of Education
- School Gardens Contest 2018 in collaboration with IEP



### Covid-19...



- Revisit the topics of Healthy Dietary Habits & Food Waste under the subjects of Civic, Social and Political Education and Home Economics
- Individual projects on distance due to the guidelines set by the Ministry of Education on the topic of their choice (e.g., Food Waste, Food with Hidden Sugar)
- EA Physical Education Dpt. periodic video posts with suggested exercises in Edmodo
- Continue to collect data on students' meals and physical activity
- Online seminars in collaboration with research organisations (e.g., the School of Chemical Engineering, NTUA) as physical visit is not possible



## Further actions



- Establishing collaboration with local food actors; Codevelopment of Educational Modules
- The curriculum of the school has been updated with new topics (e.g., food waste)
- Attending developments:
  - Online Food Waste 2020 conference taking place online on 30/09/2020
- EA became member of the Food Waste Alliance (on World Food Day 2020)
- Reduced school canteen and kitchen food waste





### Mapping already existing projects on Food Nutrition System



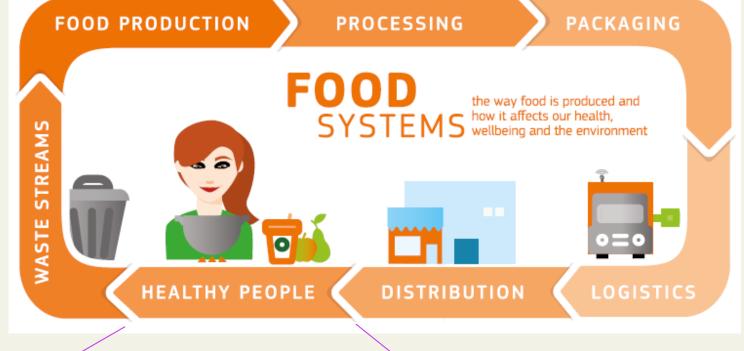




















Katerina Riviou: Researcher, Ellinogermaniki Agogi, Greece https://www.ea.gr/ kriviou@ea.gr













# BigO: Big data against childhood Obesity in Schools

School use cases, with focus on Athens, Greece

Ioakeimidis Ioannis, PhD: Senior Researcher, Karolinska Institute, Sweden

Katerina Riviou: Researcher, Ellinogermaniki Agogi, Greece





## What's the **BigO** project?





**Big Data against Childhood Obesity** 

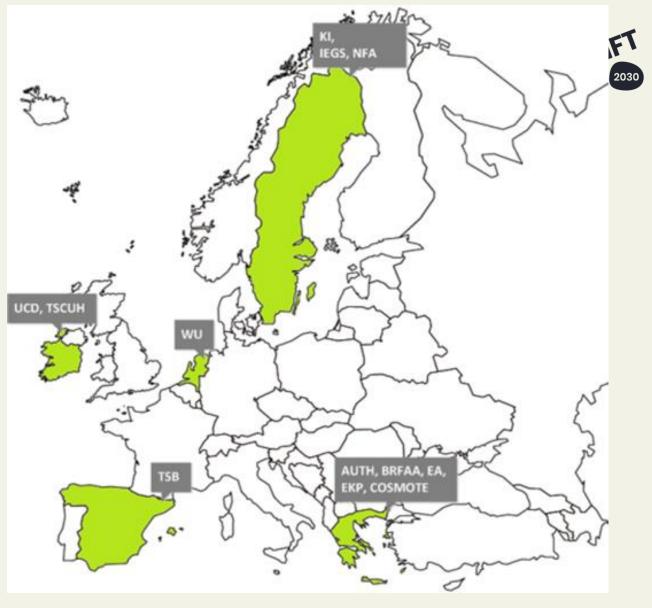




# H2020 project

https://bigoprogram.eu/













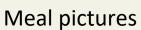






**Physical Activity** 



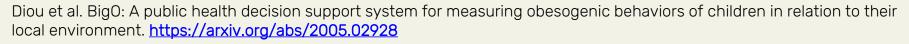




Photos - Food advertisments



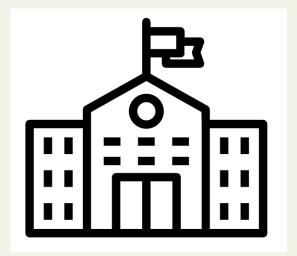




























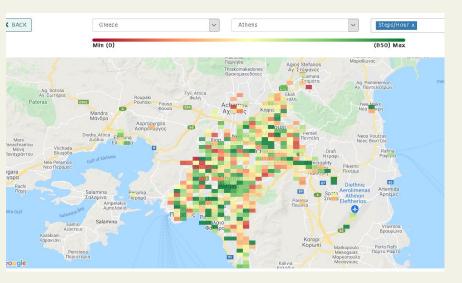


# Dataset from 5042 children

















# School Portal





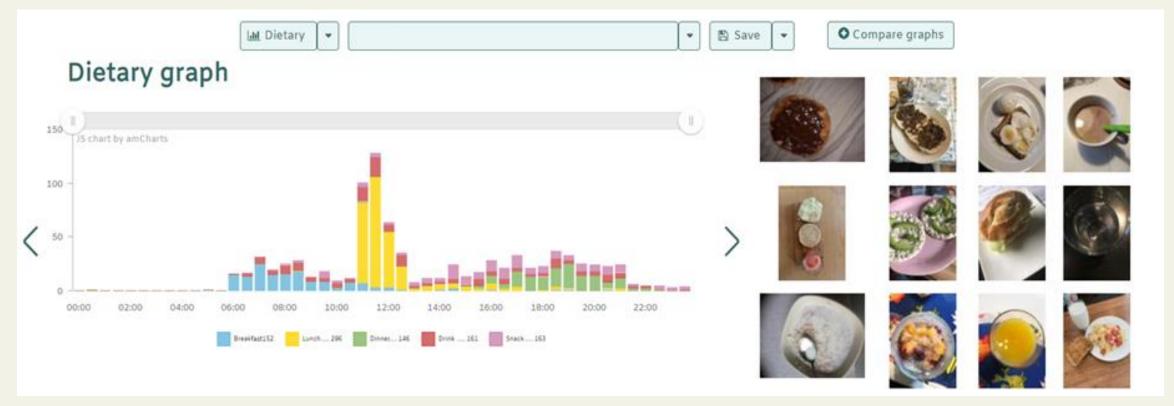






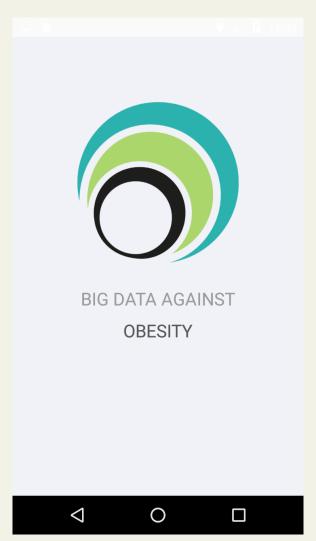
# **School Portal**

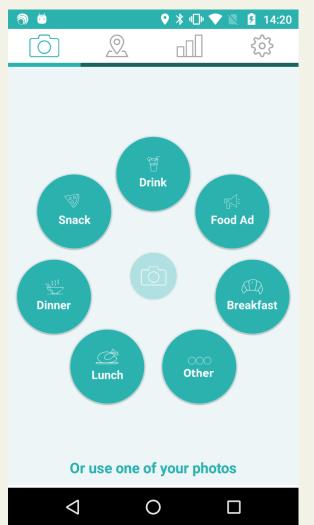


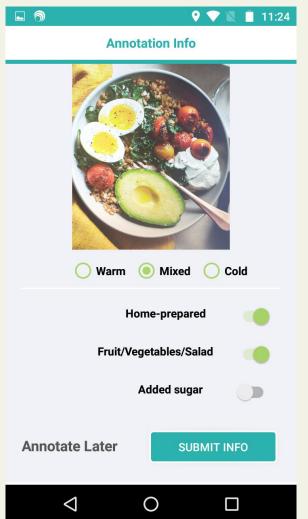


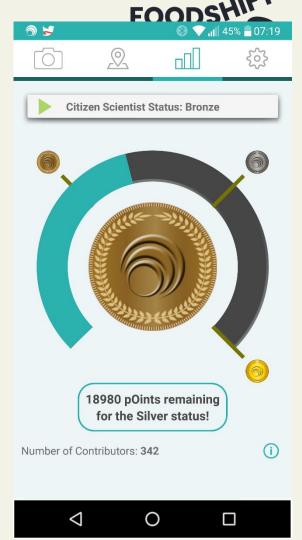


















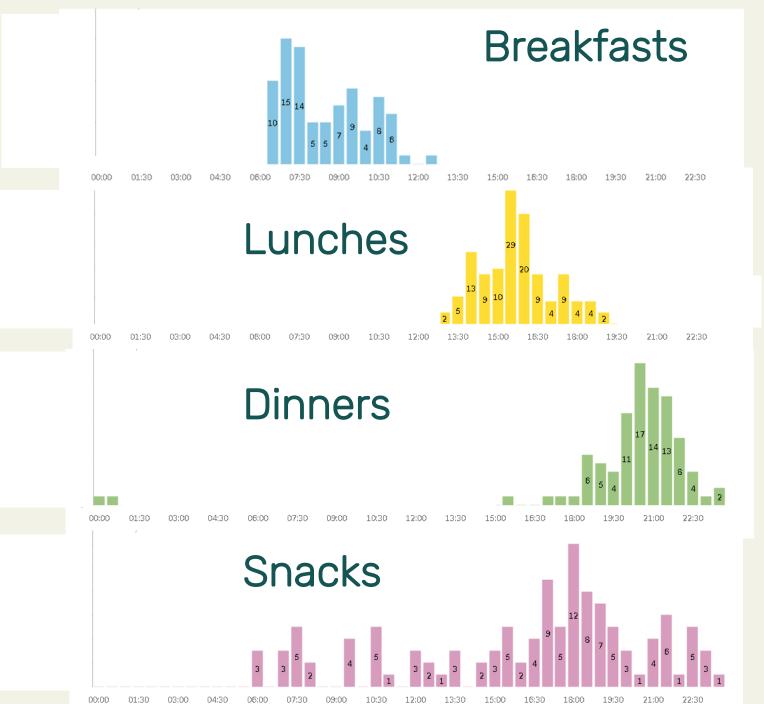


102,043 meal pictures

9,695 from EA (1,373 unique students)



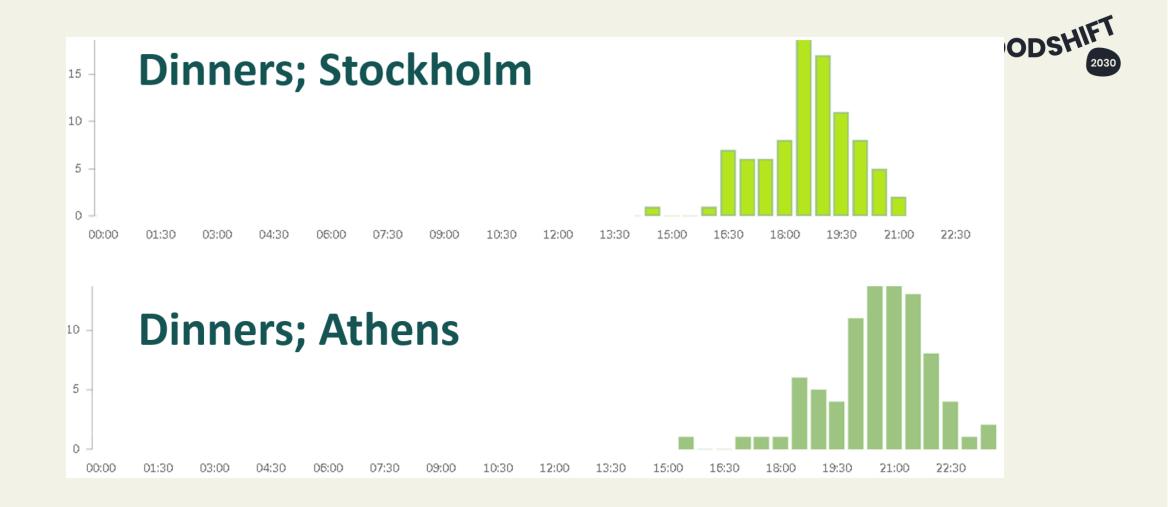






n = 68 ; 10-12 years EA School, **Athens** 28/10/2019-4/11/2019



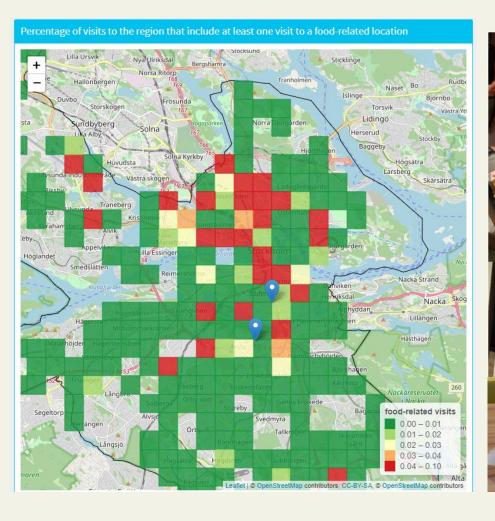


Children 10-12 years; Stockholm vs Athens; 28/10/2019 - 4/11/2019





#### Stockholm



























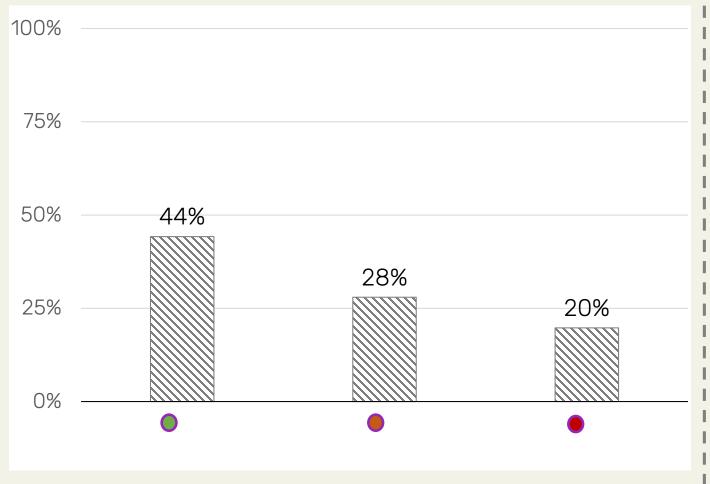






#### Any reported eating event with solid components



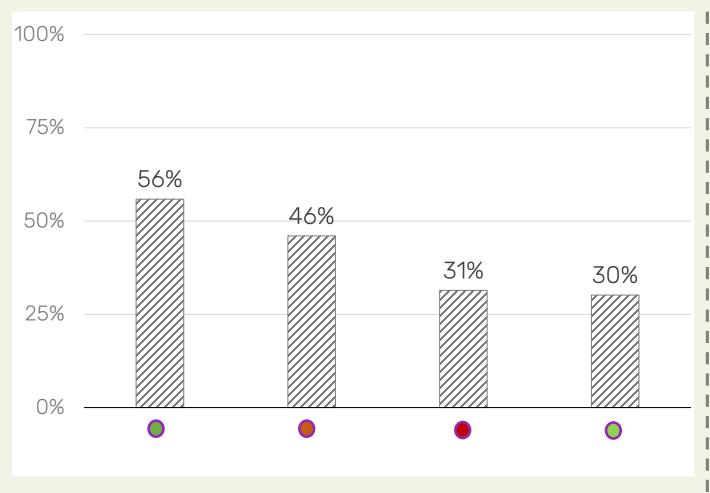


- Veg & Fruits
  (cooked or raw / no spreads/sauces)
- Some obvious meat productive (red or white meat, includes fish)
- Red/Ultra-processed meat

N=572, 77 unique reporters, EA, Age: 9-15, Jan-Feb 2020

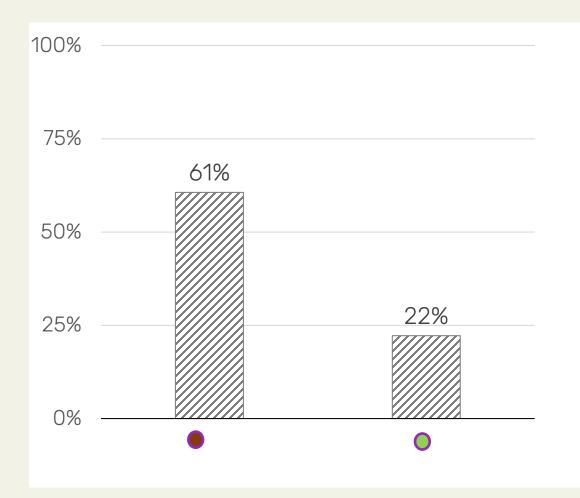
#### Only Lunches and Dinners





- Veg(cooked or raw / no spreads/sauces)
- Some obvious meat productive (red or white meat, includes fish)
- Red/Ultra-processed meat

Only vegetables (no obvious meat)





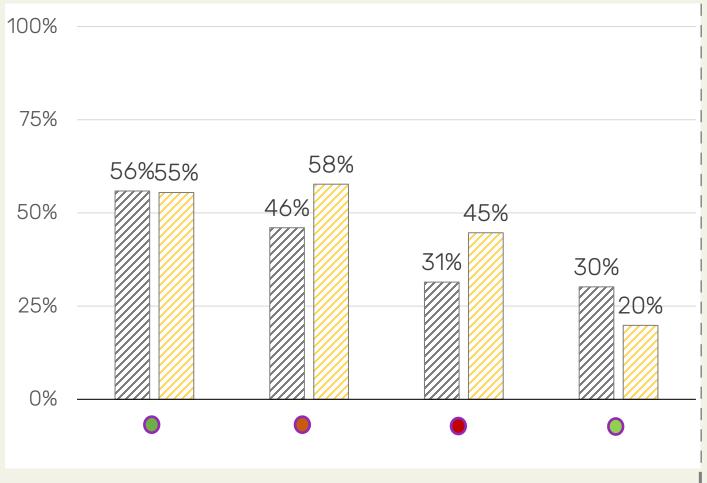
Some obvious animal product

(meat, cheese, eggs, butter)

Only vegetables
(no obvious animal product)

#### Only Lunches and Dinners, EA vs the Swedish Schools





- Veg & Fruits
   (cooked or raw / no spreads/sauces)
- Some obvious meat productive (red or white meat, includes fish)
- Red/Ultra-processed meat

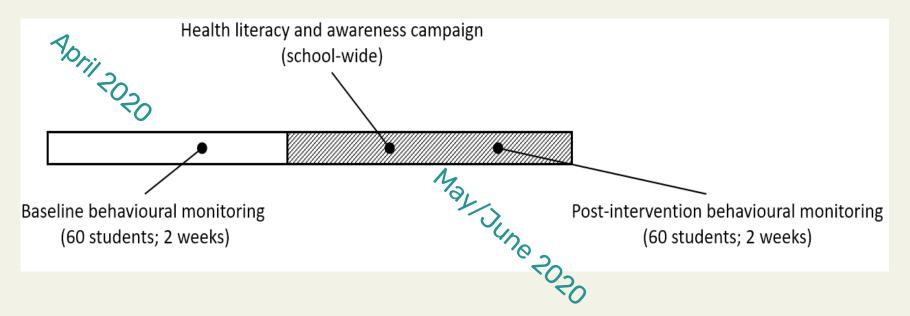
 Only vegetables (no obvious meat)

N=315, 68 unique reporters, EA, Age: 9-15, Jan-Feb 2020

Bold data values depict significance for N=676, 80 unique reporters, 2 schools, Age: 12-18, Jan-Feb 2020

z-score, group comparisons

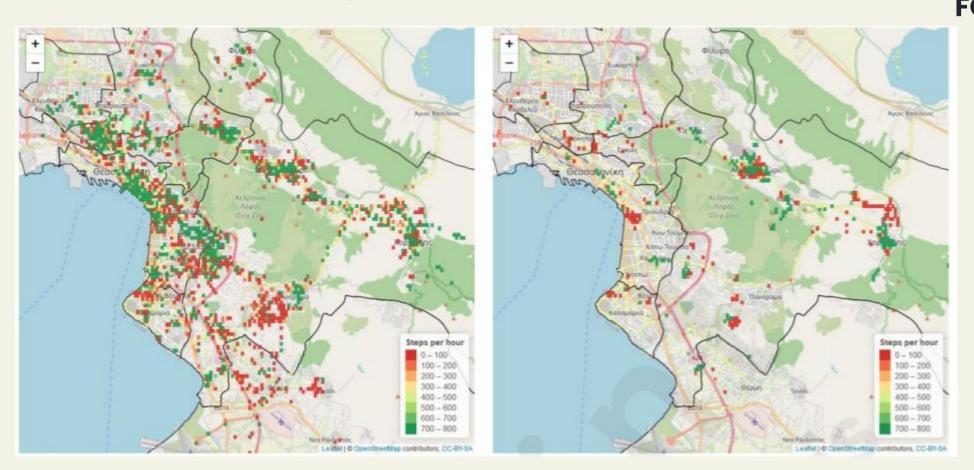
### Abandoned planning ruit eating as displacement of unhealthy snacking foods







# Pre/During COVID social mobility measures

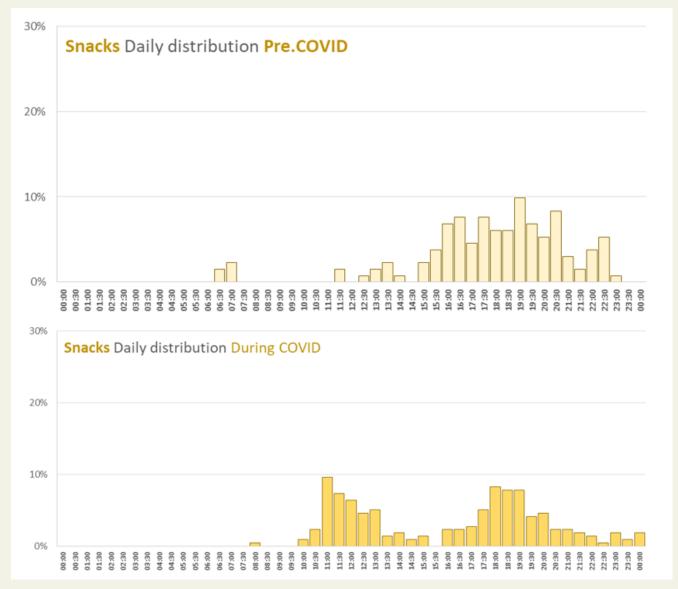






## Pre/During COVID social mobility measures Snacks in EA; picture meta-data



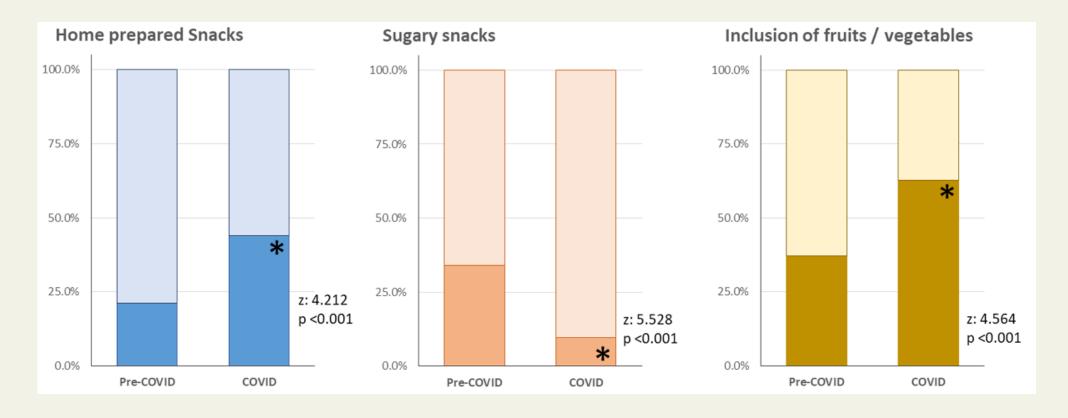






# Pre/During COVID social mobility measures Snacks in EA; self-reported data

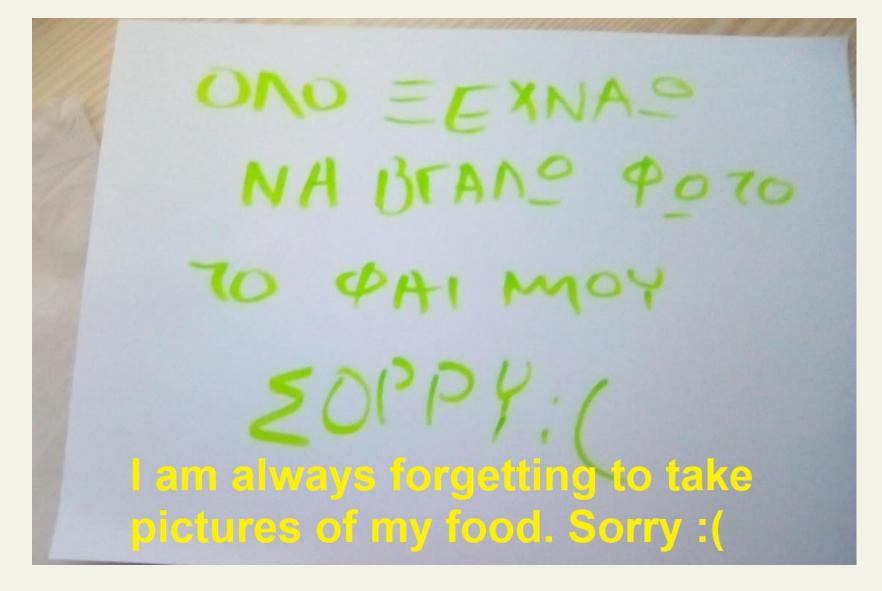




















Ioannis Ioakeimidis; ioannis.ioakimidis@ki.se Katerina Riviou; kriviou@ea.gr



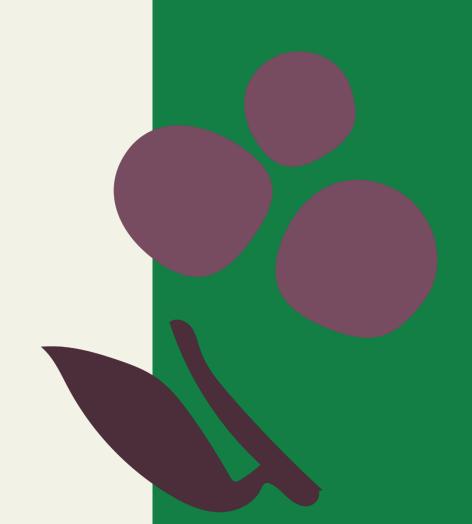






# PROJECTS FROM ACROSS FOODSHIFT

Copenhagen Emil Kiær Lund and Christian Bugge Henriksen





## FOODSHIFT 2030

# Food Schools and Cooking with Plants

Emil Kiær Lund, Municipality of Copenhagen Christian Bugge Henriksen, University of Copenhagen

FoodSHIFT Webinar, Thursday the 25th of February 2021



UNIVERSITY OF COPENHAGEN





#### Overview of Food Schools in Copenhagen

FOODSHIFT

- Average 5000 daily meals.
- 16 Food Schools. 12 Folkeskoler and 4 Special Schools.
- Decentral organization and production.
- Central support and further development.
- Students are part of the daily production.
- Families with low income pay lower price.

### TARGETS & INITIATIVES

The strategy is structured around five themes that will ensure a coherent effort with food and meals:

- · The food must provide correct nutrition and promote health
- · Taste, quality and food appreciation must be in focus
- The meals must be sustainable and climate-responsible
- We must strengthen social communities, food culture and food literacy
- · Copenhagen must be a healthy, green and vital food city

Targets have been set for each theme and the targets will be supported by a number of key initiatives. These will be supplemented on an ongoing basis by other initiatives as part of the implementation of the strategy.

#### Food School - Blue Print



- The Food School is part of the school's identity and puts a mark on the daily life of many aspects of the school.
- The Food School is more than a canteen but also an opportunity for learning, culture and health.
- Everybody eats together.
   Physical space and time for to eat and digest.
- Food is organic, seasonal and cooked from scratch.
- The Food School kitchen is a practical learning space.
- The Food School creates

#### Food Education



- Challenging students taste?
- Apprenticeship in the kitchen.
- Integrating food and teaching.
- Teachers are food ambassadors at the table.
- Building democracy.

# SHIFTING TO MORE PLANT-BASED DIETS

- Project: Led by EAT and funded by Climate KIC with co-funding from the University of Copenhagen
- Schools: Three schools in the Municipality of Copenhagen with integrated food schools
- Chefs: Mikkel Bekkervold, Michael Jensen, Mohammed Mehri
- No of students: 1369



#### ALREADY IMPLEMENTED

- Transition to 90% organic food
- Local kitchens in 16/60 schools
- Students contributing actively to the preparation of lunch meals
- Weekly menu developed based on input from students
- 80%-90% of students subscribe





#### STUDENT CONSULTANTS

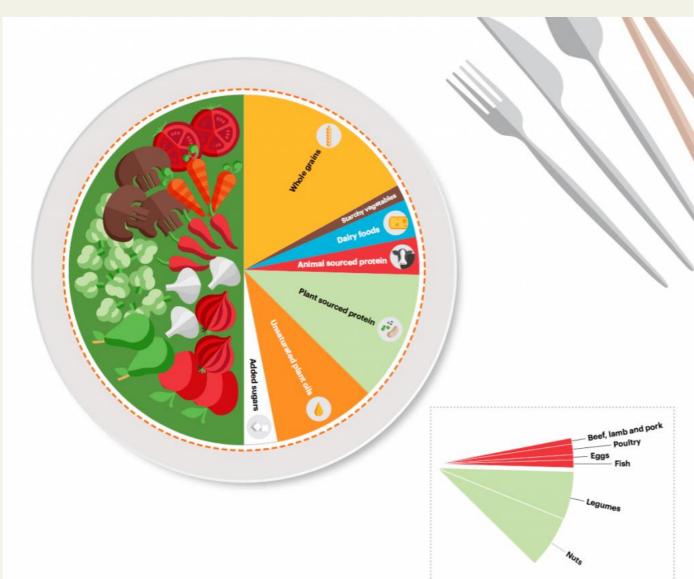
- 15 students following the course Climate Solutions at the University of Copenhagen
- Worked full time during 10 weeks as student consultants having the three Food Schools as clients
- They were trained in consultancy,
   GHG accounting and carbon
   footprint analysis
- And learned how to develop scenarios for reducing GHG emissions from food value chains





#### OBJECTIVES AND METHODOLOGY

- Objectives: 25% reduction of food related GHG emissions
- Step 1: Determine the annual baseline food related GHG emissions
- Step 2: Develop example of twoweek menu based on adapted EAT-Lancet Planetary Health Diet
- Step 3: Assess the emission savings by implementing the adapted EAT-Lancet Planetary Health Diet





#### EXAMPLE RESULTS FROM ONE SCHOOL

- 22% reduction by reducing meat to once a week
- 31% reduction with zero beef
- 45% reduction with only vegetarian food
- 60% reduction with vegan and local food

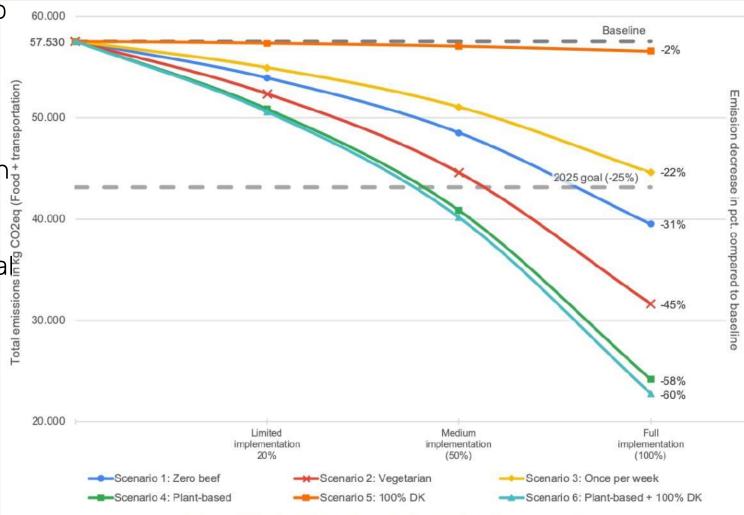
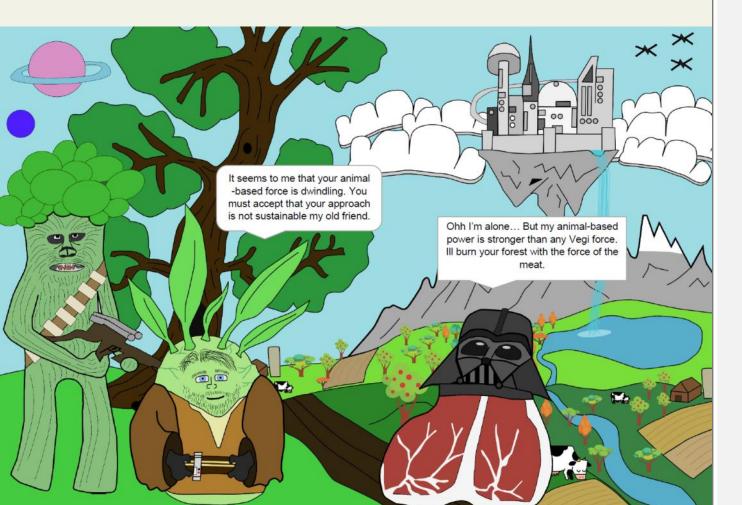
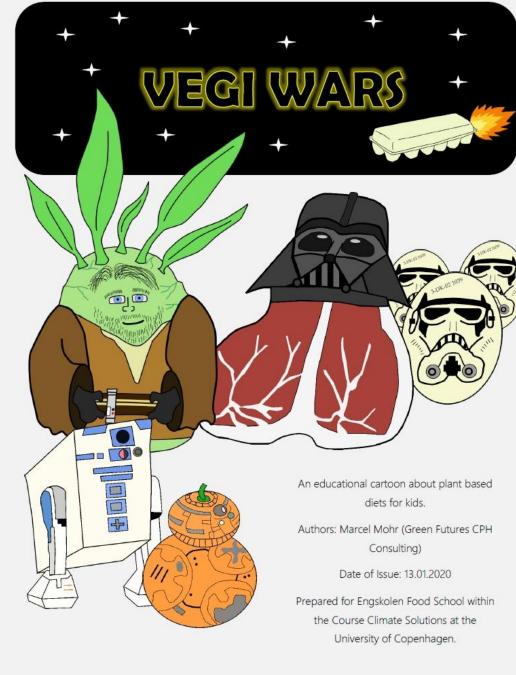


Figure 17 Effect of implementation of alternative cooperies

#### EDUCATIONAL CARTOON

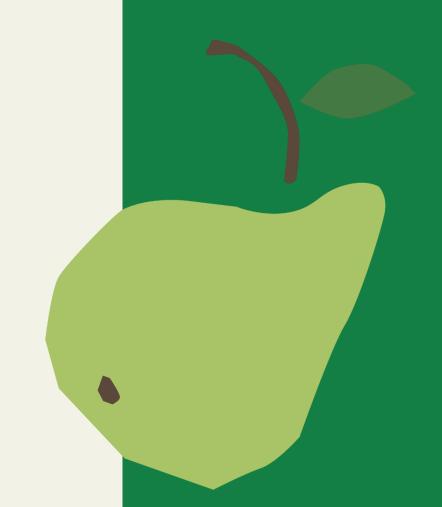






#### THE LONDON EXPERIENCE

London
Rachel Copus
and students from Northolt School





#### Food education in schools

Fresh Enterprise- unlocking the next generation of food entrepreneurs



**Rachel Copus** 

Partnerships and Programmes Officer www.schoolfoodmatters.org



#### Who are we and what do we do?

- School Food Matters teaches children about food
- We aim to improve children's access to healthy, sustainable food during their time at school
- We provide fully funded food education programmes to schools. Our experience delivering these programmes informs and strengthens our campaigns, bringing the voices of children, parents and teachers to government policy



#### Fresh Enterprise







#### Why Fresh Enterprise?

- Students lack knowledge of the range of careers in the food industry
- Few opportunities for students to gain practical real-world experience
- Limited opportunities to speak to people employed in the sector
- Opportunities to be innovative or creative with food are minimal



#### The shape of the programme

- Production tour of the Belazu factory
- Cooking masterclass to learn about making sauces and pastes
- Marketing workshop to help students think about how food is marketed and how they would design a product label
- Tasting panel where students present their own sauce or paste to the Belazu team
- Winning sauce goes into production



#### Production tour





"I loved seeing all the machines. Can we come to Belazu on another day too?" *Student, Cardinal Wiseman Catholic School* 



#### Cooking masterclass





"My favourite part was making our own paste because it was a chance to create." *Student, Dormer Wells School* 



#### Marketing workshop





"I loved learning about all the different jobs in making a product." *Student, Greenford High School* 



#### Tasting panel





"My favourite part of the programme was selling our product to the judges." *Student, Northolt High School* 



#### Fresh Enterprise in numbers

The table shows the numbers of students who have benefitted from the programme both this year and in total since the programme began in 2016

PROJECT ELEMENT	NUMBER OF STUDENTS, 2020	TOTAL SINCE 2016
Production tour	86	218
Cooking masterclass	122	382
Marketing workshop	34	288
Tasting panel	15	54



#### Teacher feedback

"This has been a really great experience for the students. It gave a better understanding of the different career opportunities and by developing their own product students were inspired in a way I haven't seen before."

Teacher, Northolt High School

"All parts of the Fresh Enterprise project are equally successful as the programme takes the students from the raw ingredient to concept, development, marketing and finally presenting to a tasting panel."

Teacher Whitefield School



#### Student feedback

"My favourite part was creating our own paste with our own choice of ingredients! We could be creative but also make something really nice that other people like as well."

Student, Northolt High School

"I loved this project. The fact that there is so much freedom, creativity and activities to do was really fun."

Student, Dormer Wells High School

"I loved learning about all the different jobs in making a product because it helps me choose what I want to do in the future."

Student, Dormer Wells High School



#### Northolt High School:

Fresh Enterprise Winners 2020

#### LEMON SWEETNESS

3 big Preserved Lemons
4 semi dried tomatoes in oil
A pinch of dried chilli seeds
Half a teaspoon of garlic puree
1/2 teaspoons of White Wine Vinega
10 ml of Olive Oil
8 Dates
12 large Fresh Mint leaves
15g of Fresh Coriander
100ml Sunflower Oil

5 twirls of Black Pepper



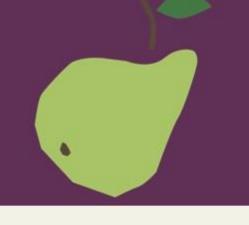
- Maryam
- □ Nicole
- Dani



#### Thank you!









#### Follow the project



FoodSHIFT2030



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foodshift2030.eu



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@FoodSHIFT2030





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