

“CircE 2” , Friday, May 27, 2022

*Food waste sector: issues, good practices,
policy solutions*

**Food waste in Poland and Lower Silesia with a
focus on bread and bakery products**

Dr.-Ing. Jan den Boer, Wrocław University of Environmental and Life Sciences
Tomasz Szuba, CEO Venturis HoReCa

Contents

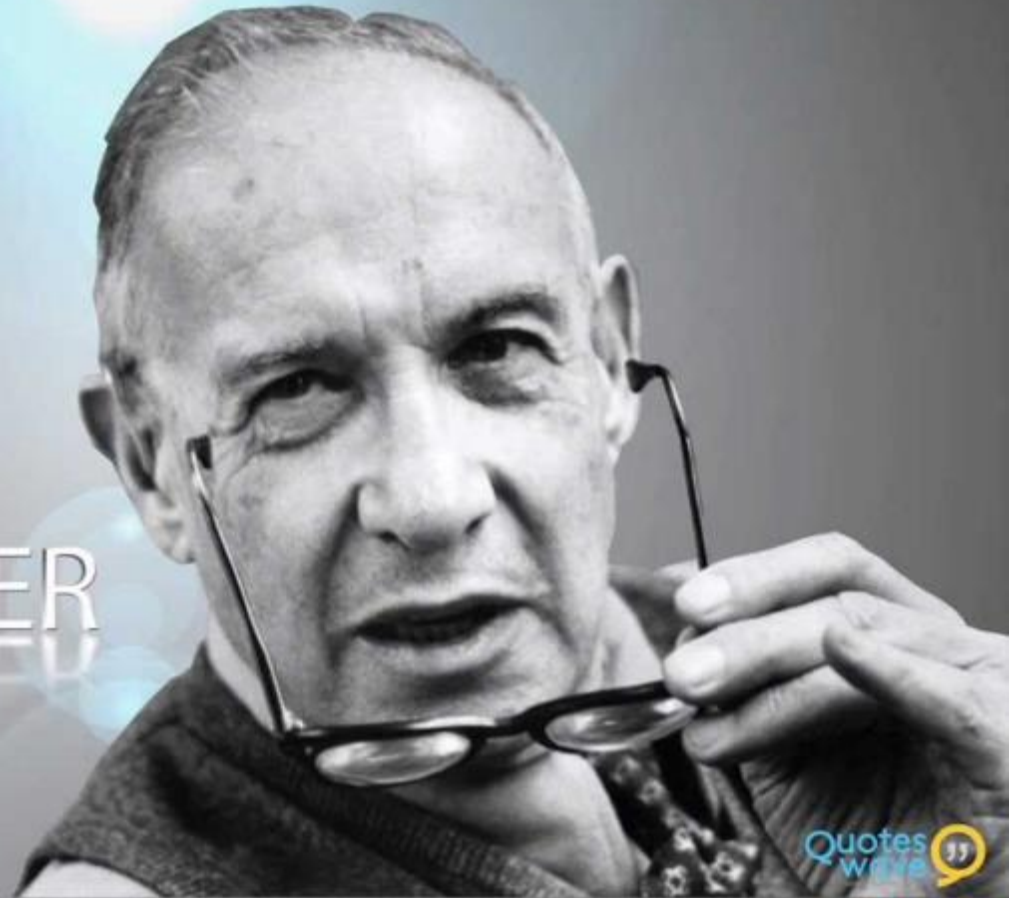
- Food loss and wastage in Poland
- Food losses in the Polish cereals-bread and bakery value chain
- Current subject of research: 1 bakery – 40 points of sale
- Outlook

Key importance: measure

**"If you can't measure it,
you can't manage it".**

PETER DRUCKER

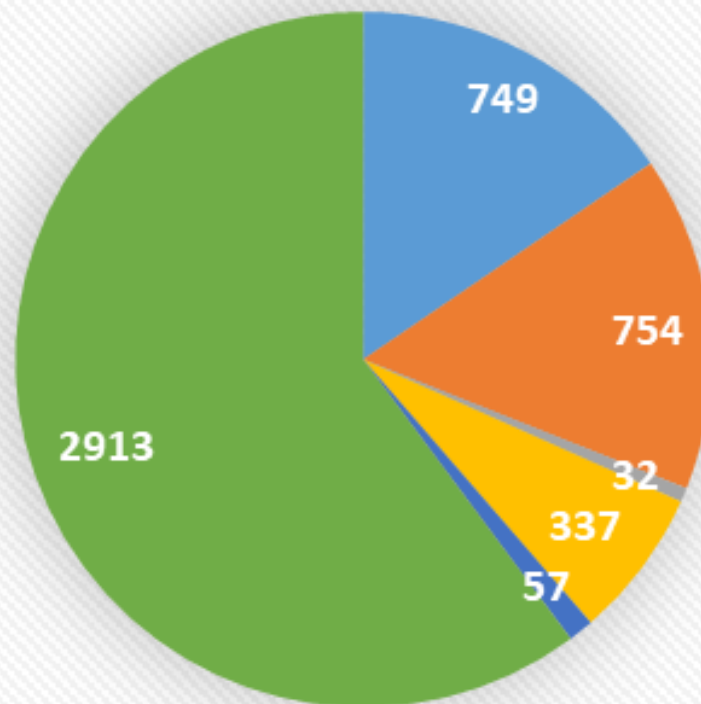
American Businessman
(1909-2005)



Quotes
wave 37

Results of the PROM project (2017-2018)

Food losses and wastage in Poland



■ primary production

■ food processing industry ■ transport

■ retail

■ gastronomy

■ households

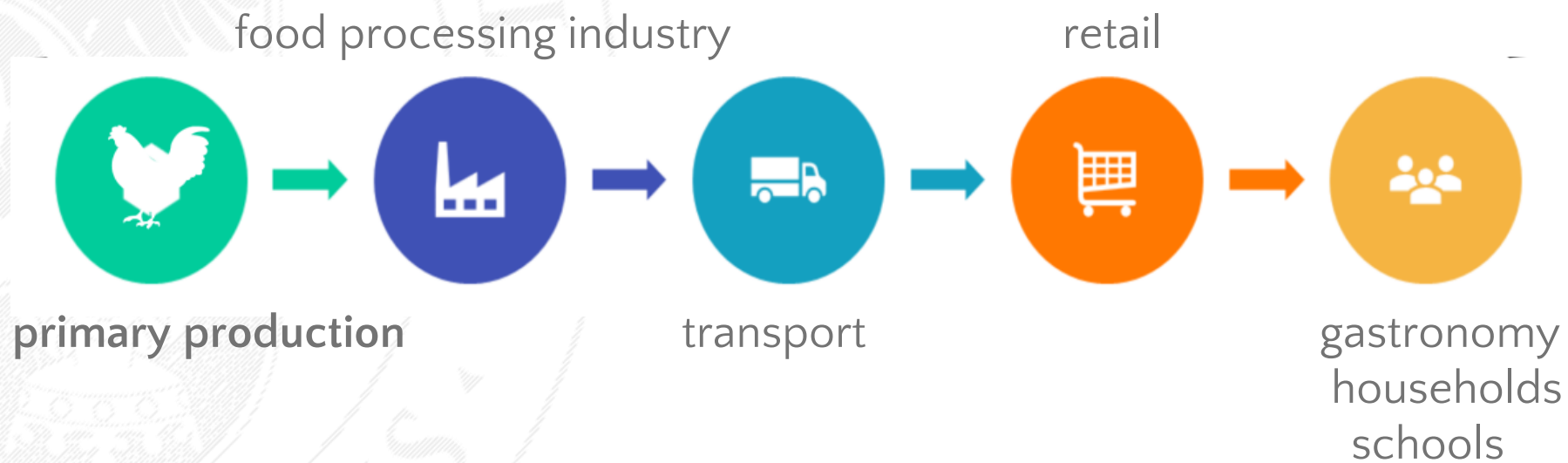
Results of the PROM project (2017–2018)

Level of food losses and wastage in Poland

	t/yr	relative	kg/hh.yr	kg/hh.wk	kg/inh.yr	kg/inh.wk
primary production	749	15%	52	1,0	20	0,4
food processing industry	754	16%	52	1,0	20	0,4
transport	32	1%	2	0,0	1	0,0
retail	337	7%	23	0,5	9	0,2
gastronomy	57	1%	4	0,1	2	0,0
Households*	2 913	60%	203	3,9	77	1,5
Total	4 842	100%	337	6,5	127	2,5

*) food waste- edible (avoidable) and non-edible (unavoidable), based on food waste diaries

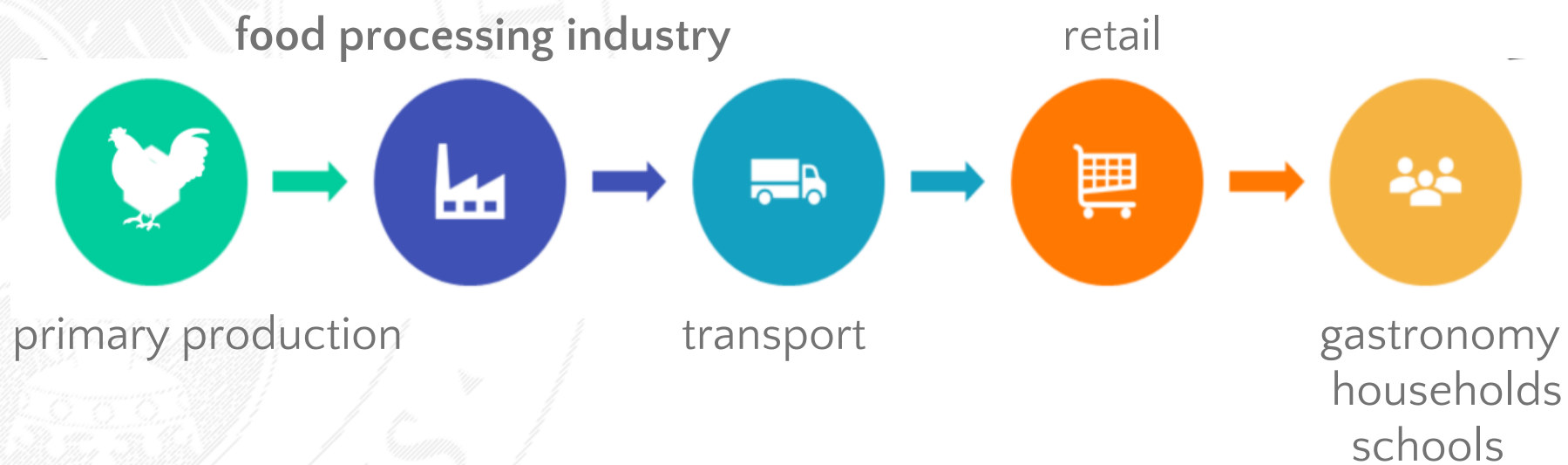
Food losses in the Polish cereals value chain



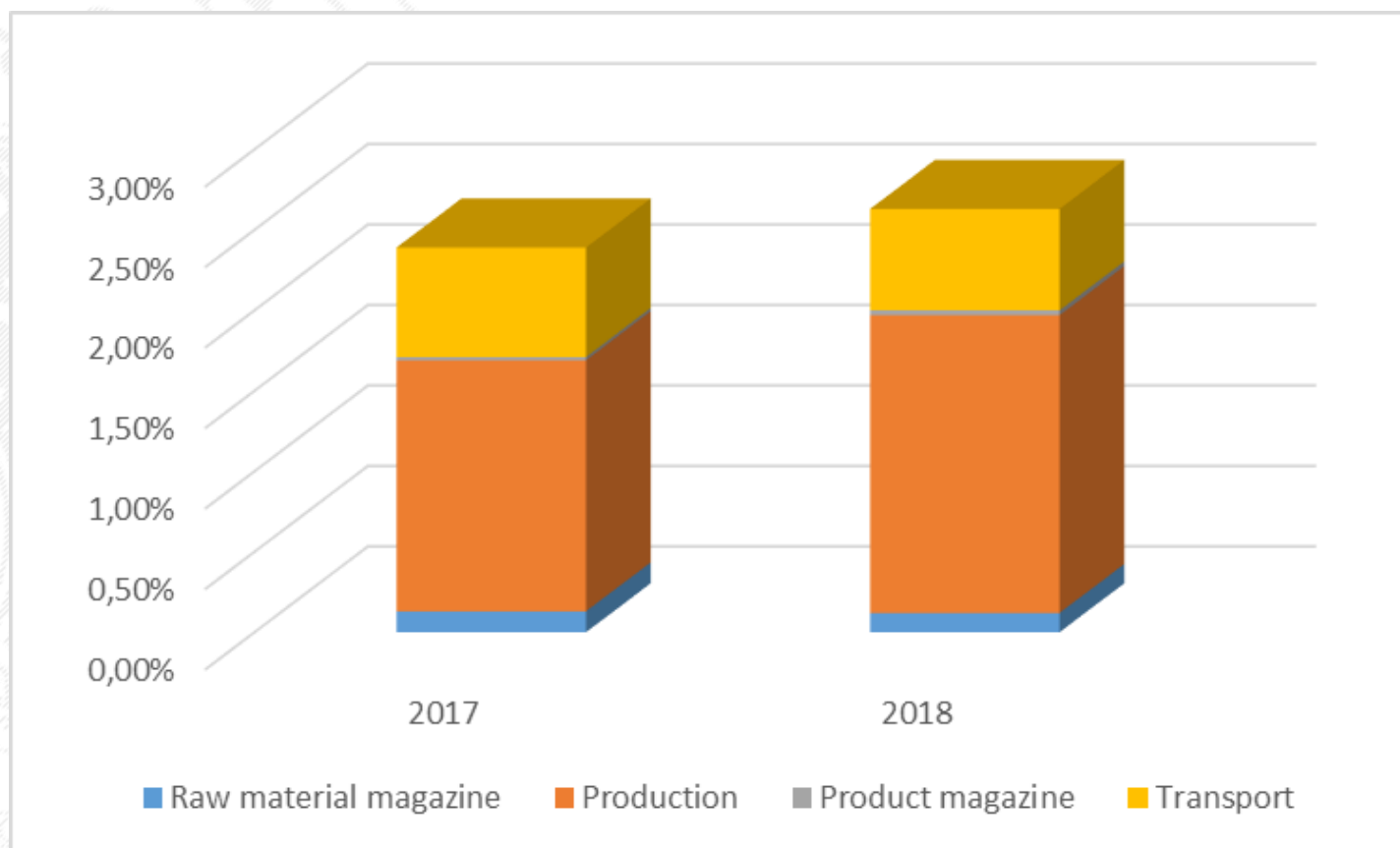
Food losses in agriculture - cereals

- 1,7% average losses in 2017–2018 (at farms, including transport&storage)
- 29% the overall losses in primary production
- 217 thous. t/yr

Food losses in the Polish cereals value chain

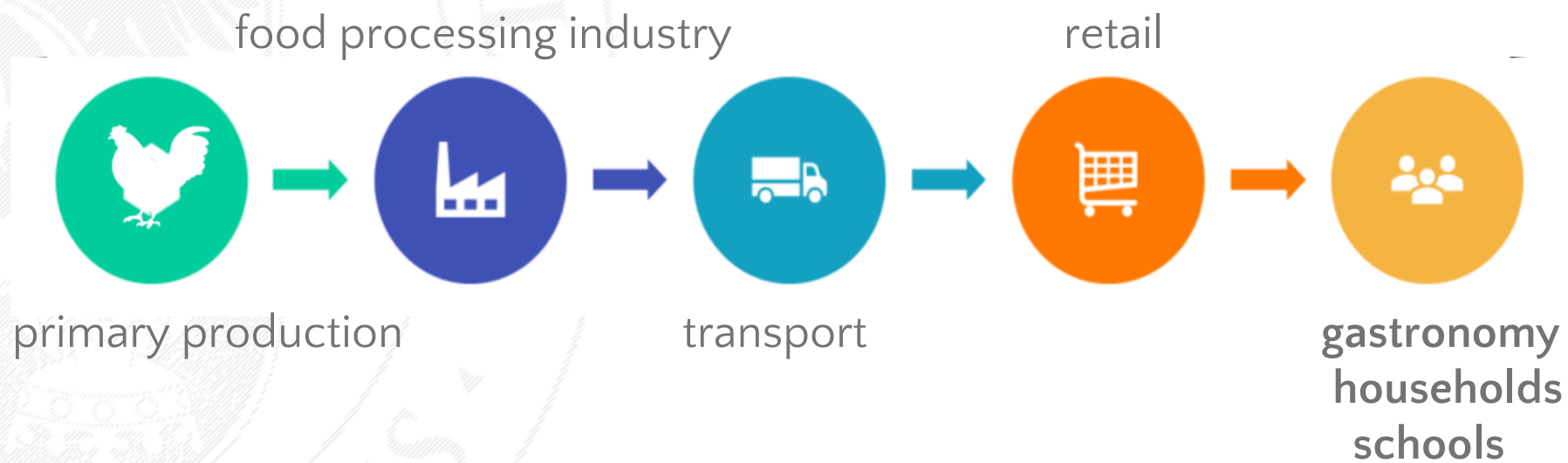


Food losses in bread and bakery production



- 307 thous. t in 2017; 263 thous. t in 2018
- 8,1 kg/inh in 2017; 6,9 kg/inh in 2018

Food losses in the Polish cereals value chain



Bread and bakery wastage in households

Residual waste composition

City of Wrocław (641.000 inhabitants)	share of housing [%]	kitchen waste [%]	avoidable kitchen waste [%]	bread and bakery [%]	total share bread and bakery in residual waste [%]
One family housing	22%	28,1%	33,7%	29,5%	2,8%
Multi family housing	38%	30,4%	28,7%	34,7%	3,0%
Centre	40%	23,1%	22,9%	29,5%	1,6%
City total	100%				2,4%

City of Opole (128.000 inhabitants)	share of housing [%]	kitchen waste [%]	avoidable kitchen waste [%]	bread and bakery [%]	total share bread and bakery in residual waste [%]
One family housing	19,5%	8,9%	50,9%	20,6%	0,9%
Multi family housing	19,5%	21,1%	50,4%	24,6%	2,6%
Centre	61,1%	17,2%	50,2%	27,5%	2,4%
City total	100%	16,3%	50,4%	25,4%	2,1%

Bread and bakery wastage in households

Biowaste composition

Żary-Żagań, 4 towns, 4 village communes (96.000 inhabitants)	share of housing [%]	kitchen waste [%]	avoidable kitchen waste [%]	bread and bakery [%]	total share bread and bakery in residual waste [%]
1-family town	22%	44,1%	10,9%	33,1%	1,6%
Multi family town	38%	57,6%	15,5%	21,4%	1,9%
Village	40%	57,8%	15,7%	19,7%	1,8%

City of Opole (128.000 inhabitants)	share of housing [%]	kitchen waste [%]	avoidable kitchen waste [%]	bread and bakery [%]	total share bread and bakery in residual waste [%]
One family housing	19,5%	18,6%	34,0%	9,5%	0,6%
Multi family housing	19,5%	44,4%	25,3%	14,2%	1,6%
Centre	61,1%	40,1%	42,5%	9,4%	1,6%
City total	100%	36,6%	37,5%	10,2%	1,4%

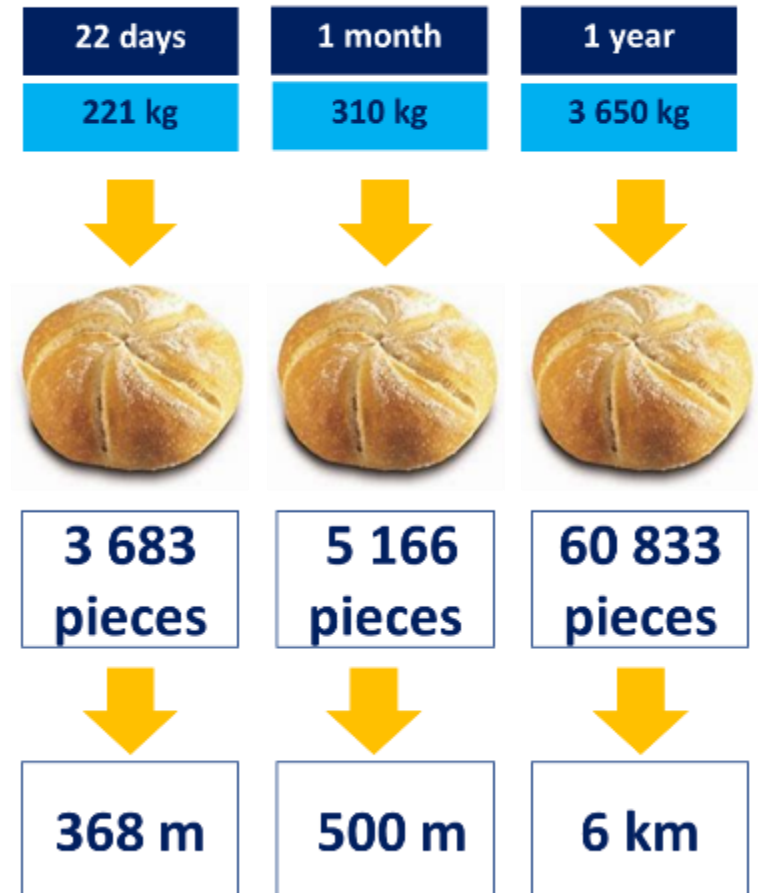
Bread and bakery wastage in gastronomy

250-room hotel – how much bread is wasted

1 roll=0,06 kg;
10cm



22 days of measurement – how much wasted:	Forecast – 1 month	Forecast – 1 year
221 kg	310 kg	3 650 kg
On average/day=10 kg		



Bread and bakery wastage in schools:

Kindergarten – 500 kg of wasted bread per year

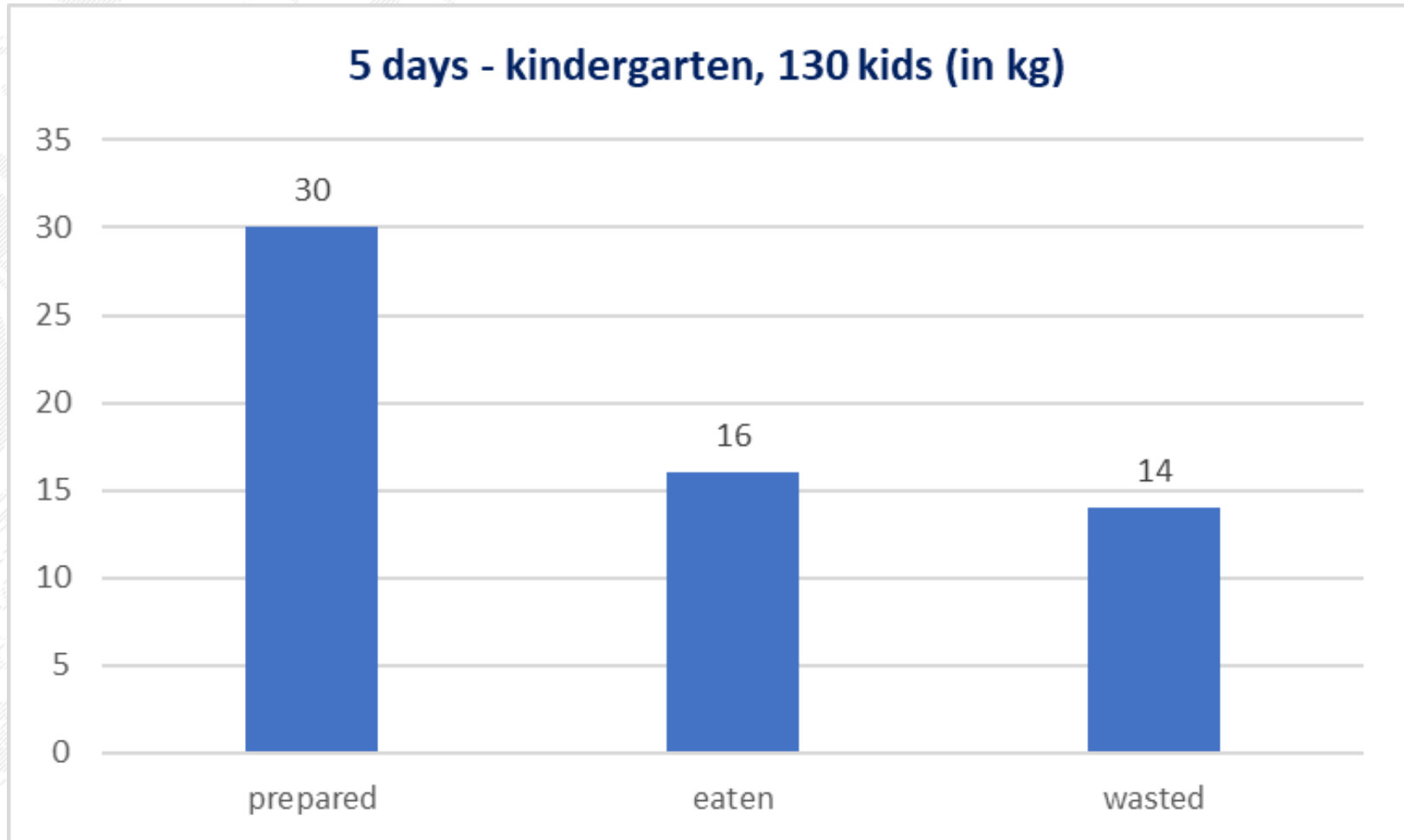
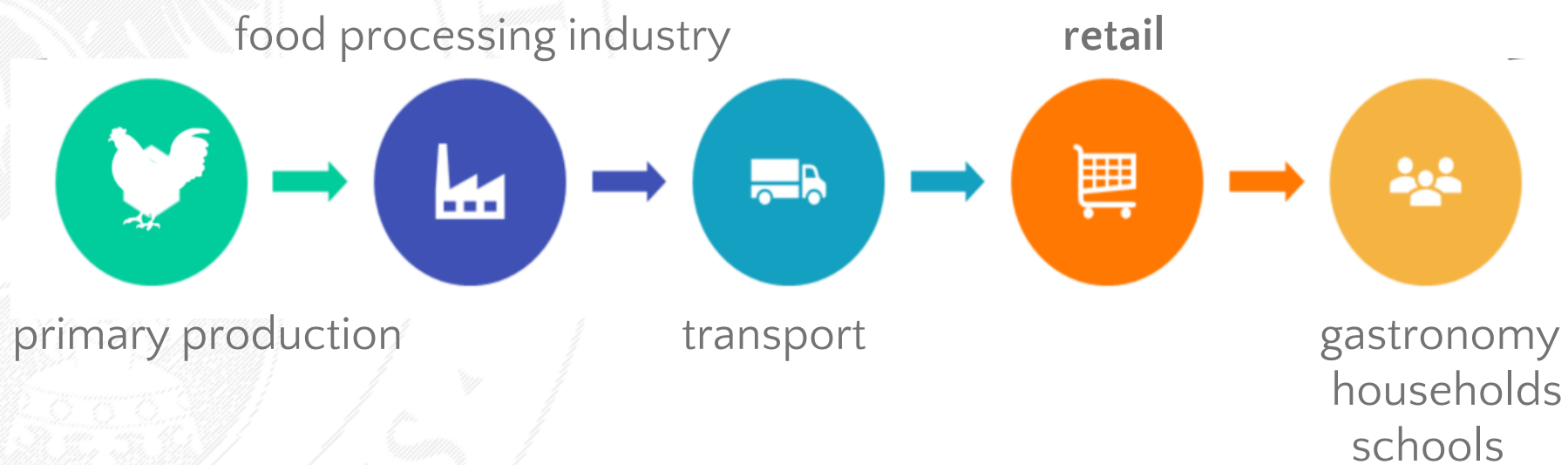


Illustration – kindergarten



Food losses in the Polish cereals value chain



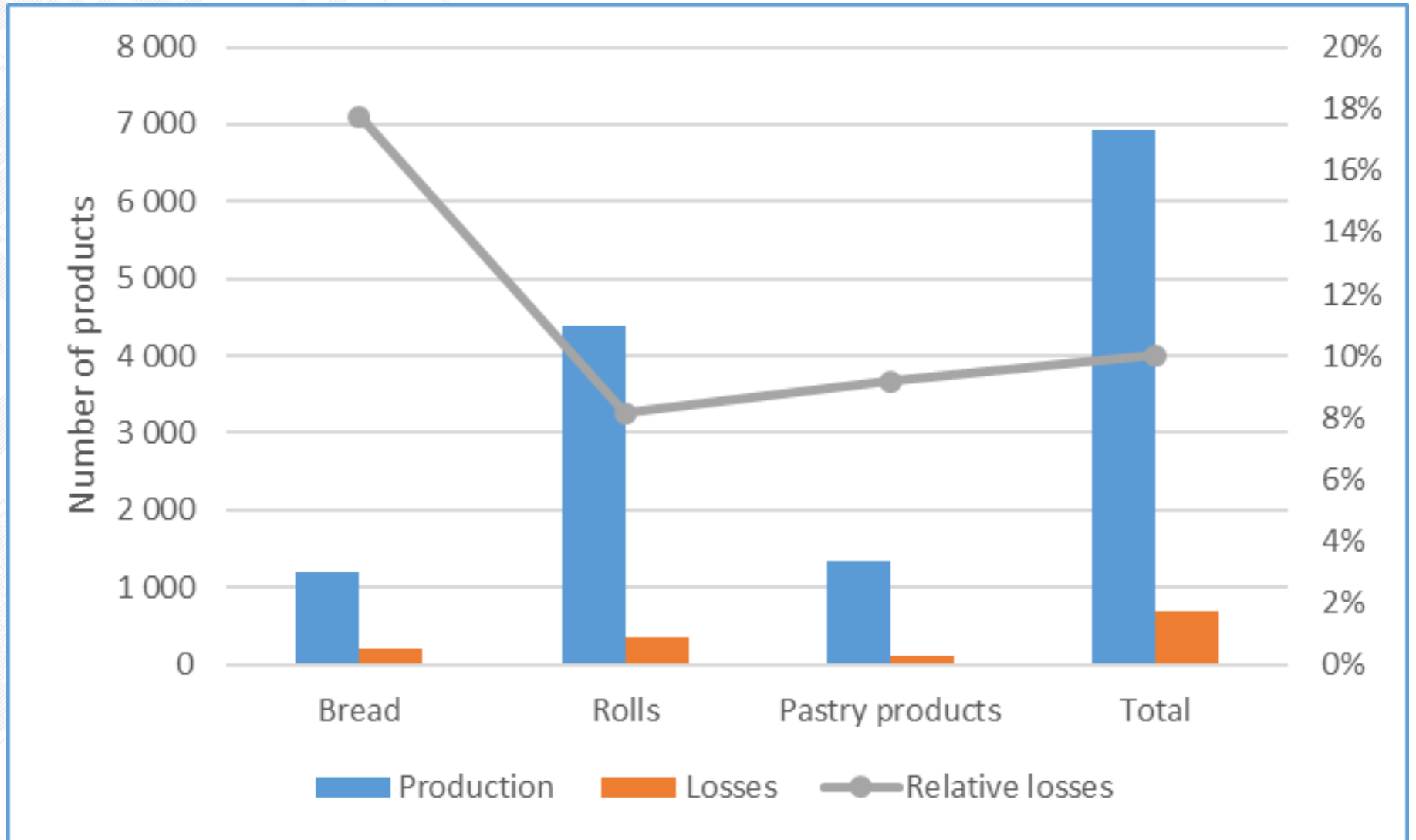
Current subject of research

Traditional, family-owned medium sized bakery

- Delivery to 40 points of sale
- Traditional baking: no additives
- Ovens are wood pellet fired
- Assortment
 - 21 types of bread
 - 20 types of rolls
 - 23 types of pastry products
- Planned monitoring: 1 week, all related points of sale

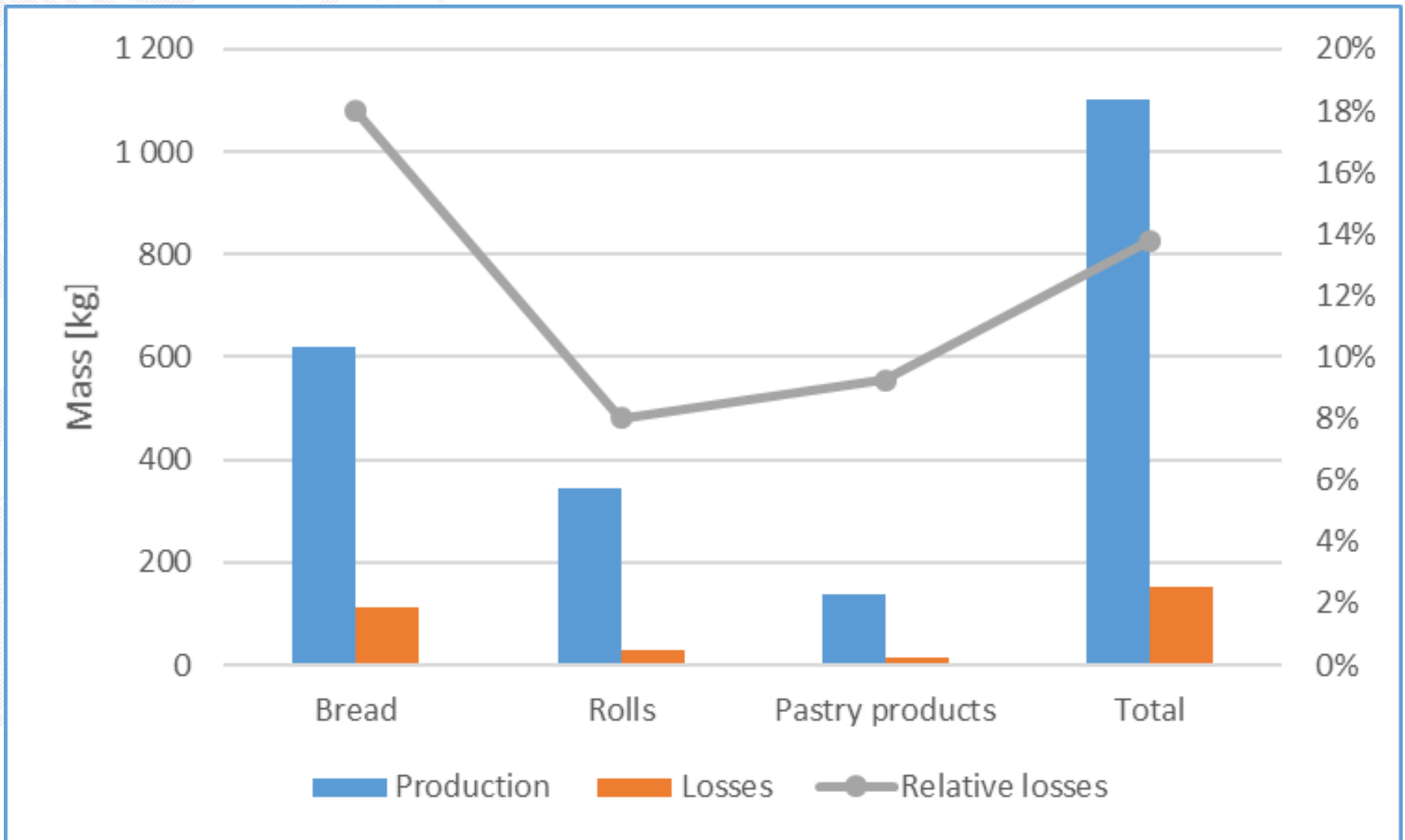
Bread and Bakery production and losses (unsold products)

Day 1, 23.05.2022



Bread and Bakery production and losses (unsold products)

Day 1, 23.05.2022



Branch related problems

- Take-back obligation for unsold products
 - nice for the shops
 - financial burden for the bakery
 - no motivation for reduction of food wastage
- „that baker in Legnica” (VAT on redistribution of overproduction)
 - urban legend, all bakers and food waste professionals heard about it
 - it is solved (but this is less known)
 - used as an excuse not to act
- Limitations/administrative burdens for redistribution (charities, animal feed)
- Redistribution: what is redistributed? *Food* or the *point of wastage*?

Charity donations – bread from hypermarkets

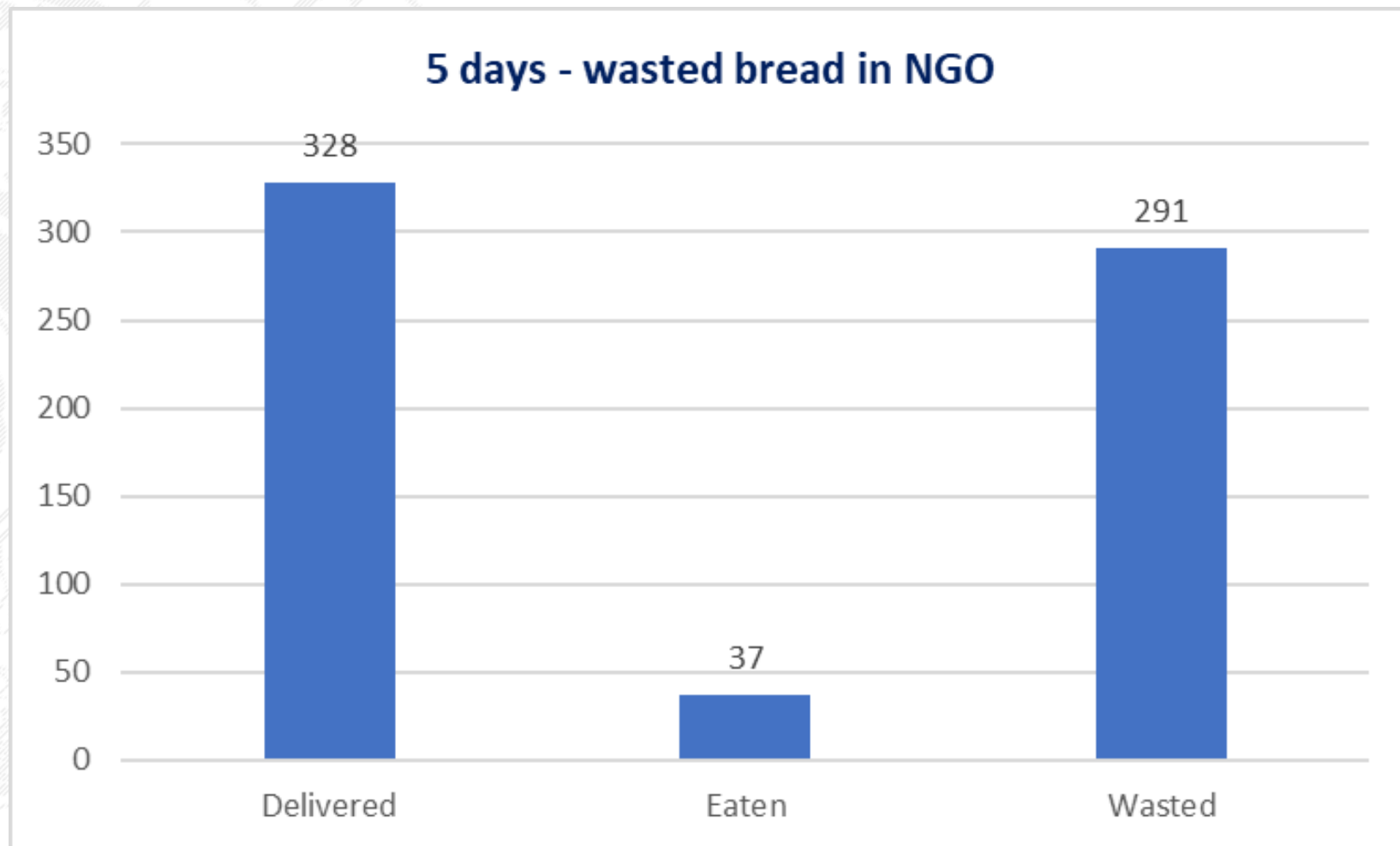


Illustration: charity donations



Further research

Consumers:

- triangulation with food waste diary results
- estimation of bread and bakery products wastage in Poland and Lower Silesia

Retail:

- finishing the quantitative research at points of sale
- desk research
 - legal restraints
 - good practices
- interviews
 - bakery owner
 - bread and bakery and general shops
 - GO's and NGO's related to food wastage and redistribution
- SWOT analysis: impact of Covid and other disasters/problems

Thank you for your attention!

Jan den Boer

Department of Applied Bioeconomy

Wroclaw University of Environmental and Life Sciences

jan.denboer@upwr.edu.pl

Tomasz Szuba

CEO Venturis HoReCa

tomasz.szuba@gmail.com