

Let's not waste food - 2

Data analysis of nine focus groups

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1. Introduction

Young consumers accept the issue with food waste and have several experiences from their own life. Even though they see themselves as responsible for the environment and not least for climate change, they also acknowledge that there is a challenge with food waste in their own household. These general findings were found in data from nine focus groups that was collected between December 2021 and January 2022 in Lithuania, Finland and Denmark. Based on a literature review on food waste among young people, a protocol for the focus group interview was made, and the setup in each country followed the same protocol with the aim to get more insights from young Nordic-Baltic people's expression with food waste and not least their own thoughts on how to deal with the challenges.

The focus groups were composed so that the participants represented young people with their own household. The participants should be responsible for the main food purchase, they should live alone or with roommates/partner but there should be no kids in the household. The participants should be financially independent, meaning that the main income should come from own work. There were no requirements for education level, nor for food preferences or diets. The setup of focus groups strived to have equality in gender and having an age span between 18 and 26. People were invited by mail for an optimal focus group size around 5 to 6 person per session.

1.1 The data outlined five scenarios

The recorded interviews were transcribed and data was analysed in the first round on three levels; (1) what the respondent said, (2) what the respondent meant, and (3) the consequences of the statement (Kvale and Brinkmann, 2009). This method was applied for all transcribed

interviews and then joined into one file. The first data analysis gave several scenarios which were then condensed into five scenarios.

- Special occasions where external issues causing food waste
- Feeling and experiences that influenced the ability to assess food quality
- Kitchen habits that could cause food waste (preparation, serving, eating, and storage)
- Buying food and food waste in relation to shopping
- General Suggestions. Ways not to waste food

Add some more text about the coding ... each of these scenarios will be further described ... followed by a section about implications and potential interventions (low hanging fruits).

Before starting analysis, it would be important to define some closely related terms we are using here. While writing about food waste, we have theoretically often referred to an issue of *cooking skills*. Very simply, cooking skills means the ability to prepare food for consumption. It could be professional cooking skills or domestic cooking skills. Here we refer to domestic ones. While analysing our focus groups data, we have to broaden our understanding of cooking skills. We constructed the main categories named from the data, not the other way around - analysing data through those categories already built. So, our categories were constructed from above. It appears that the sensory and perceptive ability to assess food quality (edibility) is a very important skill as not too many of the informants were relying on the labels rather on their senses. Then the kitchen habits like preparation, serving, eating, and storage were important when understanding food wasting. Even further away from the concept of cooking skills would be the buying skills which come with the planning of the meals and even different leftovers which could be used to make other dishes. This all suggests that if we talk about sustainable

eating or sustainable food consumption, we need to take all the process from food acquiring, through cooking, to leftovers utilisation as a whole process. We have two ways - to separate all these processes from what is called *cooking skills* or broaden the concept and talk about sustainable cooking skills which respects and includes all the mentioned processes. Here we choose the second option and refer to cooking skills as a broader term, which could be reconceptualized in urgently needed sustainable lines and ways to think about food.

1.2 Special occasions where external issues causing food waste

Young people often seem to be in a situation where plans are being changed. This change of plans causes a mismatch between planned food purchase and eaten food, which has food waste as the consequence. The respondents acknowledge the problem, but at the same time they have difficulty seeing the solution to unforeseen events. A respondent from Lithuania express their concern this way; "*... we try to do something about it, but sometimes you just can't*".

Reasons for not being able to control these unexpected changes in plans are based in circumstances that are beyond the person's own influence. One example of such an occasion could be an invitation from the family, a situation at their job , or it could be friends calling for an unplanned trip into the city. A respondent from Denmark express the situation by; "*... then you might not be right at home to eat the leftovers ...*", which can be supplemented by a Finish statement outlining work related reasons for food waste; "*... then we buy food for a longer period, and then sometimes I have to leave suddenly from home because of my work*". These findings are in line with the research by Evans (2012) where life as a mid-20, typically single person having an erratic work schedule that includes traveling, might be a reason for wasting food. From Lithuania, it is described as an unexpected business trip which is followed by; "*... then coming back in a week ... you have to throw it away*".

Eating out in a restaurant is a special occasion where participants often experience food waste, because there is more food than they can eat. The informants seem to have two different ways to solve the issue. Either they eat everything or if this is not possible then “... *I ask for some sort of boxes there and everything is fine*”. Taking leftovers from a restaurant and bring them home is not common in Scandinavia and this statement from Lithuania might also express a wish for a cultural change in the view on leftovers when people are eating out.

Not surprisingly the informants in this study came up with *better planning* as a first obvious solution to the unforeseen situation. Yet, the respondent also acknowledges that this might not be a long-lasting solution. A Danish respondent puts it this way; “*I think it requires a structured everyday life ... I do not have it with my studies and new work*”. Another potential solution can be found in the statement, suggesting that several people prepare food together and eat together. When an unforeseen situation occurs, then there will still be others in the food network to prepare the purchased food and have it for dinner. This is expressed in a statement like; “...*least it made me join several food clubs ... such social things around and eating together ...*” This last part of the comment points to another issue in young people’s life, which is the social dimension.

The unexpected situations are also facilitated by the young people themselves. Spontaneous things happen in young people’s lives, and for them it is important to be part of the social network. Well knowing that there is food at home an ambivalent experience easily arises, where on the one hand food should not be wasted, but on the other hand friendships have to be kept active. In this situation, the food waste seems to get second priority expressed in a statement where the person express being a bit ambivalent about the fact she wants to save money and not throw food out but she really does not want to say no to social networking.

Having the best intentions not to waste food in these unexpected situations seems not to be enough for avoiding food waste. A respondent from Finland express, that even though she has

planned the food and stored it in the fridge because of an unexpected situation that changed her plan, then it becomes food waste anyway as “... *especially some vegetables*” easily get old. Even leftovers can be wasted due to unexpected things to happen, as the plan of eating leftovers might be challenged by unexpected things to happen. “*Then those leftovers might also sometimes go to the trash ...*” says a respondent from Denmark. In a study by Zhang et al. (2021) the issue of utilizing leftovers was also outlined as a reason for food waste in generation Z. In that paper, food waste is related to young people’s low tendency to cook for themselves and by that to utilize leftovers, but findings from these focus groups put more nuances on the reason for food waste. Food waste seems not only to stem from abilities in the kitchen but stems also from unforeseen events in the life lived by young people and their low influence on planning.

1.3 Feeling and experiences that influenced the ability to assess food quality

Participants find it difficult to assess the prepared food. When the meal has been stored in the fridge it becomes a challenge to evaluate whether the food is edible or not. The uncertainty in own judgement causes a feeling of unnecessary waste of food. Because it is hard for the respondents to judge whether the food was inedible and should be thrown out or it was fine and should not be thrown out. In many situations, this uncertainty results in a better-safe-than-sorry argument, and the food will be thrown out in order to stay healthy.

Whether to discard a food product depends on more than health facts, as the price paid for it, influences the evaluation in such a situation. When clear mold stains are visible, it is a clear sign for inedible food, but still the price influences the decision of throwing away. A Danish respondent express it this way: “*If there is mold at one end and the other end is fine ... I would probably do that (throwing out) with a carrot or something like that ... not with sweet potatoes because I think they are too expensive*”. The participants fully acknowledge the bad conscience

that comes with judging food and making decisions based on emotional and irrational judgments, which is expressed in the statement; “... *every time you throw food out, you feel like a Satan*”. In order to come across such unpleasant feeling one solution, which is both acknowledged as irrational and a kind of self-irony, is to let the food stand for a couple of weeks in the fridge, because clearly rotten food simply has to be thrown out: “sometimes I let it stand for a week because I do not like to throw it out ... then it get even more rotten before I throw it out.”. This underlines that the feeling of uncertainty is real and knowing when to eat "old food" or not is a reason for food waste.

Adding labels on the packaging does not seem to be the solution of the problem with evaluation of food based on feelings and experiences and the subsequent waste due to uncertainty. Participants express having difficulties in decoding the labels on the packaging. Even though a label such as the Swan label has been on packaging for a long time, participants express uncertainty in knowing the full meaning of the labels or what they stand for. This uncertainty on decoding packaging information can be supplemented with other value labels such as organic or animal welfare. The participants know about the many and often too many labels, and see also some interlinks between different labels, which might end up in statement like. Why and how animal welfare and food waste can be compared was not explained and it shows, that guiding labels can be a double-edged sword. Knowledge to the label might give important guidelines, but at the same time too many labels with too many guidelines will open up for a hierarchy on which one being the most relevant. Relating this to the findings in the review by Principato et al. (2021) describing the most successful intervention being those targeting the subjective norms, it points at the limitation in human's capacity to deal with several serious issues simultaneously. This might then up in more irrational conclusion, where one inappropriate action can be offset by another good actions.

Better cooking skills are suggested for solving issues when subjective feeling and experiences cause food waste. Especially better selection procedure during purchase is stated in response to keeping subjective and idiosyncratic assessments out. Participants with good cooking skills do not need to look up the expiring data on the packaging, and it can even be utilized as a way to avoid food waste. *“I sometimes even look in the shops for some bread already there (at the expiring data) ... I'm just sorry to see it thrown out”*. Another participant from Lithuania shows how experiences from preparing food helps to reduce food waste; *“I always taste and smell ...”* and this is emphasized by the statement on explicit knowledge about specific ingredients used for cooking; *“...products that are high in sugar, they have preservatives ...”*.

However, only good sensing and cooking habits cannot prevent from the food waste. Consumers have a lot of different kind of goals related to food (in addition to food waste), such as to eat safe food and enjoy food (Hebrok & Boks 2017, Evans 2011) and time to spend on making purchases and preparing food and the personal benefits associated with food (i.e. hedonistic goals) are mostly important than normative ones (such as reducing food waste) (van Geffen et al. 2019). People desire to eat different types of food. From Finland it is expressed; *“I want to eat different kinds of food and then sometimes it is challenging to eat all that food (before it gets spoiled) ...”*. Similar situation was pointed out by the Lithuanian informant: *“it's very hard for us to plan to consume those leftovers because those desires usually change every day - one day you want something with a lot vegetables, the next day you want with a lot of meat”* Moreover, the informants does not like warmed up food which makes the consumption of leftovers more difficult. However, an interesting observation is that because of these reasons informant tries to buy only what is needed for one meal and follow the portions of food in recipes: *“...we usually look at recipes to make something new, we see that according to the recipes to buy as much as you need to use everything at once <...> We try to buy as much as*

we need for that one dish, one day, so that we don't have to throw it away. ” Whether abilities in a kitchen lead to food waste or not, these abilities seem to originate from home. Participants from Lithuania are very clear about this and express how shopping and preparing food together with mum, has made the fight against food waste possible. Further research based on kitchen habits learned from home could be relevant for food waste interventions targeting the young segment.

Senses:

Focus groups reveal that informants often trust their senses rather than labels on the products. An informant from Finland said: *“in the case of best before date products I smell and taste them before throwing away... “*, *„I smell and taste the foodusually when it seems to be good it is also edible... “*, *„I smell the food also and look if the consistency is ok ... “*. Informants from Lithuania said: *“Anyway I look at those dates for sure, I consider them, but mostly from the smell of the looks“*, *„...I trust my sensory - taste receptors to assess whether it is really a good product to use”*. This according to Blichfeldt et al. (2015) is the internalization strategy (a use of senses in deciding if the food is edible). According to authors, this strategy reduces food waste, while objectification strategy (strictly using „best before“ dates) increases food waste (Blichfeldt et al. 2015).

However, people do not always trust their knowledge and senses as the situation of a Danish informant about keeping carrots until it gets completely rotten shows. Such findings from these focus groups suggest that people would need more information about how to decide if the food is good to use and how long it will be good to use using senses (looks, smell, texture of the food) to feel safe to use it.

1.4. Kitchen habits. Food waste in relation with preparation of food, serving, eating, and storage

Main reasons identified by young people as precursors for food waste generation in kitchen were poor planning , ability and/or wish to cook,

Respondents mentioned, that **good meal planning** can decrease amount of food which is wasted. Regarding planning a respondents from Finland express ideas *.so I have not planned up a schedule for my eating and dining...anyhow I have reserved something to eat to my fridge...and then my mind can change and I don't want to eat it what there is in the fridge.....then the food is not eaten. Or „Irregularity and hurry.....or no planning and hurry...I would say that is the key reason“ ..*

Interesting data were received analysing behaviour of young people (students) in Poland¹. It was determined, that young men were more optimistic than women regarding own household ability to generate less food waste, and plan grocery shopping to eat all purchased foodstuffs. However researchers rised hypothesis that such phenomena could be explained by often situation when men are not responsible for shopping, cooking, cleaning up food leftovers. The person which usually responsible about such activities in the household usually do not express very optimistic views about avoiding food waste in their households.

Young people has many different activities in their life and food purchase or meals preparation planning may not be top priority. Young people have many different activities in their life, unexpected social events, and so it is hard to plan the food purchase or meals preparation . This is very nicely illustrated by a Finnish participant example *„...And when I have*

¹ Agriculture 2021, 11, 284. <https://doi.org/10.3390/agriculture11040284>

time I don't use it to think what kind of food I will buy next week and will the food be eaten.....rather I use the time for something else.....“

That young people do not only waste food because of their lack of knowledge or limited skills of cooking and use of leftovers, but also because of **time scarcity and their lifestyle**. „Totally agree, so you try to shop for several days, but then something social gets in the way“, „everyday life is as it is when you are young“ „my eating/dining is very irregular“ says respondents from different countries.

Wrong calculation of amount of food in packaging which purchased and which will be used was also mentioned as often reason. Big packages suggest lower price per kilogram or liter of product however residents are not able to consume it , what can be illustrated by quotes from Finland „ I will buy the package of 2 liter since it is cheap but then I will not use it“, Denmark „ also good offers on those big packages, so sometimes you buy them, but then you do not get to use it all .“ Bad calculation of how many portions will be eaten from prepared food was often mentioned as example of food planning „For me, when I make it, I usually just don't calculate it“ (Lithuania).

It was witnessed failures to organise meals during week. Young people tended to **stick to consumption of same meals** very often, as example quote from Lithuania „.....there is sometimes that for each breakfast we prepare pancakes, pancakes, pancakes of all kinds. And so I stopped doing them. And so it turns out that that milk is not needed any more, because we shift for, say, some hot sandwiches. This is also the case with hot sandwiches It settles down for some time too, and after I do the next dish, it stays that way“.

Respondents mentioned that they need more information or suggestions on how to organise meals during the week to avoid consumption of boring food (each day same product), a bigger variety of meals.

Types of food wasted

No quantitative data or frequencies which type of food was most often wasted were collected in our study. However, there is a hypothesis, that people mention as examples items which are wasted most often or it is most sensitive question. While the findings are not suitable to „generalised“ for all young generation in all three countries, they represent main groups of food which was wasted.

Typical food waste items produced by youth were vegetables, dairy and meat products. Specifically, most disposed of vegetables such as a lettuce, spinach, cabbage, salads were for reason that too big package size or size of products. Lithuanian respondent summarise situation in such way “...*I just can't eat any more cabbage, the leaves are wrapped, I remove those wrapped anyway*“. This show good intention of respondents to eat vegetables, but cabbage size is just too big in comparison with their ability to eat it during one serving. Even several respondents added how they try to use vegetables or fruits „*I throw away the damaged part and try to use the rest*“, this just show that wrong size of product for household size generate more food waste as leftovers, peelings, and etc.

Unacceptable sensory quality is important criteria to decide is food still eatable or should be considered as food waste. This factor for decision is used in different situations and can be related to the food preparation, storage and etc.

Young people were tended to throw out foods products that *are used seldom*, home made food/meals, products that are used just a little amount at once. For example quote from Finland : *„Also those products that is used just a little amount (and not daily) but you can't buy them in little packages, like currypaste or pesto or also crushed tomatoes....and then you use them just once and the rest is not used“*

1.5 Buying food and food waste in relation to shopping

Shopping and meal planning has been identified to be one way to reduce food waste (Secondi et al. 2015, Stefan et al. 2013). Quite many Finnish participants brought out that going to the store without a list is one of the reasons that cause food waste. *“At the grocery store I start to wonder which food products we have at home and then at home I notice that we have already 10 packages of those products”*, told one Finnish participant. *“I don't plan enough carefully and then I buy too much and too big packages...”*, brought out the other young Finnish participant. Making shopping list was seemed to ease shopping phase *“But anyway, it's just more convenient on the list because I like to just shops fast”*, described one Lithuanian participant. Anyhow, **some participants have brought out also opposite opinions about the effect of planning**. Some of the young people felt that a shopping list is not necessary, and it can even lead to buy food that will not be used. *“No, I don't make a shopping list, I usually eat similar food for real”*, express one of the Lithuanian participants and the other Lithuanian told *“Well, for example, I never make a shopping list, because it seems that if I did it, I would buy what I don't necessarily need, which I might not even use”*.

Also, **doing shopping when is hungry or spontaneously** can cause food waste “...Well, it's just when I go to the store and I'm hungry ...so I will gather a little for everything, goodies and all that stuff, which then I doesn't, then eat after that day no longer...“, told one Finnish participant. “But anyway, sometimes you desire if sometimes you want something, you see something delicious, you just buy it and so on”, said a Lithuanian participant.

Too big packages as well as reduced prices and offers emerged as the topic of debate in all three countries. “I buy a large packages of potatoes because the kilo price is more economical compare to small package, but because I live alone I will not use them so fast than should...“, said a Finnish young participant. „Also good offers on those big packages, so sometimes you buy them, but then you do not get to use it all..“ told a Danish participant. „It turns out that those big quantities, well they're super big, like we talked about that soy milk here for example and those all there say vegan drinks all that they're there just in big packs. I probably haven't even seen it in small packs, say, half a liter. Usually a liter if I'm not mistaken. Are those packaged things there - in large quantities indeed. It would be possible to reduce those quantities, it is better to buy something or weighed things in two holes, but if there is not much in it in one package, or there is a lot of volume, then it is really such a waste“, described a lithuanian participant. In addition to vegetables and soya milk the participants have brought out that milk and bread products' kg price is often cheaper in big packages. According to Williams et al. (2012) 20-25% of households' food waste is caused by excessively large packaging or packaging that are difficult to completely empty.

2. Suggestions

Suggestions presented by respondents could be divided to few areas related some of them related directly to individual person life and some of them related to society. In general, most of suggestions presented by respondents were related to skills, new practices , joint action of all community at all levels to decrease food wastage.

Skills

Youngster mentioned they need better skills in planning and cooking as discussed in previous chapters. They still need more knowledge and skills, for example how to store fresh vegetables and fruits for a longer period using proper temperature, humidity or suitable packaging. Some practices were already known for them like food freezing, but skills on how to use frozen food later were missing for example one lithuanian person said „freezer is food cemetery, food is freezed and then thrown”.

New technological measures. Any practical method that can help to measure a suitable amount of food better is also needed. For example, regarding different apps on mobile phones Finnish respondent mentioned „*application which could help to evaluate how much food is needed for different meals*“, as one of the most important reasons for food wastage by their understanding was identified as the wrong amount of food purchased or prepared for meal.

New practices

New way of living can change attitude to food wastage significantly by few ways of mean. First of all it is significant change at of people which surround youngsters with their attitudes.

Influence of new people with different attitude to food wastage. A situation of how to change attitude to food waste was explained by responded from Finland *“my girlfriend, she noticed that I was throwing a lot more food than she in the trash. My girlfriend suggested that every time I throw food in the garbage, I put money in a bowl and see how much has accumulated. The bowl is full now. Then I start to think that I have to do something”*. Simple practical experiment indirectly to measure frequency when food is wasted” . Suggestion of such simple exercise which allows for a person to indirectly measure how often food is wasted and evaluate results will not give direct answer of what type of food was tasted or what were the main reason for wastage but it shapes an understanding of how often food is wasted.

Suggestions on Society level

Joint action of all society can be effective too. For example food sharing initiatives or practices would be very important to people who started to live alone as was mention by lithuanian respondent *„the problem is that when I make only for myself some of the food and products are left, it seems to me a good solution is to share it with others. I don't know to feed a friend or give to the flatmates. For example some you have some leftover dill, offer it to others to make something, just share more... Commonality... Because one doesn't use everything.”*

Any means like social media or special groups where people can find people with whom to share food or meals can be adopted. If a person changes their place of living and especially moves to a in different city, they have limited access to local networks and food sharing possibilities. Thus, it is good to have places like a joint kitchen in a dormitory, or a social place in the city where everyone can share surplus food or meals without any limitations.

Change **social norms** regarding perception of ... stigma of discounted food purchase

Need of national or worldwide agreement to decrease food waste was mentioned by respondents. If an individual person will see that personal efforts are meaningful as big players as 'supermarkets' or restaurants do effort in similar way it will be more motivating . It was nicely explained by respondent from Lithuania *“I'm going to go back to my own that responsibility shouldn't fall on people, should fall more on the retailers . I don't see it well, I have a very minimal understanding laws and so on, but I don't see a reason why shops he shouldn't pay an extra fee for the food he throws away. And why or why it shouldn't be up to a certain point of certainty because we could not give all the food. In some cases, faulty foods are faulty foods, but why can't they be forced to do exactly the food they can no longer sell, but which is perfectly great type of use for eating, why can't it be handed over, and why shops are unforced to do so. For me, that's what it is”*. It was echoed by a few more respondents which mentioned various taxes.

In Finland discounted food products with red labels (-30 % or -60 %) have reached social acceptability by many kinds of consumers and they are bought by different kinds of consumers (belonging to different income categories). Also many young participants brought out that they buy those products: *“Every time when I go to the grocery store I check if there are discounted food products. It is a very good price for a student.....”*. Anyhow the challenge is that discounted products can lead to people buying too much food *“When I go to the store and I find the product which is -30 % cheaper and I buy it but then I forget it and the date will expire and it will go to the garbage”*. So discounted products can help the retail sector to reduce food waste but can increase food waste at household level. Thus, the retail sector should encourage and find ways to reduce also households' food waste.

Information why society waste so many food by identifying reasons of such wastage should reach not only young people who started new period at their life but also their relatives from different age groups. For example it was mentioned by Lithuanian respondent *“I would rather integrate such a thing into children's teaching in schools because we have cooking lessons at work anyway. No one teaches you not to waste food, they teach you how to produce, but do not teach, how to marinate chestnuts or how useful a compost is. Because still, kids take a lot out of school. And if your parents can't give it, then you can at least try it a little bit giving that to me would be such an issue”*.

Some remarks were made also, that information which comes from official institutions is not accepted at same level as if same information is presented by popular person: *“ think just because you see that this is an institution, some kind of you you're less inclined to read it because it's written off as such some sort of thing, and if you've been given that by someone you're following, then means that it is at least somewhat interesting from there's such a human connection at once and well”* (Lithuania).

[Comment by Ugnė] As we talked, we needed to check the suggestions of informants in our interviews. From two focus groups in LT situations were very different. One focus group (LT_3) asked about what could be the suggestions, those direct suggestions by informants we have marked in “Summarized table for data analysis” in this way: **(Suggested by Infomants)**. Not all, even not the bigger part of what is written in section “GENERAL SUGGESTIONS” are directly suggestions from informants. From the another focus group (LT._2) there were none of direct suggestions by informants mentioned. Those suggestions went uneder other

categories such as packaging, quantities. I added it in the end of the table. Again, none of the already mentioned quotes in “GENERAL SUGGESTIONS” are made by informants directly. However, I see the complicated situation here, as informants before share what they do, what they know other people do, where to get information. But in this particular focus group they are not asked “what are your suggestions”. When they finally are, they say “it’s what I have been telling before”, and they elaborate on supermarkets because we asked directly what could be done by supermarkets. **So this question of direct suggestions by informants are a bit tricky.**