Supermarket Packaging Audit

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Introduction

This focus study is part of VOICE Ireland's National Recycling Bin Survey (NRBS), which looks into what goes in our household recycling bins and where it's coming from. In the latest edition, NRBS25, supermarkets were identified as the biggest contributors to household packaging waste, with a striking 70% of recycling bin contents linked to supermarket purchases. That constitutes an increase from the 66% attributed to them in NRBS23.

This time around, we wished to complete the NRBS by carrying out an additional piece of research comparing the five main Irish supermarkets. Through the purchase of a sample basket in each of these retail shops, we analysed how much packaging waste a typical grocery basket generates. We also examined how these compare to a zero waste basket, sourced through alternatives like refill and packaging-free shops.

This study dives into the details of how supermarkets are addicted to plastic and packaging and what a more circular approach to grocery shopping could look like.

Background

We have a plastic and packaging issue. Single-use and unnecessary packaging production keeps increasing, creating a global crisis we don't seem to be able to sort out. Recycling is failing to mitigate this crisis and the industry is still forecasting growth. We need to push for reduction and reuse solutions in the country and beyond.

In this global crisis, Ireland is no different. In fact we are the number one producer of plastic packaging waste per capita in the EU, with 67 kilograms in 2023, which is a 50% increase since 2013[1]. In the past 10 years we have become completely reliant on single use packaging, mainly made of plastic. Although now we have to face the fact that this consumption model cannot be made sustainable.

> **"Ireland is the number one producer of plastic packaging waste per capita in the EU, with 67 kilograms."**

Previous work by VOICE: Supermarkets and plastics.

In the 2022 VOICE contributed to the Underwraps Report. The five largest supermarket chains in Ireland were provided a questionnaire to assess their plastic targets and transparency. Only three provided a response to the questionnaire, and only two of those replies were deemed to be meaningful. Aldi led the ranking across all categories, scoring the highest overall at **61 points** out of a possible 100. Lidl fell far behind Aldi with a score of just **16**, but came ahead of Tesco's mere **3 points** and the zeroes awarded for lack of response to Supervalu (Musgrave) and Dunnes Stores. Ireland's country average, accounting for the results from these five supermarkets, came out to just **16 out of 100,** ranking Ireland fifth out of thirteen countries participating across Europe.

Industry targets fail to drive real change

A review of the current targets from each company's sustainability page reveals a strong emphasis on recycling, with a common flagship goal being to **make 100% of own-brand packaging recyclable, reusable or compostable by 2025**[2,3,4]. With loose definitions around these adjectives, we can rightly wonder if that will really have any significant impact long-term. Additionally, recyclable does not mean it will be recycled. In fact, Ireland's recycling rates are stagnating, despite an increase in recycling in volume. The issue here is not recycling, but rather that packaging consumption is increasing 2.5 times faster than recycling capacity.

Therefore the right approach should be to turn the tap off and reduce the amount of plastic we are producing.

In their approach, supermarkets only consider REDUCE through an efficiency standpoint, primarily aimed at reducing packaging weight rather than through a systemic shift that actually eliminates packaging for products that do not require it. This trend leads them to put more soft plastic on the market, which is known to be much harder to recycle.

Most of these commitments are set to be achieved by **2025**. As this deadline approaches, **we are calling on supermarkets to publish clear progress updates and to incorporate the recommendations outlined in this report into their next set of targets and reduction strategies for 2030**.

Main Findings

A typical weekly supermarket basket of **30 items** generates, on average, **40 pieces of packaging waste**.

9 out 10 times, products were wrapped

Dunnes Stores came out as the worst offender, with **44 packaging items** in a single basket.

In contrast, shopping through zero waste options reduced packaging by 65%, with just 14 packaging items.

The average supermarket basket cost **€63**.

Methodology

Stores and locations

To carry out the study, we selected the food retailers considering their turnover in Ireland and number of stores across the country.

Table 1: Supermarket turnover and number of stores in Ireland[5]

Supermarket chain	Annual Turnover	Number of stores in Ireland
Musgrave (SuperValu, Centra, daybreak...)	4.5 billion	840 stores
DUNNES STORES	4.1 billion	116 stores
TESCO	2.9 billion	154 stores
ALDI	2 billion	150 stores
LIDL	1 billion	187 stores

The study was carried out in the same area in Dublin City, so data are easily comparable. The five supermarkets, as well as the zero waste shops, were all located within a 15 minutes walk radius of Harold's Cross, Dublin 12 Ireland. All shopping was carried out the same day.

Upon completion of the analysis all food items were donated to Feed Dublin, a registered charity that is dedicated to fighting food poverty

Approaches used

In advance of the project, we established a list of items that would constitute the essential products in a typical weekly shop for 2 people (Annex 1). The list represents a sample shopping trolley, estimated to account for approximately 80% of a typical weekly shop, and is by nature a representative and not exhaustive sample which allows for comparison between retailers. . .. We considered that one item is one element of the list (eg. a pack of bananas is one item, four tomatoes are one item)

We chose to represent dry food(?) and cleaning products that might not come up as weekly purchases because they are a source of packaging waste which can be avoided. We decided to include two dry products (sugar, flour) and one cleaning product. We also included coffee and tea.

In all stores, we prioritised getting loose and packaging free products **whenever available**, bringing our own reusable packaging (mix of plastic bags, nets etc…).

We also prioritised own-brand products, as these are the ones retailers have committed to improving in their packaging reduction targets.

Therefore the sample from each store represents the least amount of packaging possible to purchase from them.

Findings

Since our shopping basket covers about 80% of a typical weekly grocery shop for two people, we can estimate that a full weekly shop would result in around 48 packaging items (40.6 items + 20%).

This means a household of two brings home about **48 packaging items every week,** just from supermarket groceries: or 96 items every two weeks.

That figure matches exactly what was found in the National Recycling Bin Survey, which showed an average of 48 supermarket packaging items per person every two weeks, or 96 items for a two-person household.

Table 2. Breakdown by Supermarket and Material

	SuperValu	Dunnes	Tesco	Lidl	Aldi
Hard plastic	9	8	10	10	9
Soft plastic	16	20	18	18	14
Paper/cardboard	7	8	4	5	7
Nets	1	1	2	2	3
Metal/Aluminium	4	4	4	4	4
Tetra Pak/ polyethylene	1	2	1	1	1
Glass	1	1	1	1	1
Loose	4	5	2	6	2
Total Packaging (excluding loose items)	39	44	40	41	39
Price of the shopping	**€74,71**	**€62.38**	**€66.27**	**€56.85**	**€54.65**

The overwhelming presence of plastics

Of the 203 packaging items counted (excluding loose items) across our five supermarket visits, 147 were made of plastic, an overwhelming **72% were wrapped in some kind of plastic (soft or hard plastic, nets…)**.

Soft plastics were the most used material. Representing nearly **39%** of all packaging, they're found on all kinds of products: from biscuits to fruit. Light, flexible, and convenient, these are also notoriously difficult to recycle. Rigid or hard plastics followed closely behind, making up just over 20% of the waste. These include trays, tubs, and clamshell packaging.

Nets used for garlic, lemons or onions made "only" 4% of packaging, but none of them are recyclable in Ireland. These seemingly minor items silently contribute to a growing plastic problem.

Overall, out of the 150 items purchased in supermarkets, only 19 were found loose (12%), meaning that nearly 9 out 10 times, products are wrapped.

What this tells us is that despite growing awareness and promises to reduce packaging, supermarkets are still leaning heavily on plastic. And while it may be cheap and practical for logistics, it comes at a real cost to households trying to recycle, while bringing up real concerns around the omnipresence of plastic in our food systems and therefore the impact on our health.

Other packaging: substitution trends

Paper and cardboard made up 14% of packaging items. Notably, Aldi shows a slightly higher paper/cardboard count relative to plastics compared to other stores. The use of paper and cardboard might be used as an argument to present a shift towards more sustainable packaging options. Although, the positive impacts can be discussed. Paper and cardboard are not necessarily more sustainable option environmentally, having a number of issues related to its production (deforestation, chemicals).

Metal packaging accounted for 9% of total packaging items, consistent across all supermarkets, mainly representing canned goods or foil packaging.

Tetrapacks and glass together make up less than 5% of packaging waste, suggesting these are less common packaging formats in this shopping sample.

Loose items: limited and inconsistent.

Excluding the zero waste basket, the availability of loose products varied quite a lot between supermarkets, suggesting a lack of standardized approaches or commitments across retailers. Aldi and Tesco had only 2 items sold loose out of the list, whereas Lidl had 6.All loose products were fresh fruits or vegetable (and bread from Lidl). No other category of products were available loose .Interestingly, having more loose items didn't necessarily translate to less overall packaging. In fact, despite offering the fewest loose items, Aldi still ended up generating the least packaging waste of all stores surveyed

Harmonised legislation should push for a wider range of product made available loose, banning the use of single use plastic on them entirely to avoid having up to 3 types of packaging available for one product category.

Example 1

A striking example of inconsistency across retailers was observed with tomatoes. In Lidl, tomatoes were available loose, allowing for a low-waste option. However, in other supermarkets, the same product was packaged in a mix of materials — in two cases using both hard and soft plastics, and in two others combining cardboard trays with soft plastic film. Despite these differences in packaging, four out of the five packs of tomatoes came from the Netherlands, including the loose ones from Lidl, while only one was of Irish origin.

This clearly shows that there is no inherent reason: such as origin, transport, or preservation that requires it to be packaged, let alone double-packaged. Instead, the variation highlights how packaging decisions are largely based on retailer preferences or supply chain choices, not on necessity. This inconsistency reinforces the urgent need for coordinated guidelines or standards to reduce avoidable packaging and ensure that low-waste options are made available across the board.

Example 2

Onions and garlic offered another clear example of inconsistent and excessive packaging. While most white onions were available loose, one supermarket still sold them packaged: showing again that packaging choices vary by retailer, not necessity. The situation was more extreme with red onions, which were found in three different types of packaging across stores, from plastic nets to soft plastic bags and cardboard trays. Even more concerning, Dunnes Stores sold individual garlic bulbs wrapped in plastic nets, a material that is not recyclable in Ireland and often ends up as litter or incinerated waste.

Source: Repak and MyWaste.ie.

This kind of unnecessary packaging is not only environmentally damaging but also restricts consumer choice. Some stores only offered packed options for items like onions or peppers, forcing shoppers to buy more than they need. Offering loose items can on the contrary contribute to avoidable food waste. In the case of peppers, up to three different packaging options were found in a single store.

These inconsistencies across stores underline the absence of coordinated policy and the missed opportunity to support waste reduction at the point of sale.

Same shop, less waste: the zero-waste basket

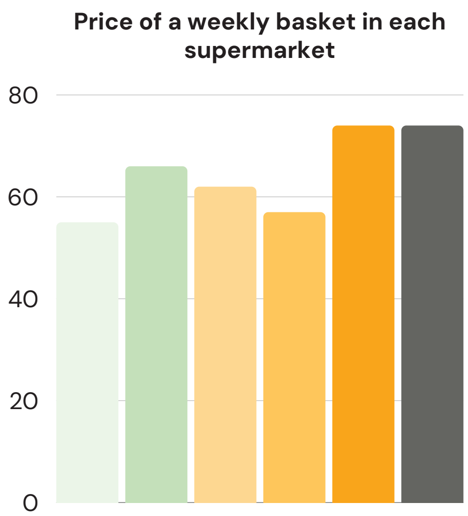
We then carried out a second shopping trip following zero-waste principles, using refill and bulk stores within the same area. The goal was to compare both the amount of packaging generated and the overall cost between conventional supermarket shopping and low-waste alternatives.

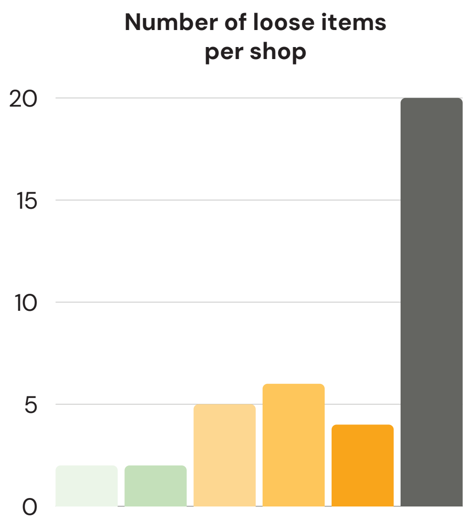
By shopping with a zero waste approach, bringing our own containers and bags, we were able to reduce packaging waste by **65%**, cutting it from 48 items down to just 17. Over a year, that adds up to **744** fewer pieces of packaging waste per person. If widely adopted, this practice could prevent **over 4 billion packaging items** from entering the waste stream across Ireland each year. It's a clear example of how small individual changes can lead to significant national impact.

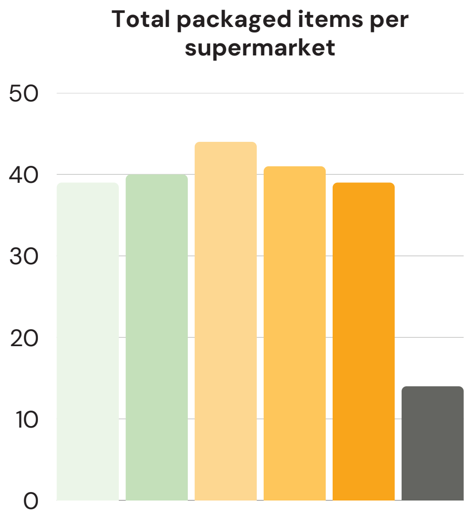
This 65% cut in our supermarket audit was echoed in real-life data from this year's National Recycling Bin Survey. Among the 50 households surveyed, four had five members. In that subgroup, one household stood out dramatically: while the average number of packaging items in the supermarket category was **225**, this household reported just **70**: **a 68% reductio**n! Their success came from a combination of shopping habits. The respondent explained in the answer 3.7 that they:

> **"mainly shop from small businesses (organic farm for fruit and veg) and I supply most of my own dried foods from wholesalers as I run a refill station. Otherwise my main grocery shop is Supevalu"**

This example reinforces how shifting a household's shopping to refill or local suppliers can make a significant dent in packaging waste, especially in bigger households. This example proves that lifestyle and sourcing choices have a real, measurable impact.







Accessibility, Time, and Cost Barriers to Zero Waste Shopping

A common preconception around zero waste shopping is that it's far more time-consuming, expensive, and difficult to access than conventional grocery shopping. This study aimed to explore those dimensions more closely to understand what barriers exist—and how they might be overcome.

Accessibility: In this study, all supermarkets and zero waste shops were located in the same urban area, allowing for a fair comparison. However, we recognise that such a variety of choice is not available everywhere in Ireland. Many rural or suburban communities may not have access to refill or bulk shops, which limits the feasibility of this model on a national scale.

Time Consumption: Shopping in a zero waste manner did take more time. While it took us an average of 35 minutes to complete our list in each mainstream supermarket, the zero waste alternative required visiting four different stores and took around one hour. This suggests a clear need for more centralised or streamlined access to unpackaged goods.

Budget: The zero waste basket was 19% more expensive than the average supermarket basket (€75 vs €63). While this difference might seem important, it's important to highlight that 40% of the zero waste items were organic, whereas none of the items in the supermarket baskets were. In fact, the zero waste basket cost the same as SuperValu's, raising questions about whether the price difference reflects real cost barriers or simply different choices in produce offered across different retailers. However, cost remains the main barrier to packaging-free products at present and should therefore be a priority in any development policy or target.

In short, our findings show that barriers to zero waste shopping persist: not only in terms of availability, but also in time and cost. However, these are not insurmountable. French studies have shown that organic products sold in bulk can actually be *cheaper* than their packaged counterparts, with savings ranging from 4% to 22%. The systems and benefits already exist. Scaling them fairly across Ireland and making mainstream products available packaging-free will require policy support, investment in infrastructure, and a strong focus on social justice in food access.

Discussion

The dominance of plastic packaging, especially soft plastics, poses a major challenge for waste reduction and recycling efforts in supermarkets.

The use of soft plastic in the majority of products offered needs to be addressed as well. Using soft plastic helps supermarkets reach their internal targets in the reduction of weight, by using less plastic overall by weight since they reduce the size and thickness of the plastic, but this does not mean they reduce the amount of products effectively wrapped in plastics.

This can be an issue when we look at the recyclability of soft plastic. While in theory recyclable and labelled as such, the reality is more nuanced. In the UK, investigations have reported that 70% of soft plastic that reached a known final waste facility destination was burnt, not recycled.

> **"In the UK 70% of soft plastic that reached waste facility was burnt, NOT recycled."**
>
> (read more here)

Additionally, the take-back schemes developed by some supermarkets such as Tesco or Lidl have been questioned on their transparency and efficiency. An investigation by Bloomsberg revealed that many items were sent to Poland and landfilled or incinerated, and some were even exported outside the EU illegally.

This study reveals a clear disconnect between Ireland's packaging waste ambitions and the current realities of supermarket shopping. While there is growing awareness and some progress, supermarkets continue to be the dominant source of household packaging waste, with an over-reliance on plastic packaging.
The need for systemic change is urgent.

Zero waste alternatives offer a compelling solution: by using reusable containers and shopping through alternative retailers, packaging waste was reduced by 65%. However, accessibility, time and price remain significant barriers for many households, limiting the scalability of these behaviours without stronger policy intervention.

> **"Supermarkets take-back schemes for soft plastic are lacking transparency, with evidence of it being landfilled or incinerated abroad."**
>
> (read more here)

Following this focus study and the wider National Recycling Bin survey research initiative's results, we wish give recommendations for decision-makers across public and private sectors.

1. **Make Reuse the Norm**
Shift away from single-use by scaling up reusable packaging systems across all supermarket categories. Set clear, binding reuse targets backed by EPR funding.

2. **Mandate Refill Options at Scale**
Require 20% of floor space in shops over 400m² to be dedicated to refill by 2030 **and** sell staple products (like grains, fruit, and veg) loose.

3. **Focus on quantities, Not Just Weight**
Overpackaging with soft plastics is growing. Move beyond weight-based targets and set reduction goals based on **quantities** packaging to better reflect environmental harm.

4. **Establish a Public Observatory to track progress**
Create a national monitoring system, like France's, to track reuse rates, sector compliance, and packaging trends. Transparency will drive real accountability.

5. **Make Zero Waste Affordable and Accessible**
Support refill hubs and incentivize supermarkets to offer unpackaged and organic products at competitive prices. Preventing waste while eating healthier should not a luxury.

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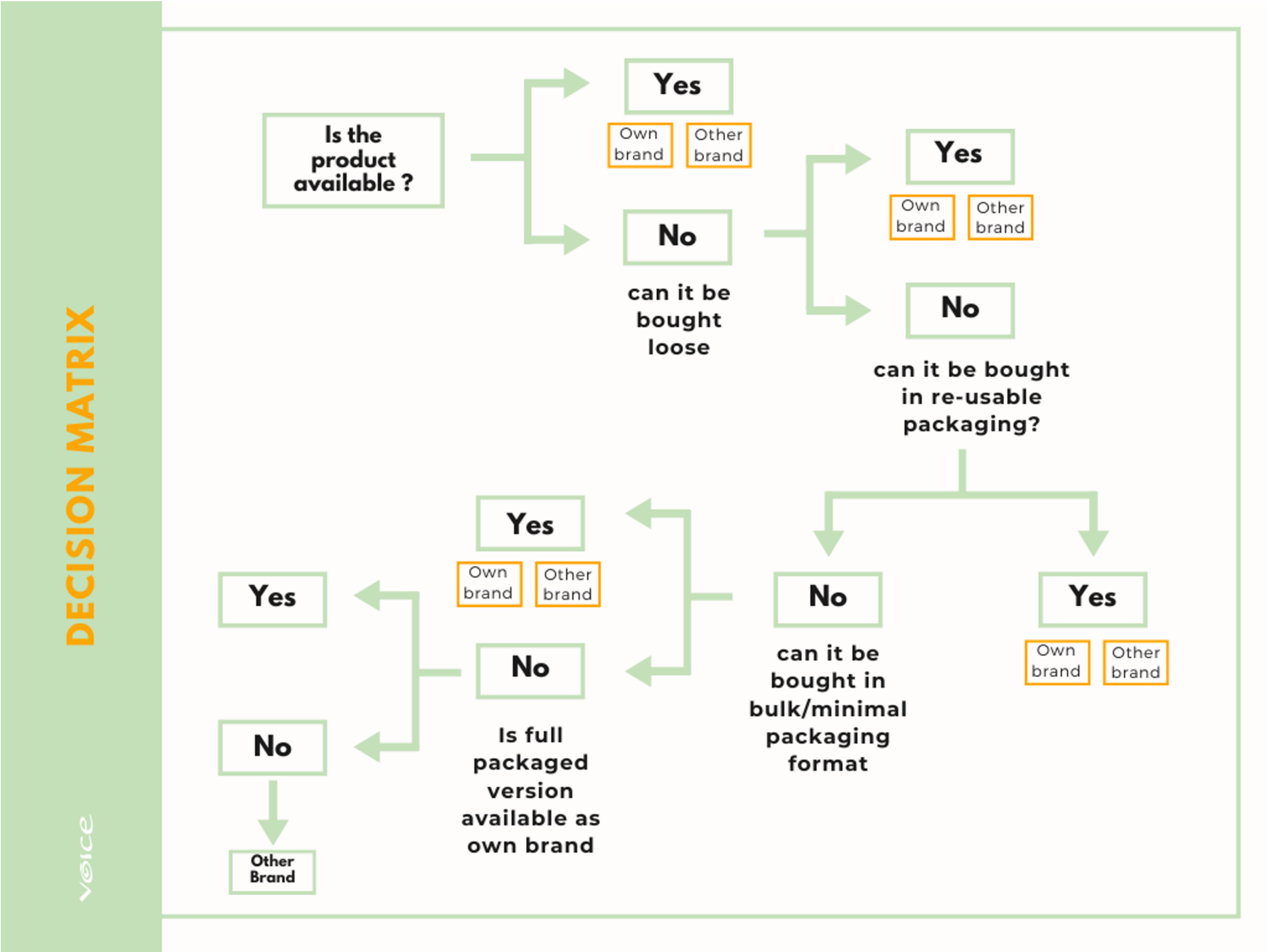
Annex 1: List of items purchased

- ✓ 1kg flour
- ✓ White bread: 500g
- ✓ Pasta: 500g
- ✓ 500g of beef
- ✓ A mix of onions/garlic
- ✓ Ham
- ✓ Pork sausages
- ✓ 1L of milk or milk substitute
- ✓ Irish cheddar
- ✓ Half a dozen eggs
- ✓ Butter
- ✓ Grapes
- ✓ Bananas
- ✓ Lettuce
- ✓ 4 tomatoes
- ✓ 1 brocoli
- ✓ 1 pepper
- ✓ Peas/beans
- ✓ Mushrooms
- ✓ 1-2 kg potatoes
- ✓ Jam
- ✓ Tea
- ✓ Coffee
- ✓ Sugar
- ✓ Cereals
- ✓ 1 hygiene product
- ✓ 1 Cleaning product
- ✓ Toilet paper
- ✓ Orange juice
- ✓ 1 snack

Annex 2: Decision matrix



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