PACKAGING BASELINE ASSESSMENT BASED ON HUMANITARIAN EMERGENCY RESPONSES IN 2021

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Photo: The World Food Programme (WFP)/Ahmed Basha

JOINT INITIATIVE FOR SUSTAINABLE HUMANITARIAN ASSISTANCE PACKAGING WASTE MANAGEMENT

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1.0 ABOUT THE JOINT INITIATIVE

The Joint Initiative for Sustainable Humanitarian Assistance Packaging Waste Management (JI) is a project funded by the United States Agency for International Development (USAID) Bureau for Humanitarian Assistance (BHA), bringing together a consortium of 23 humanitarian stakeholders — including donors, non-governmental organizations (NGOs), members of Red Cross/Red Crescent Movement and United Nations (UN) agencies — to reduce the negative environmental impact of humanitarian action, particularly by tackling the issue of packaging waste.

The initiative supports the humanitarian community by addressing the problem of packaging waste holistically, both upstream (e.g., guidance on how to reduce packaging) and downstream (e.g., guidance on secondary use or "repurposing" of packaging waste, using a circular economy approach).

The JI aims to promote greater coordination and standardization within the humanitarian community on packaging sustainability and supply chains. It acts as a platform for knowledge-sharing by documenting humanitarian organizations' experiences, successes, and lessons learned and sharing these through webinars and case studies. Finally, the JI aims to collect data to support evidence-based advocacy on the issue of packaging sustainability to raise awareness of the link between packaging and greenhouse gas emissions.

2.0 EXECUTIVE SUMMARY

Packaging has a significant role to play and must be of sufficient quality to secure relief items while in transit or while being stored in warehouses before they are delivered to people in need. However, humanitarian organizations must try to reduce the negative environmental impact of their delivering these items, through the appropriate waste management plans and the use of sustainable packaging materials. Some of the main take away lessons from the packaging baseline assessments:

- Corrugated cardboard is the most used packaging by weight, reuse and recycling is key.
- Metalized laminated sachets are the most used packaging in terms of number of individual packaging units, and collaborative solutions must be found to reduce plastic waste at source.
- The baseline assessment showed that 32% of the total weight of primary and secondary packaging is plastic.
- Optimizing the size of packaging products reduces the total weight of packaging waste and increases the efficiency of transportation.
- Humanitarian organizations should aim to reduce plastic at source to the extent possible due to emissions generated by plastics and the harmful impact of microplastics on human, animal, and environmental health.
- Sound packaging waste management strategy should be based on the type of packaging material and the availability of recycling facilities.

3.0 METHODOLOGY & SCOPE OF THE BASELINE

METHODOLOGY

The preliminary scoping report, which led to the creation of the JI, highlighted a "chronic underfunding of solid waste management, a lack of activity and impact data, and a lack of coordination on the topic both across the sector and within organizations." The JI – in collaboration with the UN World Food Programme (WFP) – therefore decided to carry out a packaging baseline assessment, to attempt to fill this gap in data.

To assess the feasibility (availability of the required data) of a packaging baseline assessment, the JI — in collaboration with WFP — requested its partners to complete a short survey in April 2022. The survey revealed that only a few organizations had packaging data available, and no standardized method existed for humanitarians to measure this. As such, the JI and WFP developed a packaging baseline assessment tool to provide humanitarian organizations with a simple way to monitor their packaging use regularly. This tool enables users to measure the most used packaging materials and their recipient countries. The tool was then shared with humanitarian organizations, some of whom (e.g., the United Nations Children's Fund (UNICEF) and the nternational Committee of the Red Cross (ICRC)) used it to collect the data that contributed to the baseline.

The baseline was developed using data from 13 humanitarian organizations,[1] corresponding to the packaging of 6.77 million metric tons of food and non-food items (NFIs) distributed by the 13 organizations in 2021.

The main challenge faced during the data collection process was the difficulty in obtaining the following information:

- The quantity and types of tertiary packaging that is used to facilitate the protection, handling, and transportation of items (such as pallets). Thus, this information was not included in the packaging baseline assessment.
- The types and volumes of packaging used for NFIs.
- The recipient countries (100,000 metric tons of food and NFIs lacked information on recipient countries).
- The difference in weight of one type of packaging material across different suppliers. Thus, the weight of packaging was assumed to be equal for all suppliers when information was not available.
- Difficulties in defining the type and weight of packaging in food baskets (rations). Only the following food baskets were selected in the baseline assessment:
    - Basket 1 distributed in Lebanon: beans, canned tuna, vegetable oil, and salt.
    - Basket 2 distributed in Syria: chickpeas, sugar, and salt.
    - Basket 3 distributed Libya: wheat flour, rice, beans, sugar, vegetable oil, pasta, and canned tomato paste.

[1] ICRC (direct procurement), United Nations High Commissioner for Refugees, UNICEF, USAID (food delivered through: Adventist Development Relief Agency, Food for the hungry Inc., Cultivating New Frontiers in Agriculture, Catholic Relief Services, Save the Children Federation Inc., Cooperative for Assistance and Relief, World Vision Inc, Mercy Corps, Relief Society of Tigray) and WFP (direct and in-kind donations).

SCOPE

The packaging assessment defined the primary packaging (the packaging in direct contact with the product itself to protect and preserve it) and secondary packaging (the exterior packaging of the primary packaging to protect and group units together) used to deliver food and NFIs. The following examples illustrate the different packaging materials used to deliver food and NFIs.

Polypropylene (PP) woven bags (primary packaging)

Tin cans (primary packaging)

Plastic (PET) bottles (primary packaging)

High-density polyethylene (HDPE) containers (primary packaging)

Metallized laminated sachets (primary packaging)

Plastic stretch wrap/plastic bales (LDPE) (secondary packaging)

Aluminum-based packaging (primary packaging used for water purification tablets)

Corrugated cardboard box (secondary packaging)

FOOD AND NFIS INCLUDED IN THE PACKAGING BASELINE ASSESSMENT:

FOOD ITEMS:

1. Beans
2. Biscuits
3. Buckwheat
4. Bulgur wheat
5. Canned beef
6. Canned chicken
7. Canned fish
8. Canned pulses
9. Canned tomato Paste
10. Canned tuna
11. Canned vegetables
12. Chickpeas
13. Dried fruits
14. Fortified wheat flour
15. Halawa
16. High-energy biscuits
17. Iodized salt
18. Lentils
19. Lipid-based nutrient supplements (LNS)
20. Maize
21. Maize meal
22. Micronutrient powder
23. Oats
24. Olive oil
25. Palm oil
26. Pasta
27. Pea-wheat blend
28. Peas
29. Plain dried skimmed milk
30. Processed tomato
31. Rice
32. Sorghum
33. Sorghum/millet
34. Split lentils
35. Split peas
36. Sugar
37. Super cereal
38. Tea
39. Milk
40. Vegetable oil
41. Wheat
42. Wheat flour
43. Wheat soy flour
44. Yeast

NFIS:

1. Blankets
2. Jerry can
3. Kitchen set
4. Mosquito nets
5. Sleeping mat
6. Tarpaulins
7. Wash and dignity kits
8. Water-purifying tablets

4.0 AIMS OF THE BASELINE AND ANALYSIS

The baseline aims to provide information on the use of packaging and highlight some of the challenges of packaging sustainability. Some of the potential benefits for the JI and its partners include:

- **Environmental sustainability.** By understanding the types and volumes of packaging, the baseline assessment can help identify improvement areas concerning packaging and inform sustainable packaging choices.
- **Map recipient countries of packaging.** Packaging baseline assessment helps understand where the packaging potentially ends as waste, which is essential to design country-based sound waste management plans based on existing infrastructure and the type of packaging waste material.
- **Compliance.** Packaging regulations vary by region, and humanitarian organizations need to comply with these regulations. Conducting a baseline assessment helps in identifying the types of packaging which may be contrary to local laws (for example, the use of single-use plastics as packaging in countries that have a plastic ban policy in place), enabling changes to be made within organizations.
- **Organizational reputation.** The baseline assessment helps to identify how much non-recyclable material is used in operations and areas for improvement in packaging-waste reduction. This is crucial, given that reducing and managing waste sustainably is important as part of humanitarians' duty to "do no harm." Furthermore, unmanaged packaging waste left behind after humanitarian operations reflects badly on the organization providing the assistance and can potentially cause damage to the reputation.

Based on the results of the packaging baseline assessment, the JI has already begun to address specific packaging concerns and challenges. For example, to improve downstream waste management, the Initiative — in collaboration with the Environmental Sustainability in Humanitarian Logistics (WREC[2] project) project — is mapping local recyclers in several countries where humanitarian operations are ongoing. A guidance note on how to design sound packaging waste management plans, which include options for repurposing or reusing packaging, is also being developed.

5.0 A SNAPSHOT OF HUMANITARIAN AID

The baseline analyzed approximately 6.77 million metric tons of food and NFIs procured by nine humanitarian organizations in 2021, including 6.73 million metric tons of food and 36,000 metric tons of NFIs.[3]

The analysis of data shows that rice, sorghum or millet, wheat flour, wheat, and vegetable oil were procured in substantially more significant quantities than other foods. Tarpaulins, blankets, kitchen sets, sleeping mats, and buckets were the most widely procured NFIs, as shown in Figures 1 and 2.

According to data, Yemen, Ethiopia, and the Syrian Arab Republic were the top recipients of food and NFIs, receiving 31%, 17%, and 12%, respectively, as shown in Figure 3.

[2] Environmental Sustainability in Humanitarian Logistics project
[3] Data of food items are substantially larger than NFIs, because WFP led this baseline assessment.

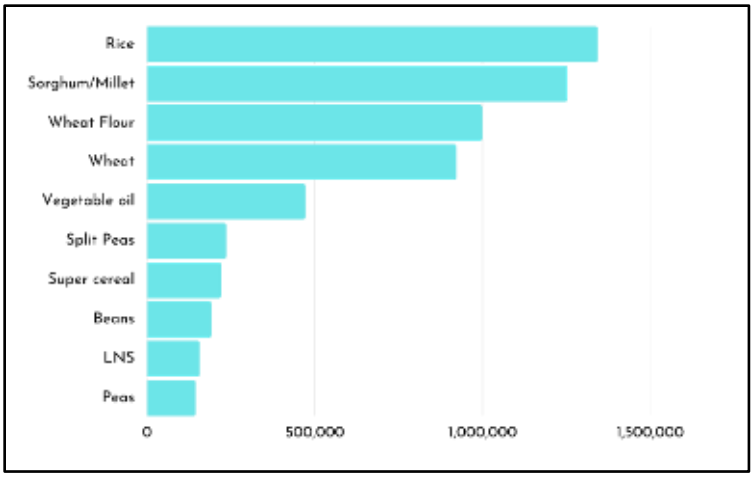

Figure 1: Top Ten Food Items procured in 2021 by Weight (Metric Ton)

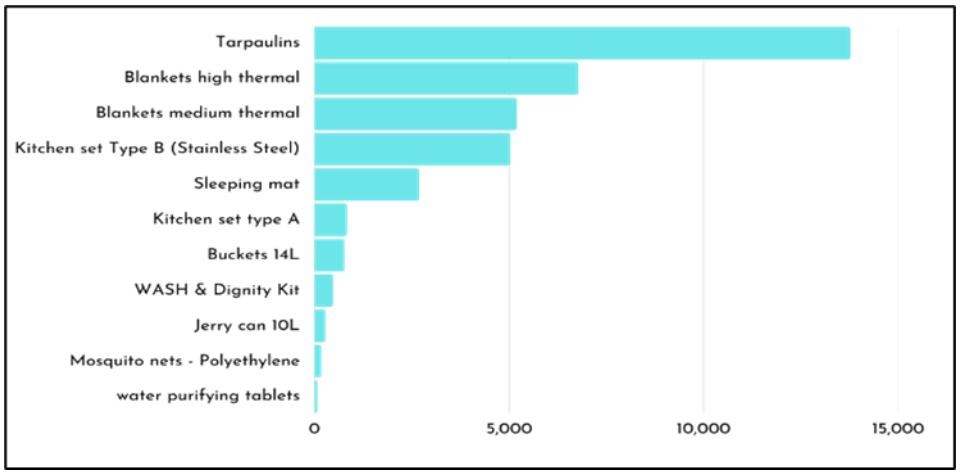

Figure 2: Weight of Non-Food Items procured in 2021 (Metric Ton)

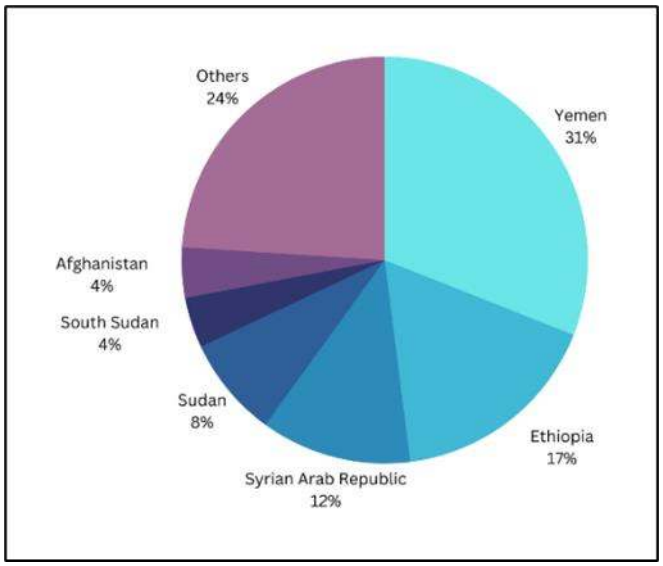

Figure 3: Distribution of Food and Non-food Items by Country

6.0 PACKAGING WEIGHT: FOOD AND NON-FOOD ITEMS

To package the 6.77 million tons of food and NFIs included in this baseline assessment, 33,000 metric tons of primary and 35,600 metric tons of secondary packaging were used.

For primary and secondary packaging, data shows that corrugated cardboard boxes were the most used material for packaging the food and NFIs included in the baseline assessment (*see Figure 7*). Corrugated cardboard boxes are responsible for 50% of the total packaging weight, with plastics packaging, tin cans, and sachets representing 32%, 10%, and 8%, respectively *(see Figure 4)*. Vegetable oil was responsible for 43% of all primary and secondary packaging (by weight), with super cereal, LNS and rice representing 14%, 13%, and 6%, respectively. The remaining 24% was spread among other items (*see Figure 5)*. Different types of plastic materials are used as primary and secondary packaging to deliver food and NFIs *(see Figure 6)*.

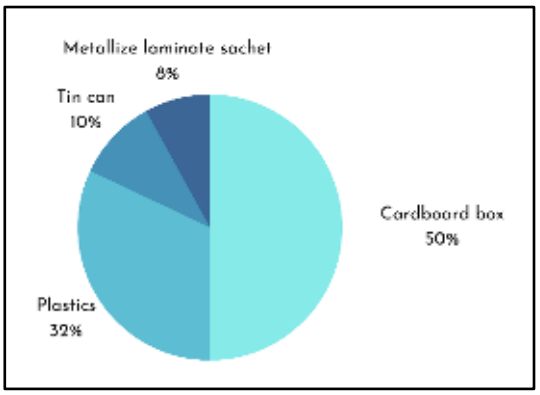

Figure 4: Percentage of Packaging Weight by Type

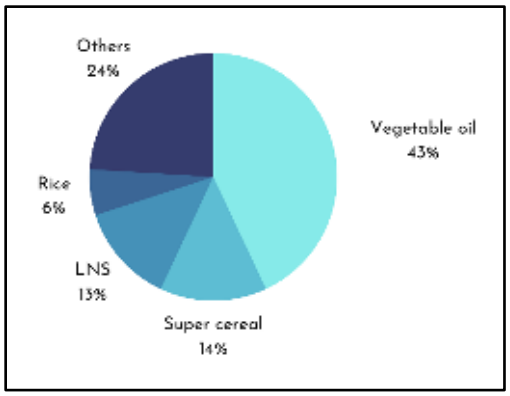

Figure 5: Percentage of Packaging Weight by Item

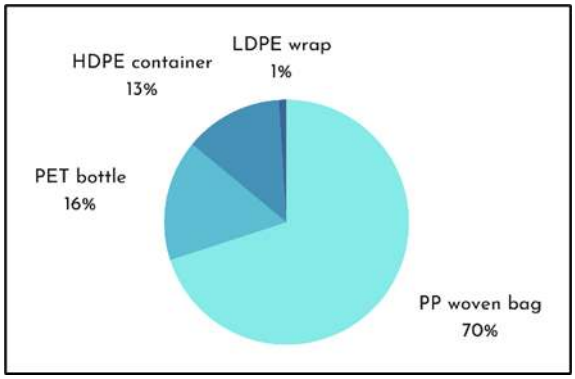

Figure 6: Percentage of the Plastic Packaging Weight by Type

6.1 PACKAGING WEIGHT PER METRIC TON OF PRODUCT

Comparing the packaging weight per metric ton of the packaged product is essential to understanding which products (food items and NFIs) use the most packaging per metric ton.

Aluminum-based packaging that are used to package water-purifying tablets, have the highest weight of packaging per metric ton of product ratio (1.6 metric ton of packaging / metric ton of water purification tablets).[4] That is much higher than mosquito nets packed in Polypropylene (PP) woven bags and canned food. To make the display of these numbers easier to read, Figure 7 shows the top ten packaging weight per metric ton of item excluding aluminum-based packaging.

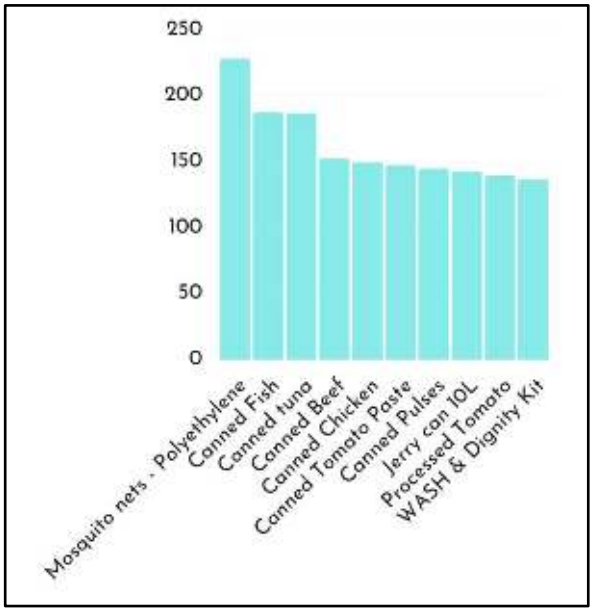

Figure 7: Top Ten Packaging Weights per Metric Ton of Item (kg/ Metric Ton) Excluding Water-Purification Tablets

6.2 NUMBER OF INDIVIDUAL PACKAGING UNITS

It's also important to think of packaging waste in terms of number of packaging units, especially for light materials such as sachets. Data analysis showed that approximately 3 billion packaging units were needed to deliver 6.77 million metric tons of food and NFIs.

For primary packaging units, LNS were responsible for 65% of the total packaging units, high-energy biscuits 13%, vegetable oil 4%, super cereal 4%, and 14% for other items, as shown in Figure 8. Vegetable oil accounted for 46% of secondary packaging units, followed by super cereal at 20%, LNS at 20%, high-energy biscuits at 7%, and other items at 7%, as shown in Figure 9.

Out of the total number of primary and secondary packaging units, metallized laminated sachets make up 85%, PP woven bags make up 6%, PET bottles 3%, aluminum strips 2% (used for water-purification tablets), cardboard boxes 2% and tin cans 1%, with the remaining 1% spread among polyethylene (PE) plastic packaging, high-density polyethylene (HDPE) containers, aseptic cartons, hybrid paper bags (paper + PE+ nylon layers), paper bags (with PE layer), and PP containers, respectively.

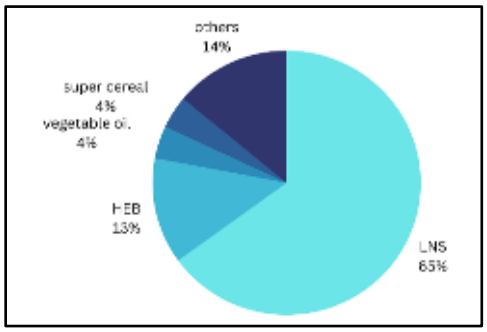

Figure 8: Percentage of Primary Packaging Units by Item

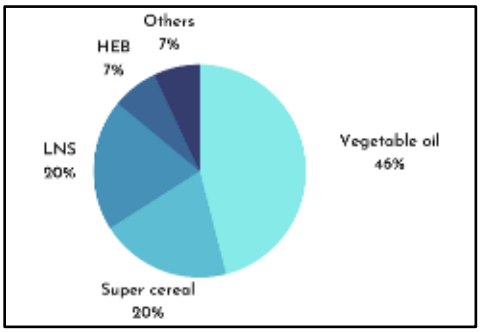

Figure 9: Percentage of Secondary Packaging Units by Item

[4] The weight of an aluminum-based packaging is higher than the tablet it contains

6.3 HIGHEST-RECIPIENT COUNTRIES OF FOOD AND NON-FOOD ITEM PACKAGING

Locating packaging waste is important to assess the opportunities and capacity for packaging waste management. The highest-recipient country of packaging (primary and secondary) associated with food and NFIs is Yemen, receiving 24% of the total packaging by weight, followed by the Syrian Arab Republic, Ethiopia, and Afghanistan, receiving 14%, 13%, and 6%, respectively. The remaining 43% were spread among 87 other countries, as shown in Figure 10.

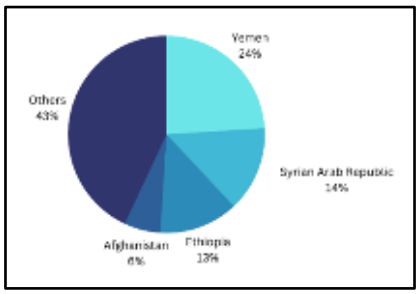

Figure 10: Percentage of Packaging Weight by Recipient Countries

7.0 FOCUS ON FOOD ITEMS

7.1 PRIMARY PACKAGING FOR FOOD ITEMS

For food items, vegetable oil was responsible for 36% of all primary packaging by weight, with rice, sorghum/millet, wheat flour, super cereal, wheat, and LNS representing 11%, 8%, 8%, 7%, 6%, and 6%, respectively. The remaining 18% was spread among all other items *(see Figure 11)*.

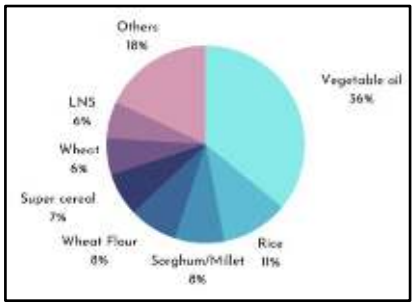

Figure 11: Percentage of Food Primary Packaging Weight by Commodity

Consideration of primary packaging by weight reveals that PP woven bags are the most used type. They are responsible for 46% of the total quantity of primary packaging used. Tin cans, sachets, PET bottles, and HDPE containers are responsible for 20%, 16%, 10%, and 8%, respectively *(see Figures 12 & 13)*.

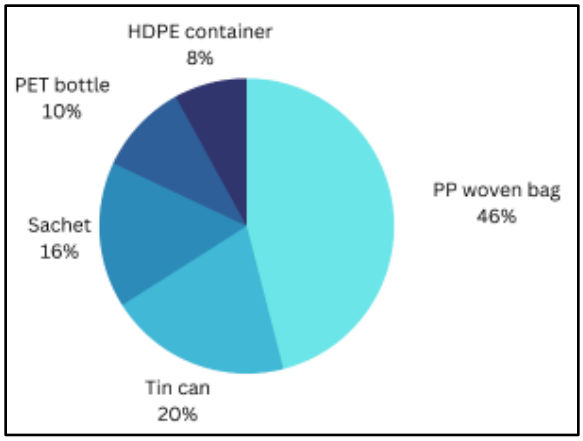

Figure 12: Percentage of Food Primary Packaging Weight by Type

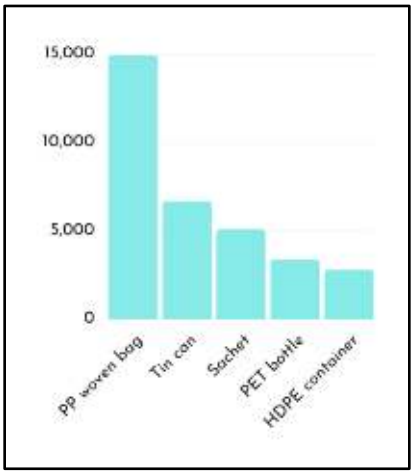

Figure 13: Weight of Food Primary Packaging by Type (metric ton)

In terms of the number of units of primary packaging, out of the total amount of approximately 3 billion primary packaging units, metallized laminated sachets are responsible for 89%, with PP woven bags making up 6%, PET bottles at 3%, and tin cans at 1.5%. While 67% of the total packaging units are for LNS, 13% are for high-energy biscuits, 4% for vegetable oil, and 16% are used to pack other commodities.

7.1.1 PLASTICS

Plastic is used as primary packaging to deliver food items, accounting for 64% of the total weight of primary packaging. This percentage is equivalent to 21,100 metric tons of plastics in the forms of PP woven bags (71%), PET bottles (16%), and HDPE containers (13%). Of the total plastic primary packaging, 29% was used for packaging vegetable oil, 17% for rice, 13% for sorghum/millet, 12% for wheat flour, 9% for wheat, and 20% for other commodities.

Different countries may have different requirements for how food should be packed. Figure 14 shows the different types of plastic packaging used to deliver food for the highest recipient countries of packaging. As shown in the figure, the most used plastic packaging is PP Woven bag and the highest recipient country of plastic packaging is Yemen.

Note: Metallized laminate sachets are excluded from this category as they are composed of different materials.

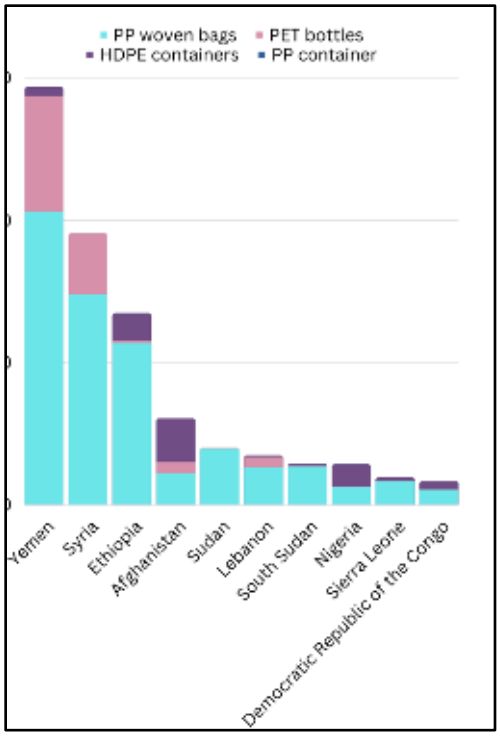

Figure 14: Top Ten Recipient Countries of Plastics Primary Packaging by Weight (Metric Ton) Used to Deliver Food

7.1.2 TIN CANS

Tin cans comprise 20% of the total weight of food primary packaging (approximately 6,700 metric tons), with 87% used for vegetable oil, 8% for fish, 2% for pulses, and 3% for other commodities. Recipient countries of tin cans by weight are illustrated in Figure 15.

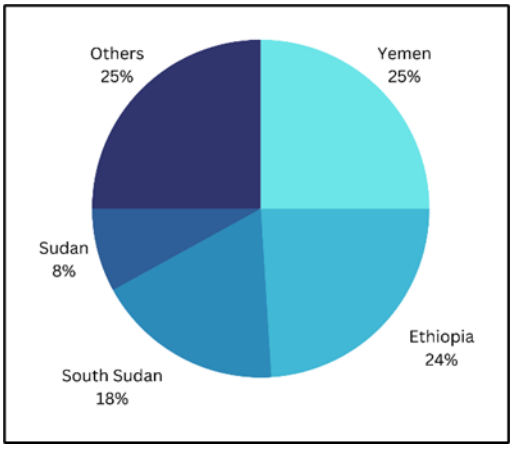

Figure 15: Recipient countries of tin can package by weight

7.1.3 METALLIZED LAMINATED SACHETS

Sachets make up 15% of primary packaging (approximately 5,000 metric tons). To enhance their barrier properties, 81% of these sachets are metallized (the others are made of mono PE plastics). Of the total metallized laminate sachets, 48% are used for super cereal, 45% for LNS, 6% for high-energy biscuits, and 1% for other commodities. Recipient countries of sachets by weight are illustrated in Figure 16. It is essential to highlight that metallized laminated sachets are complicated to separate for recycling, which makes them technically unrecyclable with today's available technologies.

7.2 SECONDARY PACKAGING USED FOR FOOD ITEMS

Cardboard boxes are used as secondary packaging for food items, making approximately 50% of the total weight of (primary and secondary) packaging used to deliver food items.

Of all the cardboard boxes, 48% are used for packaging vegetable oil, 21% for super cereal, 19% for LNS, 4% for high-energy biscuits, and 8% for other commodities. Recipient countries of cardboard boxes by weight are illustrated in Figure 17.

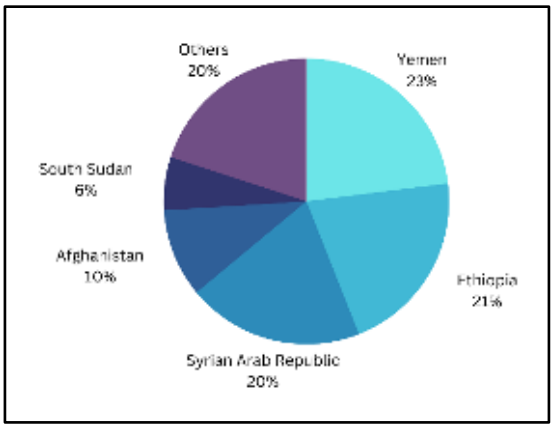

Figure 16: Recipient Countries of Sachets by Weight (Metric Ton)

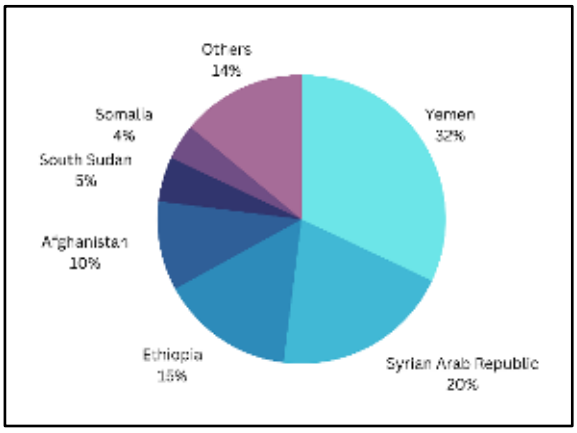

Figure 17: Recipient Countries of Cardboard Boxes by Weight (Metric Ton)

8.0 FOCUS ON NON-FOOD ITEMS

Approximately 1,500 metric tons of primary and secondary packaging were identified to package NFIs included in the baseline assessment (36 000 metric tons). Kitchen sets accounted for 34% of all packaging, with tarpaulins, blankets, water-purifying tablets,[5] and buckets taking 29%, 12%, 7%, and 6%, respectively. The remaining 12% was spread among all other items.

8.1 PLASTICS

An analysis of the primary and secondary packaging used to deliver NFIs included in the baseline shows that 46% are plastics (688 metric tons). PP woven bags and containers are responsible for 51% of the weight, with plastic stretch wrap (LDPE) and PE plastics making up 45% and 4%, respectively. Of the total 688 metric tons of plastics, 63% are used to package tarpaulins, 26% for blankets, 5% for mosquito tents, 4% for sleeping mats and 1.5% for kitchen sets, and 0.5% for water-purification tablets.

[5] Due to lack of data, secondary packaging of water-purification tablets was not included in the baseline assessment.

8.2 PRIMARY PACKAGING

For NFIs, 131 metric tons of primary packaging were identified. Water-purification tablets were responsible for 80% of the weight of all primary packaging, with mosquito nets and kitchen sets taking 11% and 7%, respectively. The remaining 2% is spread among all other items. Consideration of the weight of primary packaging by type reveals that aluminum-based packaging is the largest type of packaging. They are responsible for 79% of the total weight of primary packaging, followed by PE plastic bags and PP containers, responsible for 19% and 2%, respectively.

8.3 SECONDARY PACKAGING

Secondary packaging makes up for 90% of the total weight of packaging (primary and secondary) used to deliver NFIs (approximately 1,360 metric tons). The types of secondary packaging that are used to deliver NFIs are cardboard boxes (51%), PP woven bags (26%), and stretch wrap plastic packaging (23%). These materials are used for packaging different items, as shown in Figures 18, 19, and 20.[6]

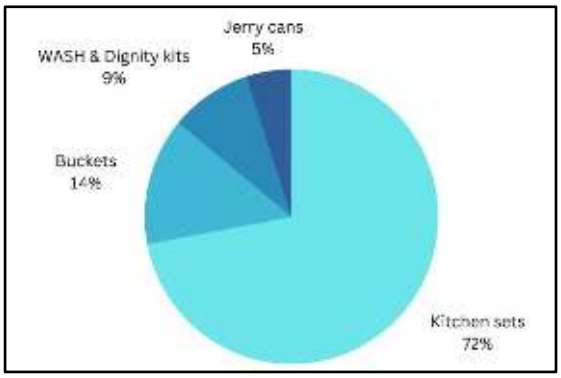

Figure 18: Percentage of Cardboard Boxes (Secondary Packaging) by Item

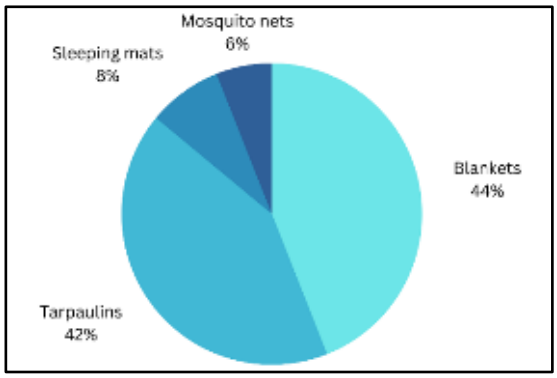

Figure 19: Percentage of PP Woven Bags (Secondary Packaging) by Item

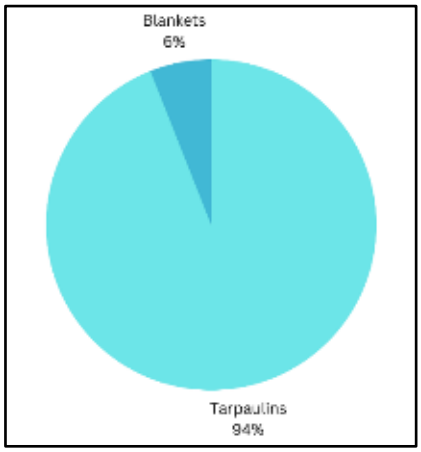

Figure 20: Percentage of Stretch Wrap Plastic Packaging (Secondary Packaging) by Item

[6] Different suppliers may use a different way to package the same item (for example, blankets and tarpaulins are packaged in PP woven bags or stretch wrap plastic packaging, i.e., plastic bales).

9.0 TOTAL WEIGHT OF PACKAGING AGAINST THE NUMBER OF PACKAGING UNITS

Comparing the weights of the different packaging types with the number of individual packaging units helps in developing practical waste-management strategies that consider, for example, collection modalities, transportation costs, and associated emissions and storage.

Data reveals that cardboard boxes are the heaviest type of packaging per unit (average of 650 gram/box), followed by hybrid paper bags with PE and nylon layers (320 gram/bag), paper bags with PE lining (225 gram/bag), HDPE containers (220 gram/container), and tin cans (156 gram/can)The weight of various packaging types is shown in Figure 21 together with the quantity of individual units of each type. The analysis shows that large quantities of packaging do not necessarily correspond with large weight. For example, 2.5 billion sachets were less than one-sixth the weight of 54 million cardboard boxes. This does not necessarily mean that the recycling of cardboard boxes should be de-prioritized. Decisions should factor in the availability of waste-management facilities and the recyclability of waste material.

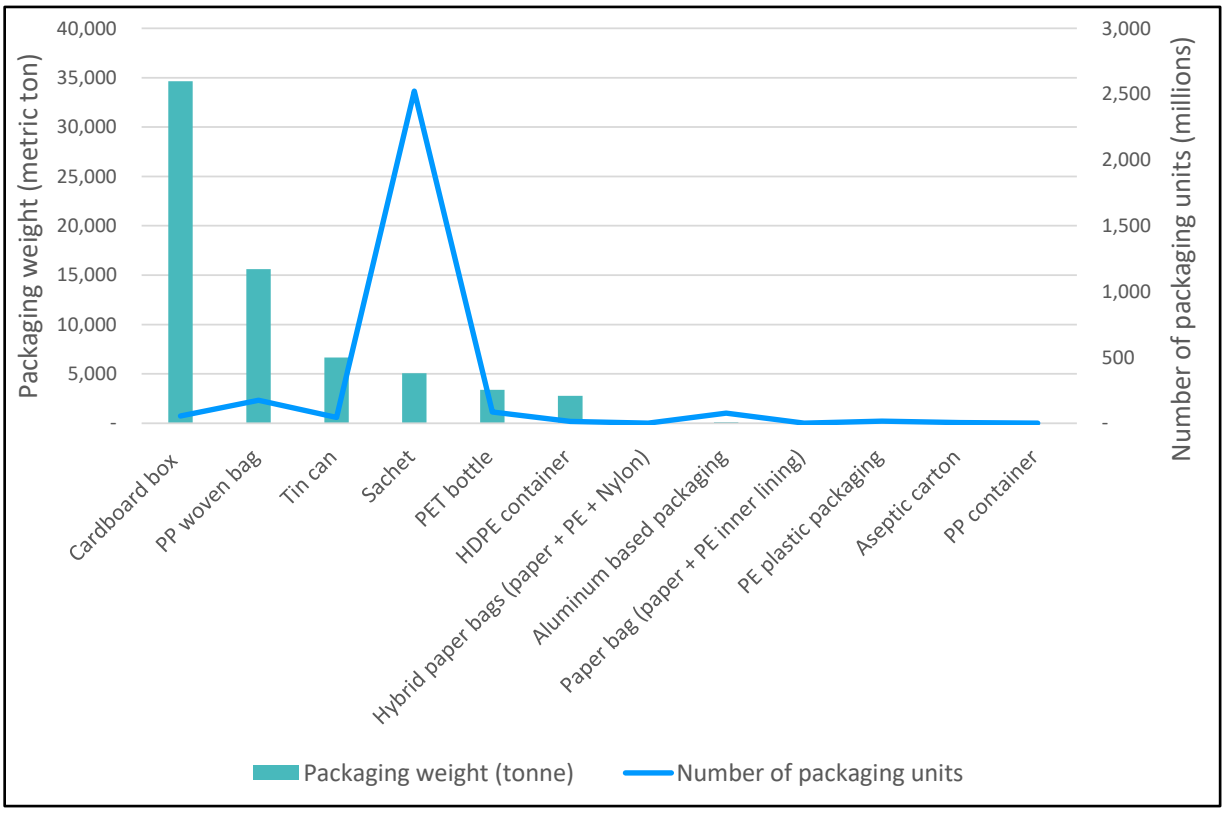

Figure 21: Packaging Weights Against the Number of Packaging Units

10.0 CONCLUSION

It is crucial to ensure that relief items are delivered safely to those in need, so packaging has an important role to play and must be of sufficient quality to protect items whilst in transit or whilst stored in warehouse conditions. However, consistent with the "do-no-harm" principle and in light of the global waste crisis and the impact of climate change, humanitarian organizations must take immediate action to reduce the negative environmental impact of their assistance, both in terms of waste and the use of non-recyclable or unsustainable packaging materials. This baseline assessment is one example of how the sector can identify ways to improve the sustainability of humanitarian packaging.

Based on the data collected by the participating organizations, the following points stand out:

ONLY A FEW HUMANITARIAN ORGANIZATIONS HAVE PACKAGING DATA AVAILABLE, AND NO STANDARDIZED METHOD IS AVAILABLE FOR HUMANITARIANS TO MEASURE THIS DATA.

As such, the JI and WFP developed a packaging baseline assessment tool to provide humanitarian organizations with a simple way to monitor their packaging use regularly. Some organizations used this tool to collect data which fed into the JI/WFP packaging baseline.

Based on the data collected, packaging represents on average 1% of the total weight of an item.[7]

CORRUGATED CARDBOARD IS THE MOST USED PACKAGING BY WEIGHT: RECYCLING IS KEY.

One of the most common and effective ways to deal with cardboard box waste is to recycle it. Cardboard boxes can be broken down, flattened, and recycled into new cardboard boxes or other paper products. Another option is to reuse cardboard boxes instead of throwing them away. They can be used for storage, moving, or shipping.

Additionally, when cardboard boxes are made from recycled materials, it reduces the amount of waste going to landfills or incinerators, conserving natural resources. Furthermore, using recycled cardboard boxes can help promote a circular economy, where materials are reused, and waste is minimized.

METALLIZED LAMINATED SACHETS ARE THE MOST USED PACKAGING IN TERMS OF NUMBER OF INDIVIDUAL PACKAGING UNITS: COLLABORATIVE SOLUTIONS MUST BE FOUND.

Sachets are currently neither recyclable nor reusable. Optimizing the size of the packaging, exploring more sustainable (e.g., paper-based) packaging materials, or ways to repurpose sachets, are some of the solutions being considered by the JI-led Working Group.

PLASTIC PACKAGING CONTINUES TO BE PREVALENT: REDUCING PLASTIC WASTE AT SOURCE IS KEY.

The baseline assessment showed that 32% of the total weight of primary and secondary packaging is plastic (PP woven bags, PET bottles, and HDPE containers made up 99 % of the plastic packaging used to deliver food and NFIs). While these are recyclable materials, opportunities for recycling or repurposing this type

[7] 6.77 million metric tons of food and NFIs used 68 600 tons of packaging.

of waste are scarce in humanitarian settings, humanitarian organizations should aim to reduce plastic at source to the extent possible due to emissions generated by plastics throughout their lifecycle[8] and the harmful impact of microplastics on human, animal and environmental health while ensuring it does not lead to increased damage of items it contain (e.g., food loss, damaged NFIs, etc.). A key first step would be to eliminate the use of single use plastic (SUP).

CHANGING THE VOLUME OF PACKAGING OF SINGLE UNITS CAN HAVE A SIGNIFICANT IMPACT ON OVERALL PACKAGING VOLUMES.

Optimizing packaging can lead to a reduction in the total amount of packaging required to package a product.

Figure 22 shows how the weight of total packaging needed for a certain amount of product varies depending on the volume and quantity of the packaging materials. For instance, packaging one ton of vegetable oil in cardboard boxes that each hold 12 of two-liter bottles results in a lower overall weight of packaging when compared to one-liter bottles. This is because more boxes are needed for the latter.

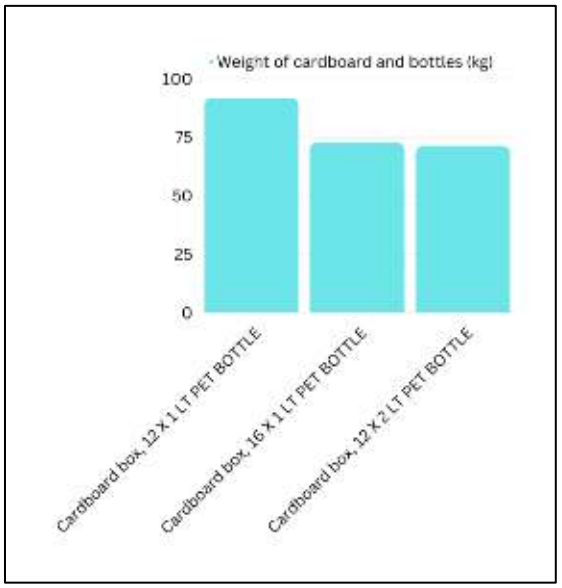

Figure 22: Weight of A Cardboard Box and PET Bottles Packaging (Kg) Needed to Package One Metric Ton of Vegetable Oil

YEMEN, SYRIA, AND ETHIOPIA RECEIVE THE HIGHEST AMOUNT OF PRIMARY AND SECONDARY PACKAGING.

The countries that receive high levels of packaging that potentially ends up as waste may require more resources, such as funding and technology, to manage their waste. By identifying the countries with the highest amount of packaging waste, policymakers, NGOs, and other stakeholders can target their efforts in these areas. This can help to address the waste problem more effectively and efficiently.

11.0 RECOMMENDATIONS

There is no "silver bullet" solution for sustainable packaging, but rather a variety of strategies that can be used. Based on the findings of the packaging baseline assessment, the following recommendations stand out.

- Eliminate single-use plastics when possible.[9]
- Explore alternatives to plastic packaging where feasible.[10]
- Choose packaging materials that are reusable, recyclable, or made from recycled content.
- Optimize the size of packaging to reduce the air contents as much as possible, thereby lowering the

[8] See info sheet "Packaging, Plastics and Climate Change" produced by the JI for more information: https://tinyurl.com/JI-CC-FactSheet
[9] See ShelterBox's success in eliminating single use plastic.
[10] See the Joint Initiative guidance on alternative to plastic packaging.

amount of packaging material needed for secure delivery of the product.[11]

- Maximize the amount of product transported per pallet, container, or truck.
- Identify upstream and downstream solutions and alternative materials to reduce the environmental impact of metallized laminated sachets.[12]
- Check with the local recycling program to see which types of plastic are accepted in your area, and make sure to properly clean and sort your recyclables.
- Build a database of recycling facilities and share it with other humanitarian organizations.[13]
- Using the JI packaging measurement tool, record the volumes of packaging used for food and NFIs.
- Given the increased use of cardboard, use brown cardboard where possible rather than bleached white cardboard.

JOINT INITIATIVE
FOR SUSTAINABLE HUMANITARIAN ASSISTANCE PACKAGING WASTE MANAGEMENT

LEARN MORE AND GET INVOLVED

- Visit our webpage: https://tinyurl.com/Joint-Initiative
- Subscribe to our newsletter: https://tinyurl.com/JInews-subscribe
- Follow us on LinkedIn: https://tinyurl.com/Joint-Initiative-LinkedIn
- Contact the project team: Joint.Initiative@icf.com

[11] See the Joint Initiative work on packaging sustainability criteria.
[12] Contact the Joint Initiative team for information on the Working Group on Metallized Laminated sachets Joint.Initiative@icf.com.
[13] See the Joint Initiative / WREC Waste management facilities mapping.