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## Report on global losses for the period from 1 January to 31 December 2021

### Executive summary

In 2021, WFP handled 5.8 million mt of food. Despite challenges posed by emergencies, WFP provided high-quality food assistance to 115.5 million people globally while minimizing losses.

This was enabled by an efficient, agile, end-to-end supply chain, robust risk mitigation systems and strong management processes. However, events beyond WFP's control resulted in relatively high levels of global food losses.

Pre-delivery losses of 16,834 mt, at a value of USD 10.1 million, were the fourth highest in terms of volume and second highest in terms of value since 2011. Inadequate transport accounted for 54 percent of the losses, valued at USD 5.5 million.

Post-delivery losses amounted to 23,527 mt, with a total value of USD 14.8 million, the fourth highest loss in terms of volume and sixth highest in terms of value since 2011. Ninety-one percent or 21,488 mt of post-delivery losses were attributable to reconstitution, rebagging or repacking, pilferage or theft, inadequate transport, loss during civil strife and improper or overlong storage.

Ten country operations accounted for 21,851 mt or 93 percent of post-delivery losses in 2021, of which 70 percent or 15,366 mt were attributable to the Sudan, Yemen and Ethiopia.

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## Introduction

1. This report provides an overview of global losses – pre-delivery and post-delivery – in 2021 and describes recent measures for preventing or minimizing such losses. The annexes detail country-specific losses and identify countries where losses were above WFP's reporting thresholds.<sup>1</sup>
2. Pre-delivery losses are those that occur before legal title to food passes to a government, usually at the first delivery point in the recipient country.
3. Post-delivery losses are those that occur after food arrives in a recipient country and before it is distributed to people in need.
4. Within the legal framework in which WFP operates, legal title of food commodities normally passes to the government of a country where they are to be distributed at the commodities' point of first entry into the country. WFP, however, generally retains physical possession of the commodities far beyond the time at which legal title is transferred.
5. This report does not cover unintended uses of food after distribution to beneficiaries. Unintended uses such as sharing, theft or sale are captured through monitoring and addressed accordingly.
6. Following approval by the Executive Board, the WFP self-insurance scheme was extended to cover post-delivery losses. All WFP losses are therefore covered by insurance from the moment when WFP takes possession of commodities up to their physical handover to a cooperating partner, the people WFP serves or a recipient government.<sup>2</sup>

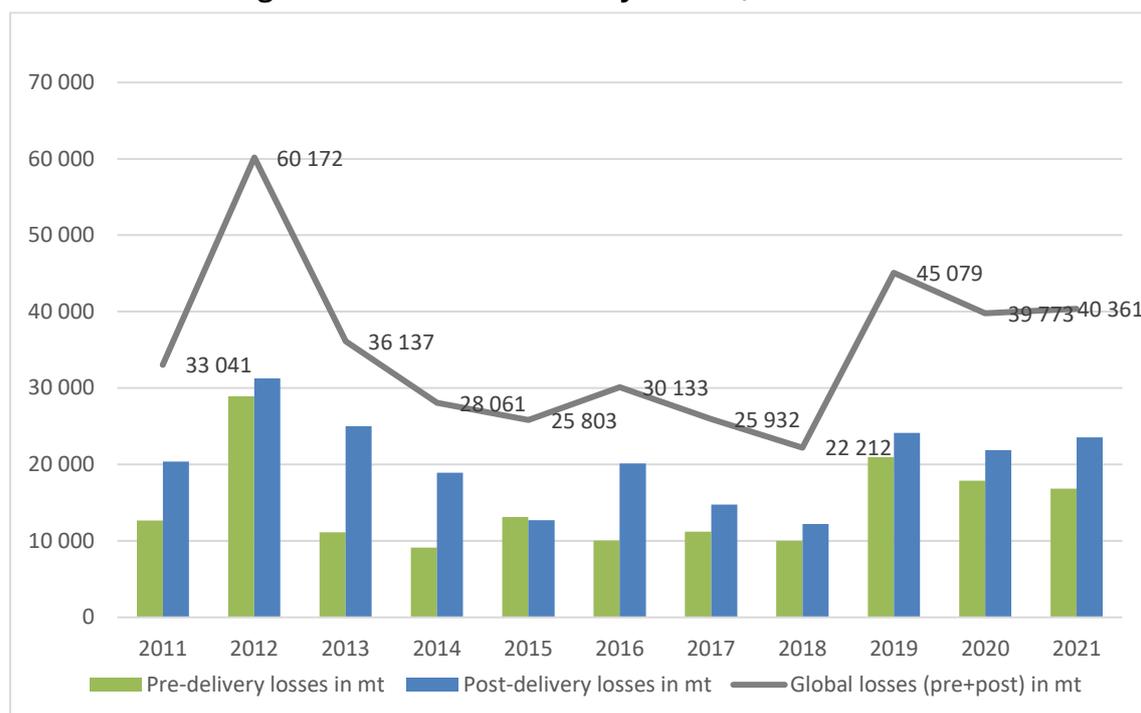
## Characteristics of global losses in 2021

7. Global losses in 2021 are presented in this report in terms of volume (tonnage) and value (United States dollars) and are compared with losses in previous years.
8. Significant losses beyond the control of WFP meant that the volume of global losses in 2021 amounted to 40,361 mt, a slight increase from 2020 and the third highest level since 2011 (see figure 1 and annex I).

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<sup>1</sup> These are countries where losses of a single food type amount to at least 2 percent of the tonnage handled and have an absolute value of at least USD 20,000 and countries where losses of a single food type have an absolute value of more than USD 100,000.

<sup>2</sup> "WFP Management Plan (2018–2020)" (WFP/EB.2/2017/5-A/1/Rev.1).

**Figure 1: Global food losses by volume, 2011–2021**

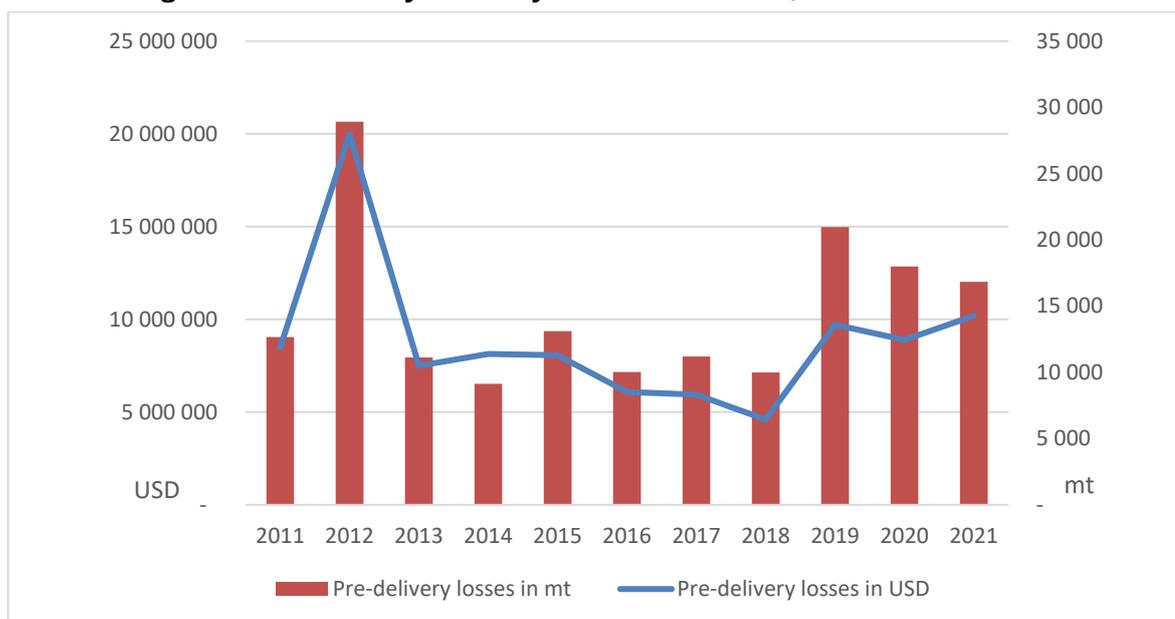
9. The value of global losses was USD 24.9 million, slightly higher than in 2020, when it was USD 22.4 million.
10. Losses of wheat, sorghum, rice, split peas and corn soya blend amounted to 29,372 mt valued at USD 14.6 million, accounting for 73 percent of global losses by volume and 59 percent by value (see details in table 1).

**TABLE 1: THE FIVE COMMODITIES FOR WHICH LOSSES WERE HIGHEST, 2021**

Commodity	Losses (mt)	Value in USD	USD per mt	Losses as a percentage of total losses by volume
Wheat	10 099	3 328 137	330	25
Sorghum/millet	8 412	3 303 569	393	21
Rice	4 955	3 346 132	675	12
Split peas	3 443	1 969 369	572	9
Corn soya blend	2 463	2 667 307	1083	6

### Characteristics of pre-delivery losses in 2021

11. Pre-delivery losses in 2021 are presented in terms of volume (tonnage) and value (United States dollars) and are compared with losses in previous years in terms of volume, value and causes.
12. In 2021, pre-delivery losses amounted to 16,834 mt, the fourth highest level by volume since 2011 (figure 2).
13. Pre-delivery losses were valued at USD 10.2 million, the second highest level by value since 2011 (figure 2).

**Figure 2: Pre-delivery losses by volume and value, 2011–2021**

14. Losses of wheat amounting to 4,406 mt at an average value of USD 321/mt accounted for 26 percent of all pre-delivery losses.
15. Losses of 2,833 mt of rice at an average value of USD 716/mt accounted for 17 percent of pre-delivery losses.
16. Losses of sorghum amounting to 2,516 mt at an average value of USD 437/mt accounted for 15 percent of pre-delivery losses.

#### Main reasons for pre-delivery losses

17. In 2021, 61 percent of pre-delivery losses, or 10,289 mt worth USD 5.5 million, were mainly attributable to inadequate transport.
18. Rebagging or repacking resulted in pre-delivery losses of 4,616 mt worth USD 2.9 million. This accounted for 27 percent of all pre-delivery losses.

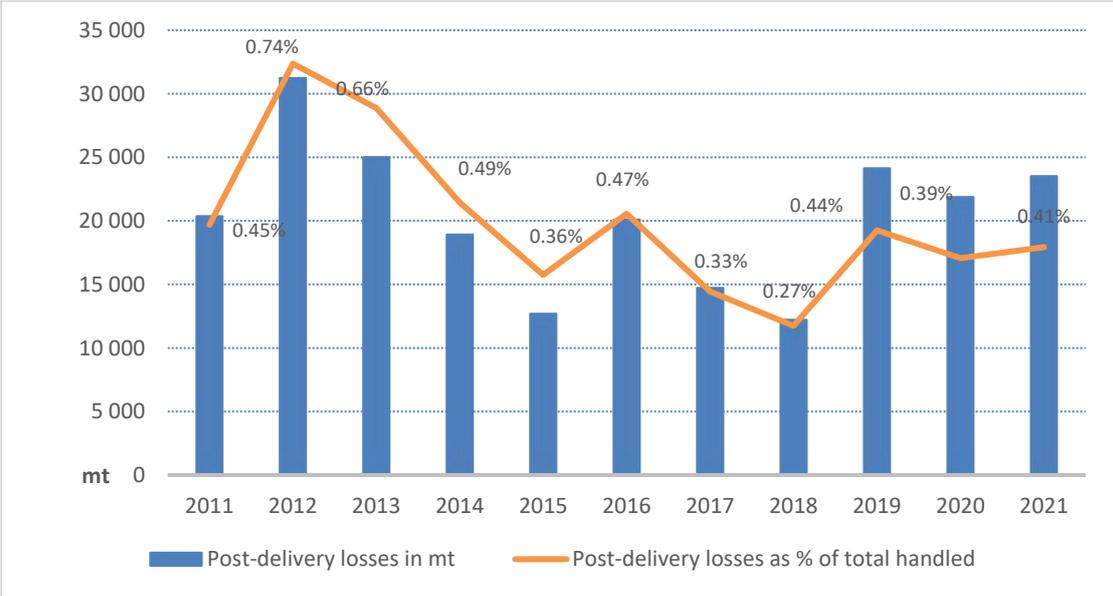
#### Characteristics of post-delivery losses in 2021

19. Post-delivery losses in 2021 are presented in terms of volume and value and are compared with losses in previous years in terms of volume, value and causes.
20. The volume of post-delivery losses in 2021 was the fourth highest since 2011 in absolute terms but sixth lowest as a percentage of food handled.<sup>3</sup> Post-delivery losses were 23,527 mt, or 0.41 percent of the 5.8 million mt of food handled; the corresponding figures for 2020 were 21,875 mt and 0.39 percent (see figure 3 and annex X).
21. In 2021, post-delivery losses had a total value of USD 14.8 million, the sixth highest since 2011 in absolute terms. At 0.44 percent of the USD 3.37 billion of food handled, it was the fourth lowest in percentage terms. The corresponding figures for 2020 were USD 13.5 million and 0.48 percent (see figure 3 and annex X).<sup>4</sup>

<sup>3</sup> Tonnage of food handled is defined as “opening stocks in the recipient country plus commodities received in the recipient country”.

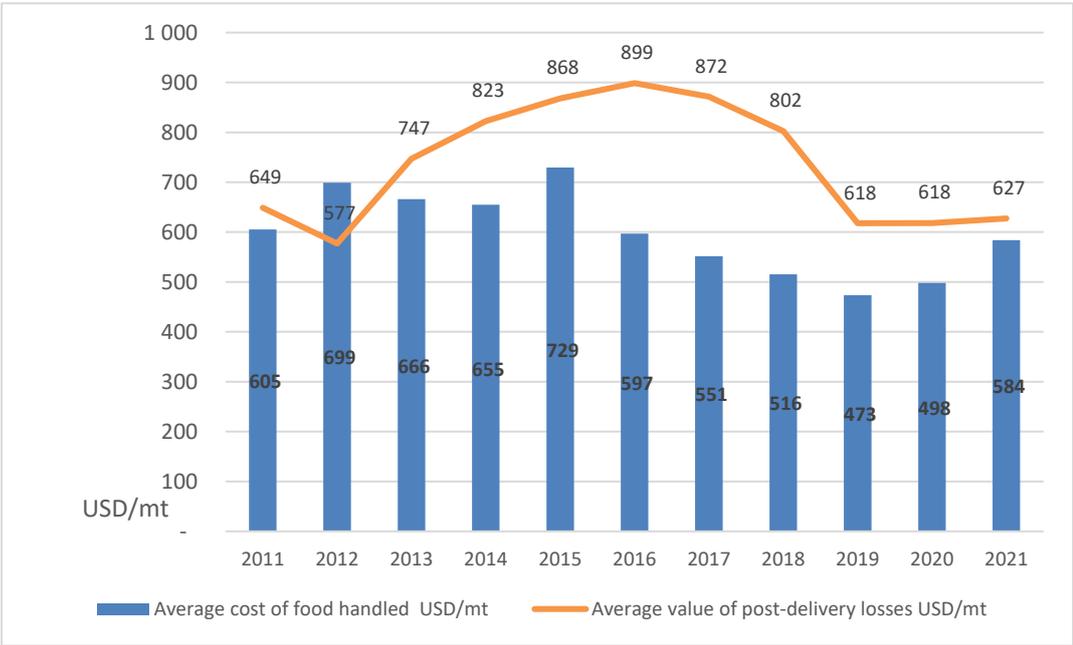
<sup>4</sup> Food items are valued according to “moving average prices”, whereby the cost of each item is determined from the weighted average of the costs of similar items at the beginning of and during the period. The losses in this report are valued at the moving average prices as at the end of 2021.

**Figure 3: Post-delivery losses by volume, 2011–2021**



22. The average value of food handled in 2021 was USD 584/mt, compared with USD 498/mt in 2020. The average value of post-delivery losses was USD 627/mt, compared with USD 618/mt in 2020 (see figure 4).

**Figure 4: Average cost of food handled and average value of post-delivery losses, 2011–2021**



23. Sudan, with losses of 6,478 mt at an average value of USD 520/mt, accounted for 27 percent of all post-delivery losses. Yemen, with losses of 5,726 mt at an average value of USD 402/mt, accounted for 24 percent, while Ethiopia, with losses of 3,161 mt at an average value of USD 1,050/mt, accounted for 13 percent.

24. Losses of 5,895 mt of sorghum at an average value of USD 374/mt accounted for 25 percent of all post-delivery losses. Of these losses, 79 percent occurred in the Sudan, with 4,633 mt at an average value of USD 340/mt.

25. Losses of 5,693 mt of wheat at an average value of USD 336/mt accounted for 24 percent of all post-delivery losses. Of these losses, 90 percent occurred in Yemen, with 5,098 mt at an average value of USD 325/mt.
26. Losses of corn soya blend amounting to 2,034 mt at an average value of USD 1,126/mt constituted 9 percent of all post-delivery losses. Of these losses, 55 percent, or 1,115 mt at an average value of USD 1,299/mt, occurred in Ethiopia. Cameroon accounted for 15 percent of these losses, with 315 mt at an average value of USD 627/mt.

### Main reasons for post-delivery losses

27. In 2021, 91 percent or 21,488 mt of post-delivery losses were attributable to reconstitution, rebagging or repacking, pilferage or theft, inadequate transport, loss during civil strife, and improper or overlong storage (see figure 5). Specific details by country are provided in annex I.

**Figure 5: The five main reasons for post-delivery losses, 2021**

Reconstitution/ rebagging/ repacking	Pilferage/theft	Inadequate transport	Loss during civil strife	Improper/overlong storage
<ul style="list-style-type: none"> <li>• 7,788 mt</li> <li>• 0.13% of total food handled</li> <li>• 33% of total post-delivery losses</li> </ul>	<ul style="list-style-type: none"> <li>• 6,833 mt</li> <li>• 0.12% of total food handled</li> <li>• 29% of total post-delivery losses</li> </ul>	<ul style="list-style-type: none"> <li>• 3,068 mt</li> <li>• 0.05% of total food handled</li> <li>• 13% of total post-delivery losses</li> </ul>	<ul style="list-style-type: none"> <li>• 2,756 mt</li> <li>• 0.05% of total food handled</li> <li>• 12% of total post-delivery losses</li> </ul>	<ul style="list-style-type: none"> <li>• 1,043 mt</li> <li>• 0.02% of total food handled</li> <li>• 4% of total post-delivery losses</li> </ul>

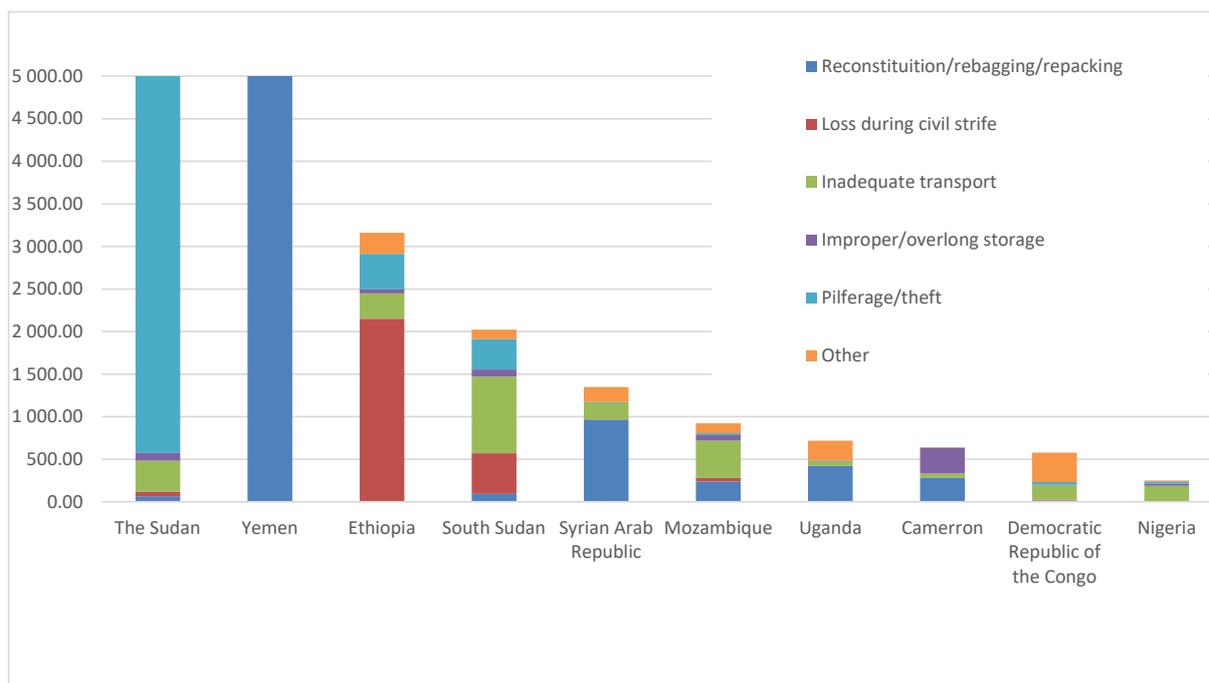
28. Problems related to reconstitution or repacking resulted in post-delivery losses of 7,788 mt, or 0.13 percent of food handled and 33 percent of all post-delivery losses. Of these losses, 5,174 mt or 66 percent occurred in Yemen.
29. Pilferage accounted for 6,833 mt of losses, or 0.12 percent of food handled and 29 percent of all post-delivery losses. The Sudan accounted for 5,831 mt or 85 percent of these losses.
30. Inadequate transport resulted in post-delivery losses of 3,068 mt, or 0.05 percent of food handled and 13 percent of all post-delivery losses. Of these losses, 53 percent or 1,631 mt occurred in South Sudan, Mozambique and Ethiopia.<sup>5</sup>
31. Loss during civil strife accounted for 2,756 mt of losses, or 0.05 percent of food handled and 12 percent of all post-delivery losses. Of these losses, 2,140 mt or 78 percent occurred in Ethiopia.
32. Improper or overlong storage resulted in post-delivery losses of 1,043 mt, or 0.02 percent of food handled and 4 percent of all post-delivery losses. Cameroon, Yemen and Armenia together accounted for 52 percent of these losses, or 540 mt.

### Post-delivery losses by country

33. Ten country operations accounted for 21,851 mt or 93 percent of post-delivery losses in 2021 (see figure 6). Of these, operations in the Sudan, Yemen and Ethiopia accounted for 70 percent, at 15,366 mt.

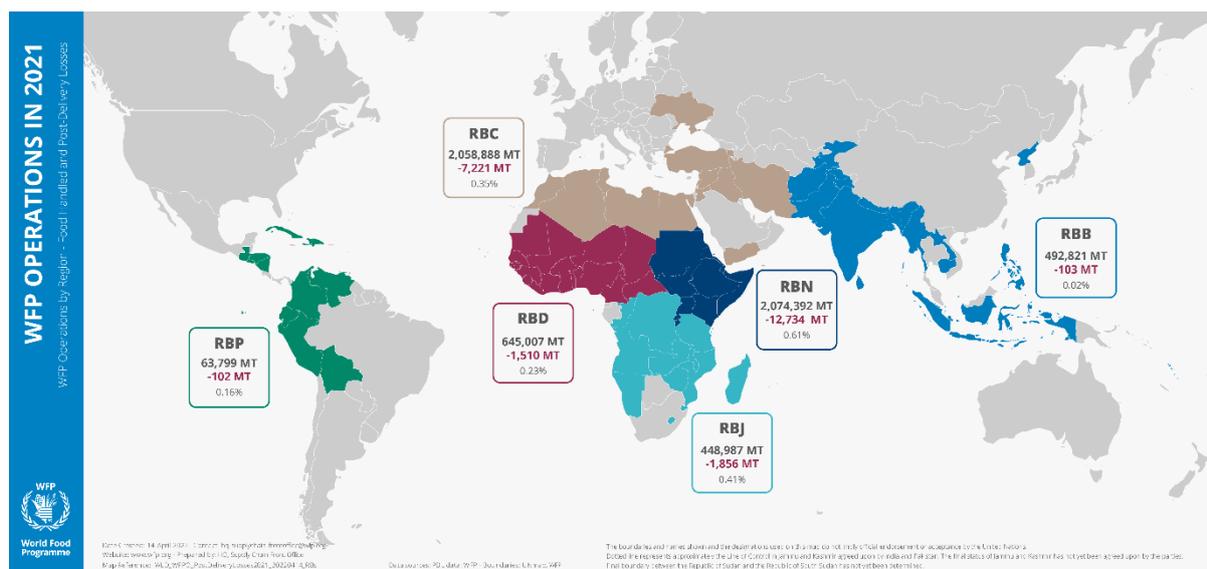
<sup>5</sup> Contractual provisions for recovering post-delivery losses from service providers and the selection and review of service providers are crucial for minimizing food losses. Poorly performing service providers receive warnings or are removed from the list of suppliers. Performance indicators for transporters include amounts lost in transit.

**Figure 6: The 10 countries with the highest post-delivery losses in 2021, by cause of loss (mt)**



34. WFP’s 10 largest operations in terms of volume of food handled in 2021 were, in descending order, Yemen, Ethiopia, the Syrian Arab Republic, the Sudan, Afghanistan, South Sudan, Nigeria, the Democratic Republic of the Congo, Zimbabwe and Uganda. These operations handled 4.6 million mt of food. See figure 7 for an overview of operations and losses by WFP region.

**Figure 7: WFP operations by region – food handled (mt) and post-delivery losses (mt and percentage of total food handled in the region)**



**Abbreviations:** RBB = Regional Bureau for Asia and the Pacific; RBC = Regional Bureau for the Middle East, Northern Africa and Eastern Europe; RBD = Regional Bureau for Western Africa; RBJ = Regional Bureau for Southern Africa; RBN = Regional Bureau for Eastern Africa; RBP = Regional Bureau for Latin America and the Caribbean.

35. In 2021, WFP operations in 14 countries had above-threshold post-delivery losses, which totalled 19,613 mt (see annex I). Of these countries, three were in WFP's Middle East, Northern Africa and Eastern Europe region, accounting for 33 percent of all above-threshold post-delivery losses; four were in Eastern Africa, accounting for 58 percent; four were in Southern Africa, accounting for 6 percent; and three were in Western Africa, accounting for 3 percent.<sup>6</sup>

## **Measures for preventing and mitigating losses**

### **Food procurement and safety and quality for WFP operations**

36. WFP is committed to reducing food losses through its supply chain operations. Robust processes for procuring food and ensuring its safety and quality, complemented by monitoring at all levels, are key to this.
37. In 2021, the Food Safety and Quality Unit assessed and mitigated risks through a variety of activities. It performed 140 supplier assessments, which facilitate preventive action to ensure that procured food is safe and of sufficient quality. A total of 290 staff were trained in food safety and quality policies and procedures. The unit managed and closed 104 food-related incidents and tested the compliance of 127 food suppliers worldwide. In addition, 55 food specifications were approved, strengthening the framework that ensures that food procured for operations is of sufficiently high quality.
38. A longstanding formula and packaging project was concluded in 2021, improving the stability of high energy biscuits and extending their shelf-life from 12 months to 18 months, allowing for more flexibility within the supply chain and the minimization of losses.
39. The Food Procurement Unit and the Food Safety and Quality Unit also worked together to eliminate leakages in all lipid-based nutrient supplement sachets by requesting suppliers to introduce leakage testing and ensuring that inspection companies implement the leaking detection testing protocols correctly. Compliance with this enhanced requirement is verified during supplier assessments and visits. As zero leakage in the sachets cannot be guaranteed, the Food Safety and Quality Unit has recommended random leak testing for all suppliers.
40. For some corn soya blend suppliers, more demanding inspection protocols that include strict monitoring of production by the inspection company to reduce food safety and quality incidents have been introduced. As part of its food safety protocols, WFP insists on laboratory testing to ensure that no micro toxins are present in raw materials used to produce food intended for beneficiaries.
41. To ensure that new suppliers of corn soya blend meet WFP specifications and quality and safety standards, the Food Procurement Unit and the Food Safety and Quality Unit hold pre-contract implementation meetings with each new supplier to explain all aspects of contract execution and quality requirements. The production of new suppliers is monitored closely on a daily basis to minimize the risk of production being rejected for non-compliance.
42. Efforts to improve shipping processes in 2021 included requests for suppliers to replace steel slings with ropes to avoid bag damage during offloading and food spillage. For sorghum purchases, the Food Procurement Unit implemented innovative solutions such as shipping sorghum in bulk in containers, as well as standard bulk cargo shipment practices. For vegetable oil, milk, micronutrient powder and sugar, the Food Procurement Unit mostly used containerized shipments on pallets; this is the most effective method because it avoids

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<sup>6</sup> These are post-delivery losses that exceed WFP's thresholds for country-level post-delivery losses of single food types: valued at USD 20,000 or more and accounting for at least 2 percent of the tonnage handled; or valued at USD 100,000 or more.

transshipment, i.e. goods being offloaded and re-loaded from one means of transport to another.

43. In October 2021, the Food Procurement Unit introduced an early release clause for all new wheat contracts. This procedure ensures maximum quality assurance and full vendor accountability through the introduction of a “recall and replace” clause. The clause enables the Food Procurement Unit to mitigate potential reputational risks resulting from quality issues and will shift potential charges associated with quality compliance (such as re-testing and detention and demurrage charges) to vendors.
44. The Food Procurement Unit, in coordination with the Food Safety and Quality Unit, continued to implement improved quality control measures for the sourcing of sorghum including enhanced cleaning and sieving requirements and an inspection statement of work, especially for new markets. This has reduced the percentage of defective grains and impurities, reducing potential quality issues and the likelihood that commodities will be rejected at destination. This has allowed WFP to diversify its sorghum purchase strategies and make better use of pre-positioning.

### **Tracking and monitoring of food**

45. A new information technology solution called FOSTER, which tracks and analyses food procurement inspection data, allows for the swift and transparent review of inspection-generated data, the assessment of supplier performance and the identification of potential food fraud. The platform was rolled out in 2021 with the uploading of over 54,000 food test results.
46. The Commodity Accounting Unit ensures that commodities are recorded in a timely and reliable manner in WFP’s Logistics Execution Support System (LESS) in order to guarantee consistency in the stock information that operations use on a daily basis. Every quarter, the team compares physical inventory counts with the inventory recorded in LESS in order to mitigate the risk of commodity losses due to theft, fraud and other causes. The unit also assists regional bureaux and country offices in monitoring the best-before dates of commodities through various validation reports, key performance indicators and system alerts to ensure that commodities are dispatched as efficiently as possible based on expiry dates. Commodity accounting specialists also conduct field missions to help country offices and regional bureaux to address data backlogs and to provide training on commodity accounting and LESS.
47. To mitigate losses, quarterly follow-ups were carried out in 2021 with physical inventory checks conducted to support loss monitoring and to provide the Risk and Insurance Unit with information on types of losses.

### **Regional bureau initiatives for minimizing losses**

48. In 2021, regional bureaux supported country offices in their efforts to minimize losses. This support took many forms, including oversight and compliance missions and training, technical assessments and guidance on incident management and the mitigation of food safety and quality risks. These measures aimed to ensure that WFP best practices in food management and logistics were applied consistently in all operations.
49. The Regional Bureau for Eastern Africa conducted oversight missions that focused on warehouse management, transport modalities, packaging and training. During the missions, the regional bureau helped country offices to ensure that expiry dates of commodities in warehouses were checked to avoid food losses due to expiration and reduce the prolonged storage of specific commodities. The oversight missions also supported country offices in following best practices on commodity accounting, contracting and warehouse management. Areas of focus included infestation, rodent activities, roof leaks, reconditioning and general warehouse conditions and operations.

50. Food stocks in warehouses were regularly inspected to maintain quality. This included checking and monitoring temperature and humidity in warehouses and mobile storage units.
51. By verifying transporter performance, the regional bureau ensured that only transporters capable of implementing best practices to minimize transport-related losses were contracted. Fleets were equipped with GPS tracking devices to enable the tracking of movements from warehouses to delivery points, coupled with the use of the Last Mile application, which provides real-time confirmation of receipt at delivery points. The Regional Bureau for Eastern Africa also physically counted loaded commodities with contracted drivers to ensure that the quantities loaded matched work orders. Once each loaded quantity was reconciled, the waybill was signed by both driver and warehouse manager for accountability.

**Box 1: Example of regional bureau support**

In Ghana, the Regional Bureau for Western Africa deployed staff to support transport planning, including for LESS data entries, for a new project for sourcing Super Cereal. Thanks to the support from the regional bureau, the commodities were transported without any loss.

52. The Regional Bureau for Asia and the Pacific conducted regular follow-ups with country offices on training and needs in order to minimize losses through follow-up and monitoring of best-before dates. A training session on food incident management and a workshop on improving the management of specialized nutritious food took place in 2021, at which the regional bureau nutrition team trained staff in handling specialized nutritious foods, which helped reduce losses of such commodities.
53. The Regional Bureau for the Middle East, Northern Africa and Eastern Europe monitored the best-before dates of stocks through the LESS management system to minimize food losses resulting from overlong storage and food expiration. The regional bureau also reduced transportation-related losses by helping country offices to track the movement of food and improve the percentage of transactions captured in real time in LESS.
54. In 2021, the regional bureau improved the logistics key performance indicator dashboard, by adding asset management efficiency and data reliability indicators. The dashboard helped to improve country office performance and contributed to a reduction in overall losses of 1,696 mt.
55. The Regional Bureau for the Middle East, Northern Africa and Eastern Europe also supported food incident management processes by establishing corrective actions to avoid the recurrence of non-conformities that can lead to losses.
56. The Regional Bureau for Southern Africa implemented mitigation measures that included the monitoring of monthly commodity ageing reports; technical support from packaging experts on packaging-related issues and the sharing of improvement measures; and warehouse management training on receiving shipments, rebagging, reconstitution, stacking and food handling.
57. The long-term agreement between WFP and the inspection company for the Southern Africa region stipulates that the company inspector must be present at supplier premises to carry out inspection activities such as overseeing bagging and production, sampling and loading and offloading. Moreover, in accordance with contractual requirements for food vendors, commodities can only be released once a certificate of analysis is received from the inspection company and checked for compliance by the regional food technologist.
58. In 2021, the Regional Bureau for Latin America and the Caribbean provided training for third-party stevedoring and warehouse managers on commodity handling and accounting, warehouse best practices related to cleanliness and hygiene and timely rebagging and reconstitution. Monthly inspections of third-party warehouses were conducted, and action

was taken to strengthen transporter oversight to ensure that commodities were handled appropriately and maximum axle loads were not exceeded. Regular monitoring activities at the country office level helped to reduce transportation-related losses.

59. In coordination with the programme team, the regional bureau sought to strengthen the capacities of cooperating partners by conducting training in warehouse management and food storage and handling for staff responsible for food management in schools, health units and government food warehouses. The Regional Bureau for Latin America and the Caribbean will continue to provide capacity strengthening for government cooperating partners through further training and will increase its focus on internal control mechanisms and commodity quality checks to further minimize losses in the future.
60. The Regional Bureau for Western Africa focused on capacity strengthening by organizing a series of training sessions aimed at using real-time LESS operations to rapidly identify risks of food losses.
61. In addition, the regional bureau deployed staff to assist country offices at high risk of losses in order to address root causes and prevent losses. Missions mostly sought to identify solutions related to warehouse management, commodity accounting and port operations.

## ANNEX I

### Above-threshold losses, by country

1. This annex presents post-delivery losses that exceed WFP thresholds for country-level post-delivery losses of a single food type, either valued at USD 20,000 or more and accounting for at least 2 percent of the volume handled or valued at USD 100,000 or more. In 2021 such losses amounted to 19,613 mt from 14 projects in 14 countries (see table A1).

TABLE A1: OPERATIONS IN COUNTRIES WITH ABOVE-THRESHOLD POST-DELIVERY LOSSES	
Country	Above-threshold post-delivery losses (mt)
The Sudan	6 060
Yemen	5 438
Ethiopia	2 851
South Sudan	1 842
Syrian Arab Republic	985
Mozambique	729
Uganda	655
Cameroon	485
Democratic Republic of the Congo	271
Zimbabwe	114
Central African Republic	70
Nigeria	58
Congo (the)	33
Armenia	22

### Armenia

2. Schools were closed in Armenia from March 2020 onwards as a result of the coronavirus disease 2019 pandemic, which led to the suspension of the WFP school meals programme in the country. It was therefore not possible to distribute all the stock procured for the country before its best-before dates. As a result, approximately 22 mt of vegetable oil – received after the start of the lockdown – reached its expiry date and could not be used. After authorization, the expired oil was disposed of through sale in November 2021. Since this was the first case of disposal in the country office, the logistics assistants participated in a training session to strengthen their capacity to handle such situations. Inventories are being monitored consistently both through the LESS system and in person in order to address any further issues as needed.

### Democratic Republic of the Congo

3. In the Democratic Republic of the Congo, above-threshold post-delivery losses in 2021 amounted to 271 mt. Of these losses, the loss of 227 mt of maize took place in 2014, the loss of 44 mt of maize meal took place in 2019 and the remaining loss of 4 mt of maize meal took place in 2021.
4. In 2014, the country office in the Democratic Republic of the Congo purchased 841 mt of maize locally. Upon delivery, lab analysis and the Congolese Control Office confirmed that the maize was sound and fit for human consumption. However, it was reported that the

maize had high moisture content and was infested with weevils. Approximately 722 mt of the maize was returned to the supplier for replacement. After cleaning, drying and fumigation, the supplier only replaced 496 mt. After years of negotiations and attempts to obtain fresh maize to replace the remaining 227 mt of maize or obtain its equivalent monetary value, in December 2021 the country office received authorization from the Risk and Insurance Unit to record the loss. The loss was not recovered through insurance because the incident occurred before the insurance scheme covered post-delivery losses.

5. In June 2019, a truck left Lubumbashi loaded with 40 mt of maize meal bound for Kananga. The cargo never reached the destination warehouse yet the physical waybill bears a signature and confirmation markings. The invoice for this transport has not been paid and the case is under investigation. In consultation with the Risk and Insurance Unit, it was decided in July 2021 to record this stock as lost in transit. Finally, 4 mt of maize meal were lost during transport due to bad road conditions and transporter truck conditions and as the result of quality issues identified during warehouse inspections conducted during the reconstitution process.

### **Central African Republic**

6. The country office in the Central African Republic incurred above-threshold post-delivery losses of 48 mt of BP-5 emergency ration biscuits and 21 mt of Super Cereal in 2021. For the BP-5 emergency ration biscuits, the loss is related to a consignment of 420 mt that comprised several smaller production batches with mixed expiry dates spread over four months. The consignment required physical segregation at the point of entry in Douala, Cameroon, where it arrived with only three months of shelf life remaining. The country office started to receive the commodity a month later with only two months left until the expiry date stated on the documentation. Upon physical verification, however, it was discovered that a substantial portion of the stock would expire earlier, in just one month. Due to multiple challenges including security and logistical constraints such as road conditions, it was only possible to distribute 368 mt of the commodity. A decision is pending as to whether the remaining 48 mt is fit for human consumption, which will determine follow-up actions.
7. Approximately 21 mt of Super Cereal Plus that had not reached its expiry date was found spoiled inside a cooperating partner's warehouse in Alindao, in the hard-to-access Basse-Kotto prefecture, where WFP had previously pre-positioned food during the rainy season. The cooperating partner had failed to take the required measures to keep the food in good condition and to report the loss to WFP, and it was deemed unfit for human consumption. The spoilage took place while WFP had suspended all collaboration with the cooperating partner pending the investigation of allegations of misconduct by its staff members. The country office could recover part of the value of the commodity because the partner had limited funds as a result of its suspension. WFP is currently considering the option of sending a fund recovery memo to request payment of the remaining losses to the cooperating partner's main office.
8. In order to prevent such losses in the future, the country office has put in place two standard operating procedures: the first is related to warehouse management, particularly food management, and the second pertains to the management of food based on best-before dates. WFP has also sought to sensitize partners in relation to food management.

## The Congo

9. The Congo country office purchased 45 mt of Super Cereal Plus with an expiry date of 30 April 2021; however, the vessel transporting the commodity did not arrive in the country until 9 March 2021. Although the customs clearance process was initiated early, the commodity was not received until 19 April 2021. Given the close best-before date, only 14 mt of the commodity was distributed, and 31 mt was returned to WFP's warehouse pending further action. Finally, losses of 2 mt of Super Cereal Plus that occurred during transport were recorded in 2021.

## Cameroon

10. In Cameroon, above-threshold post-delivery losses amounted to 485 mt, including 314 mt of Super Cereal. Approximately 95 percent of the commodity was close to its expiry date and could not be delivered. The remaining loss is attributable to an incident in 2019 that resulted in stock being deemed unfit for human consumption; destruction and disposal of the spoiled stock was authorized in 2021.
11. Approximately 172 mt of rice was recorded as a loss as result of misalignment between LESS stock data and the stock records of a warehouse managed by a third party. The misalignment was observed over time but because the WFP stocks in the warehouse were tracked by partner file number instead of batch number there was no common element that could facilitate reconciliation of the LESS data and the warehouse records. The Regional Bureau for Western Africa supported the country office and the third party in a reconciliation exercise that was completed in November 2021.

## Ethiopia

12. In 2021 the Ethiopia country office incurred above-threshold post-delivery losses of 2,851 mt. Looting linked to the ongoing conflict in the country caused 65 percent of the losses; over 1,105 mt of Super Cereal Plus, 190 mt of lipid-based nutrient supplements, 426 mt of split peas, 10 mt of wheat and 87 mt of vegetable oil were looted in the last quarter of 2021 in Kombolcha and the Gure-Shombola refugee camp. Approximately 596 mt of the aforementioned losses occurred while the commodities were in the custody of cooperating partners.
13. Between October and December 2021, the conflict in Ethiopia was centred around the cities of Kombolcha and Dessie in the Amhara region, where WFP had food in nearby warehouses. Control of the cities changed hands, and between late November and early December fighting intensified in and around the cities. The worsening security situation meant WFP was no longer able to dispatch food. It is believed that the majority of the looting occurred during this period, following which the country office undertook several actions to reduce such losses in the future, starting by reducing food levels in Kombolcha and moving nearly 18,000 mt of commodities to other warehouses. Restored local administration and security elements were also engaged to reinforce security and risk mitigation measures, and the number of guards per warehouse was increased. Moreover, cooperating partners were advised to assess the security situation in project areas and if necessary to suspend food dispatch until the situation improved, and to remain vigilant while delivering food to partners or communities.
14. The timely uplift of over 36 mt of vegetable oil from Djibouti was hampered by challenges with customs clearance and documentation. By the time the cargo entered Ethiopia, the commodity had only one month of shelf life left and as a result could not be distributed; the commodity was disposed of and an insurance report filed. To limit similar losses in the future the country office will organize a refresher training session for storekeepers managing WFP commodities.

15. The remaining losses, approximately 22 percent of total losses, were transport-related, some linked to challenges in transporting commodities into the Tigray region. When a loss is significant or the result of poor transporter or driver practices, transporters are warned about their poor performance and if sufficient improvement is not made are subsequently suspended.

## **Mozambique**

16. The Mozambique country office suffered above-threshold losses of 729 mt of maize and rice, of which 67 percent was due to inadequate transport, 30 percent problems in third-party-managed warehouses and 3 percent to reconstitution processes. Transport losses mainly resulted from the contamination of food by fuel or food getting wet due to weather conditions and during boat transport. Warehouse losses were due to looting in cooperating partner warehouses and at distribution points, as well as infestation due to excessive heat and rains and other issues related to stock rotation in warehouses. The losses that occurred at cooperating partner warehouses were deducted from the amounts paid to the partners.
17. Corrective actions carried out by WFP to reduce such losses in the future included enhanced stock counting and reconciliation processes involving the country office, suboffices and third-party managed warehouses. Warehouse management training sessions were conducted for cooperating partners, focusing on how to verify cargo during offloading and best stock management practices to avoid losses from infestation.

## **Nigeria**

18. Above-threshold losses for 2021 amounted to 58 mt of vegetable oil in Nigeria. The main reason for the loss was the delayed issuance of the import waiver required for the government import duty exemption certificate. After almost nine months the certificate was received, and the shipment was cleared in January 2021. The consignment was dispatched approximately two months before the recorded expiry date of 31 April 2021, but some of the vegetable oil in fact had a best-before date of 31 March 2021. Therefore, despite country office efforts, 36 mt of the commodity expired and could not be distributed. The remaining vegetable oil was lost during transportation.
19. To reduce the risk of such losses, the Nigeria country office communicates frequently with the federal government, emphasizing the need to receive timely customs clearance so that WFP can carry out food assistance activities. In addition, the country office will ensure that its shipping unit will not process any cargo movements prior to confirmation that the Government has provided the required import duty exemption certificate.

## **South Sudan**

20. The South Sudan country office incurred above-threshold post-delivery losses totalling 1,842 mt in 2021. Poor infrastructure, weather conditions and a fragile security situation in the country led to the loss of 886 mt of maize, sorghum, split peas, vegetable oil, lipid-based nutrition supplements and ready-to-use supplementary food during transportation.
21. Approximately 755 mt of commodity losses resulted from looting caused by civil unrest and political instability. Commodity losses are recovered from transporters if they are transport-related and from security companies in the case of theft. To reduce the risk of looting consideration has been given to reducing the quantity of pre-positioned commodities in areas where there are significant security concerns.

22. Losses at the cooperating partner level were mostly attributable to poor storage conditions, inadequate handling and inexperienced staff. In addition, floods caused by unprecedented rains and overflowing rivers led to 17 mt of food losses. The country office is working to strengthen the logistics capacities of cooperating partners, including by providing training on last mile stock reporting.

## **The Sudan**

23. In 2021, the Sudan country office incurred above-threshold post-delivery losses of 136 mt of lipid-based nutrition supplements, 4,632 mt of sorghum, 557 mt of vegetable oil, 469 mt of lentils, 215 mt of split peas and 50 mt of Super Cereal, amounting to total losses of 6,060 mt. Approximately 86 percent of the losses were the result of an incident that took place in December 2021, when mobs of suspected armed militia members and local people looted and destroyed three WFP warehouses in El-Fasher. This resulted in the loss of 5,241 mt of food commodities. The remaining losses were due to inadequate transport, poor handling and deterioration of packaging material. Approximately 734 mt of the losses occurred while the commodities were in the custody of cooperating partners.
24. In order to reduce the risk of losses due to looting and theft, the country office put in place measures such as community sensitization regarding WFP's mandate in El-Fasher and increased security at all WFP warehouses.
25. Other measures include monitoring of stocks at cooperating partner warehouses, enforced the use of tarpaulins on all trucks, intensive checking and drop testing of packaging with suppliers, mandatory use of pallets at WFP and cooperating partner warehouses, the deployment of a warehouse superintendent company in each warehouse, use of the LESS Last Mile application, and training of WFP and cooperating partner staff on warehouse commodity management and food quality.
26. WFP also established a long-term agreement for the sale of damaged packing materials at WFP warehouses for recycling purposes.

## **Syrian Arab Republic**

27. In the Syrian Arab Republic post-delivery losses amounted to 985 mt, comprising 540 mt of rice, 327 mt of chickpeas, 72 mt of lentils and 45 mt of split lentils.
28. Above-threshold post-delivery losses of rice occurred during warehouse activities, transport and sampling. In several consignments, approximately 40 percent of the commodity was rotten and declared unfit for human consumption.
29. WFP's operation in the Syrian Arab Republic is one of its largest and involves the repacking of a large volume of commodities in a unique process that is carried out manually. Approximately 40 percent of rice losses are due to daily warehouse activities such as repacking, rebagging, reconstitution and weight variances. These "kitting losses" are determined on a monthly basis during a physical inventory count. The remaining losses resulted from transport and food sampling.
30. In 2018, control of the Daraa area in the south of the country, on the border with Jordan, shifted to the Government, and it was no longer possible to reach beneficiaries through Jordan via cross-border operations. Therefore, 286 mt of chickpeas and 72 mt of lentils stocked in Jordan to serve beneficiaries located there had to be moved to the Syrian Arab Republic so that they could be used. As soon as the security situation allowed, the commodities were moved from Jordan and imported to the Syrian Arab Republic by road to the Kisweh warehouse. Although the commodities were of a type regularly exported from Jordan and arrived in the warehouse in good condition, local authorities advised that it would be necessary to obtain customs clearance and in addition that the commodities did not meet Syrian food specification standards and therefore could not be declared fit for human

consumption. The country office negotiated with local authorities to prevent the loss of the commodities but in the meantime the prolonged storage caused the quality and safety of the food to deteriorate. Approximately 36 percent of the chickpea losses and 68 percent of lentil losses were due to the commodities reaching their expiration date and being declared unfit for human consumption in 2021. The remaining losses were mainly due to warehouse production, weight variances and food sampling, infestation and transport.

31. As losses during production and transport are attributable to the service providers and transporters, respectively, the commodity value is deducted from the amounts they are paid. WFP warehouse staff supervise the production process and perform random checks of produced commodities; they also supervise inventory counts. For transport, WFP ensures that all commodities are uploaded and that each truck is sealed before leaving the warehouse.
32. Training in how to avoid and mitigate losses of this type is provided at an annual warehouse management training session for all cooperating partner warehouse staff. In 2021, the commodity accounting team at headquarters supported the largest sub-area office in facilitating such training.

## Uganda

33. In 2021 the Uganda country office incurred above-threshold losses of 632 mt of maize and 23 mt of Super Cereal, for a total of 655 mt.
34. In December 2019, the country office received 177 mt of maize for school meals activities. However, schools closed due to the coronavirus disease 2019 pandemic in March 2020 and the consignment remained in storage for over a year. Despite regular inspections and standard WFP practices in warehouse management, the prolonged storage greatly affected the conditions of the maize. Its colour changed over time and grains were damaged due to repeated infestation. Upon discovering that the consignment was infested in 2021, the country office's food technologist fumigated it. Laboratory analysis carried out after fumigation showed that some lots were either unfit for human consumption or required further sorting and cleaning before their condition could be ascertained. The maize was manually cleaned and sorted twice. In the end, a sizeable amount was cleared for distribution and dispatched, while the remainder was condemned as unfit for human consumption. A further 10 mt of maize was found to be rotten due to poor storage conditions and was also deemed unfit for human consumption.
35. In addition, approximately 238 mt was found to be contaminated with aflatoxin due to poor storage conditions including roof leakages. Remaining losses of 188 mt and 19 mt of maize resulted respectively from variance in unit weights - attributable to cooperating partners - and transport.
36. Super Cereal Plus losses were mostly due to transport, with a small percentage due to warehouse losses mainly attributed to damage by rodents and termites. WFP carried out planned repair works and installed concrete floors in WFP-managed storage facilities to minimize damage caused by rodents and termites.
37. In order to avoid or mitigate such losses in the future, the country office is seeking to strengthen staff capacity in warehouse and commodity management, with particular emphasis on the ability of warehouse staff to proactively identify and implement loss mitigation measures such as cleaning and sorting, as well as the ability to detect poor quality food commodities in order to strengthen quality controls at the point of entry.
38. WFP is also seeking to sensitize cooperating partners on food safety and quality issues in order to reduce food commodity rejection at the cooperating partner level. More capacity strengthening activities related to food safety and quality are planned for 2022.

## Yemen

39. In 2021, above-threshold post-delivery losses in Yemen amounted to 5,438 mt, of which 93 percent were of wheat.
40. A total of 51,000 mt of wheat was received in June and August 2018 at the Red Sea mills in Hodeidah. Due to the proximity of the Red Sea mill to the front line in the conflict there, milling was delayed for two years. The suboptimal conditions in which the wheat was stored by the miller resulted in frequent and severe infestations, necessitating several rounds of fumigation and treatment. After a test run in September 2019, milling did not resume until December 2019 and was halted several times for various reasons. Because of the conditions and prolonged storage, impurities surpassed acceptable levels, reaching 10 percent (5,098 mt of 50,983 mt). The loss was recorded in 2021. As a result of the losses, the Yemen country office ceased to receive cargo at the Red Sea mills because of its proximity to the front line; this arrangement is subject to review as and when the security situation allows.
41. Transport and warehouse losses constitute 52 percent of the post-delivery losses of 241 mt of wheat flour. Such losses mostly took place during the delivery process and at cooperating partner warehouses between 2020 and 2021. Losses of wheat flour due to transport were caused by unauthorized and inadequate storage by one transporter, poor quality material used to cover flour during transport, infestation, unauthorized distribution by cooperating partners, pilferage and theft and sampling. Warehouse losses were due to expiry of shelf-life, damage during handling and sampling loss. The country office recovered the entire loss for all quantities lost or damaged while in the custody of transporters or warehouse operators.
42. Cooperating partners were equipped with food and storage handling gear such as tarpaulins and pallets. Furthermore, some of the storage facilities and warehouses of cooperating partners that required renovations were provided with budgets for improving food storage and handling in accordance with new field-level agreements.
43. In 2019 a rainstorm at the Bajil warehouse damaged the drain around mobile storage units, spoiling 26 mt of pulses, which had to be disposed of. The Legal Office advised the country office to hold the service provider accountable for the loss. The service provider was held accountable for the loss and the case was finally closed in 2021.
44. Poor quality packaging caused the leakage of oil from lipid-based nutrition supplement, leading to a post-delivery loss of 70 mt of the product. The leaking began in 2020, and efforts to resolve the issue with the supplier are still ongoing.
45. In order to minimize such losses in the future, in coordination with the programme unit the supply chain unit of the country office will arrange refresher training in 2022 on food handling and storage procedures for the field and logistics staff of cooperating partners.

## Zimbabwe

46. The Zimbabwe country office registered 2021 post-delivery losses of maize amounting to 114 mt as the result of a loss that occurred in 2016. In 2016, a toll milling company failed to provide the agreed monthly quantity of maize meal to the country office. For reasons unknown to WFP, the company took the maize grain provided by WFP without consent and used it for purposes unrelated to its contract with WFP. The company was later liquidated, as a result of which the country office was unable to recover the loss. A note for the record was prepared and approved in 2021 in accordance with guidance from headquarters, and the loss was registered in the system in 2021.

## ANNEX II

## Global losses

2021 GLOBAL LOSSES REPORT - LOSSES BY COMMODITY			
Commodity	Commodity description	Sum of net mt	Sum of USD
CERBAR	Barley	9.410	3 845.69
CERMAZ	Maize	2 317.347	957 624.52
CERMML	Maize meal	370.110	229 850.98
CEROAT	Oat	19.276	-
CERPAS	Pasta	8.027	4 870.25
CERRIC	Rice	4 955.083	3 346 132.02
CERSOR	Sorghum/millet	8 411.562	3 303 568.94
CERWBG	Bulgur wheat	77.530	40 596.22
CERWHE	Wheat	10 099.032	3 328 136.63
CERWHF	Wheat flour	1 677.175	755 999.20
DAIDSP	Plain dried skimmed milk	300.252	1 006 578.36
DAIUHT	UHT milk	1.254	1 408.29
FRUDFR	Dried fruits	17.388	26 879.52
FSHCFI	Canned fish	0.892	4 135.47
MEACHK	Canned chicken	0.843	1 506.82
MIXBP5	BP-5 emergency rations	48.472	186 995.50
MIXCSB	Corn soya blend	2 463.273	2 667 307.13
MIXHEB	High energy biscuits	114.219	177 895.35
MIXLNS	Lipid-based nutrition supplement	813.034	2 050 707.63
MIXPWB	Pea wheat blend	0.005	16.26
MIXRSF	Ready to use supplementary food	130.917	372 254.57
MIXWSB	Wheat soya blend	139.453	126 106.65
MSCHAL	Halawa	0.080	212.32
MSCMNP	Micronutrient powder	1.543	18 089.42
MSCSAL	Iodised salt	336.549	54 098.92
MSCSPC	Spices	8.668	11 339.85
MSCSUG	Sugar	1 131.709	524 354.68
MSCTOM	Processed tomato	1.695	3 038.74
MSCYEA	Yeast	0.875	1 847.90
OILOLV	Olive oil	0.104	287.02
OILVEG	Vegetable oil	1 546.677	2 275 708.02
PPFRTN	Rations	32.155	29 205.87
PULBEA	Beans	318.219	305 280.06
PULCKP	Chickpeas	495.431	394 793.51
PULCPU	Canned pulses	1.695	1 922.01
PULCVE	Canned vegetables	0.454	478.35
PULLEN	Lentils	633.973	423 420.08
PULPEA	Peas	158.767	107 890.30
PULSLN	Split lentils	273.921	233 778.79
PULSPE	Split peas	3 443.293	1 969 369.32
<b>Grand total</b>		<b>40 360.362</b>	<b>24 947 531.16</b>

## ANNEX III

2021 PRE DELIVERY LOSSES REPORT - LOSSES BY COMMODITY				
Commodity	Commodity Description	Pre-delivery losses (mt)	Pre-delivery losses (USD)	% losses (USD)
CERMAZ	Maize	696.825	372 588.03	3.66
CERMML	Maize meal	220.140	134 544.00	1.32
CEROAT	Oat	19.276	-	0.00
CERPAS	Pasta	0.006	4.35	0.00
CERRIC	Rice	2 833.322	2 029 160.21	19.92
CERSOR	Sorghum/millet	2 516.200	1 100 719.42	10.80
CERWBG	Bulgur wheat	12.870	7 796.37	0.08
CERWHE	Wheat	4 406.255	1 415 668.14	13.89
CERWHF	Wheat flour	1 154.770	515 619.78	5.06
DAIDSP	Plain dried skimmed milk	300.000	1 005 680.31	9.87
FRUDFR	Dried fruits	6.250	8 985.85	0.09
FSHCFI	Canned fish	0.144	596.36	0.01
MIXCSB	Corn soya blend	429.303	377 615.31	3.71
MIXHEB	High energy biscuits	51.991	76 341.40	0.75
MIXLNS	Lipid-based nutrition supplement	227.896	534 344.56	5.24
MIXRSF	Ready to use supplementary food	4.808	13 990.15	0.14
MIXWSB	Wheat soya blend	5.632	5 672.27	0.06
MSCSAL	Iodised salt	15.589	3 079.85	0.03
MSCSUG	Sugar	1 060.140	486 165.70	4.77
OILVEG	Vegetable oil	366.188	556 760.32	5.46
PPFRTN	Rations	3.172	2 238.63	0.02
PULBEA	Beans	108.360	115 543.31	1.13
PULCKP	Chickpeas	167.429	136 844.39	1.34
PULLEN	Lentils	71.318	45 676.32	0.45
PULPEA	Peas	62.604	35 157.23	0.35
PULSLN	Split lentils	229.023	181 740.89	1.78
PULSPE	Split peas	1 864.144	1 026 467.80	10.07
<b>Grand total</b>		<b>16 833.655</b>	<b>10 189 000.95</b>	

**ANNEX IV**

<b>2021 PRE-DELIVERY LOSS REPORT - LOSSES BY REASON</b>		
<b>Reason for loss</b>	<b>Pre-delivery losses (mt)</b>	<b>Pre-delivery losses (USD)</b>
Deterioration of food commodities mainly attributable to problems at origin	702.094	348 977.46
Deterioration of packaging materials	0.678	859.51
Flooding and other natural disasters	2.463	904.02
Improper/overlong storage	488.924	660 771.86
Inadequate transport	10 289.145	5 497 193.80
Loss due to sampling food analysis	48.715	31 626.60
Loss during civil strife	80.544	54 593.69
Pilferage/theft	2.332	2 821.16
Poor handling	587.894	674 271.32
Reconstitution/rebagging/repacking	4 615.766	2 906 998.07
Short-delivered	15.088	9 967.71
Variance in weight	0.012	15.75
<b>Grand total</b>	<b>16 833.655</b>	<b>10 189 000.95</b>

## ANNEX V

2021 POST-DELIVERY LOSS REPORT - LOSSES BY REASON		
Reason for loss	Post-delivery losses (mt)	% of total loss
Attack by termites	39.942	0.17
Broken during loading	17.586	0.07
Deterioration of food commodities mainly attributable to problems at origin	565.663	2.40
Deterioration of packaging materials	25.609	0.11
Flooding and other natural disasters	70.832	0.30
Improper/overlong storage	1 043.068	4.43
Inadequate transport	3 068.293	13.04
Infestation	79.694	0.34
Loss due to fire	38.506	0.16
Loss due to over scooping	66.705	0.28
Loss due to sampling food analysis	111.345	0.47
Loss during civil strife	2 755.570	11.71
Pilferage/theft	6 833.150	29.04
Poor handling	450.546	1.92
Processing/transformation of commodity	77.052	0.33
Reconstitution/rebagging/repacking	7 787.972	33.10
Short-delivered	29.936	0.13
Unauthorized distribution	148.046	0.63
Variance in weight	237.914	1.01
Wet bags	23.215	0.10
Wet by gasoil	0.100	0.00
Wet by water	55.963	0.24
<b>Grand total</b>	<b>23 526.707</b>	

**ANNEX VI**

<b>2021 POST-DELIVERY LOSS REPORT QUANTITIES AND VALUES BY REGION</b>								
	<b>2021 Opening stock</b>		<b>Received in recipient country</b>		<b>Total handled</b>		<b>Post-delivery losses</b>	
<b>RBB</b>	38 060	33 579 330	454 761	272 391 222	492 821	305 970 552	103	84 530
<b>RBC</b>	249 900	148 202 099	1 808 987	1 017 410 002	2 058 888	1 165 612 101	7 221	3 307 284
<b>RBD</b>	117 107	95 487 852	527 901	408 089 741	645 007	503 577 592	1 510	1 297 851
<b>RBJ</b>	79 975	40 642 281	369 012	248 700 294	448 987	289 342 575	1 856	1 138 397
<b>RBN</b>	286 476	198 807 692	1 787 915	853 519 801	2 074 392	1 052 327 493	12 734	8 850 244
<b>RBP</b>	14 678	12 013 893	49 120	48 271 210	63 799	60 285 103	102	80 224
<b>Grand total</b>	<b>786 197</b>	<b>528 733 146</b>	<b>4 997 697</b>	<b>2 848 382 271</b>	<b>5 783 894</b>	<b>3 377 115 417</b>	<b>23 527</b>	<b>14 758 530</b>
							0.41%	0.44%

RBB = Regional Bureau for Asia and the Pacific; RBC = Regional Bureau for the Middle East, Northern Africa and Eastern Europe; RBD = Regional Bureau for Western Africa; RBJ = Regional Bureau for Southern Africa; RBN = Regional Bureau for Eastern Africa; RBP = Regional Bureau for Latin America and the Caribbean

## ANNEX VII

2021 POST-DELIVERY LOSS REPORT - LOSSES BY COMMODITY				
Commodity	Commodity description	Total handled (USD)	Post-delivery losses (USD)	Losses in USD as % of total handled
CERBAR	Barley	1 354 117.87	3 845.69	0.28
CERBHW	Buckwheat	48 261.69	-	0.00
CERBRE	Bread	11 444.60	-	0.00
CERMAZ	Maize	73 704 900.20	585 036.49	0.79
CERMML	Maize meal	56 373 871.08	95 306.98	0.17
CEROAT	Oat	13 096.93	-	0.00
CERPAS	Pasta	1 485 264.83	4 865.90	0.33
CERRIC	Rice	277 258 631.76	1 316 971.81	0.47
CERSOR	Sorghum/millet	361 332 914.78	2 202 849.52	0.61
CERWBG	Bulgur wheat	22 190 325.77	32 799.85	0.15
CERWHE	Wheat	307 781 417.02	1 912 468.49	0.62
CERWHF	Wheat flour	527 496 433.08	240 379.42	0.05
DAIDSP	Plain dried skimmed milk	1 414 280.65	898.05	0.06
DAIUHT	UHT milk	1 375 302.53	1 408.29	0.10
FRUDFR	Dried fruits	7 200 230.06	17 893.67	0.25
FSHCFI	Canned fish	14 356 418.18	3 539.11	0.02
MEABEF	Canned beef	206 201.28	-	0.00
MEACHK	Canned chicken	99 156.16	1 506.82	1.52
MIXBIS	Biscuits	162 183.12	-	0.00
MIXBP5	BP-5 emergency rations	255 886.91	186 995.50	73.08
MIXCSB	Corn soya blend	225 815 919.60	2 289 691.82	1.01
MIXHEB	High energy biscuits	63 576 522.59	101 553.95	0.16
MIXLNS	Lipid-based nutrition supplement	272 505 040.45	1 516 363.07	0.56
MIXPWB	Pea wheat blend	512 652.27	16.26	0.00
MIXRSF	Ready to use supplementary food	56 839 652.24	358 264.42	0.63
MIXRTF	Ready to use therapeutic food	49 757.28	-	0.00
MIXWSB	Wheat soya blend	71 982 749.76	120 434.38	0.17
MIXWSF	Wheat soy flour	164 979.00	-	0.00
MSCHAL	Halawa	926.23	212.32	22.92
MSCMNP	Micronutrient powder	1 291 158.62	18 089.42	1.40
MSCMNT	Micronutrient tablets	59 270.87	-	0.00
MSCSAL	Iodized salt	5 757 767.83	51 019.07	0.89
MSCSPC	Spices	11 339.85	11 339.85	100.00

<b>2021 POST-DELIVERY LOSS REPORT - LOSSES BY COMMODITY</b>				
<b>Commodity</b>	<b>Commodity description</b>	<b>Total handled (USD)</b>	<b>Post-delivery losses (USD)</b>	<b>Losses in USD as % of total handled</b>
MSCSUG	Sugar	17 617 819.40	38 188.98	0.22
MSCTOM	Processed tomato	3 043.04	3 038.74	99.86
MSCYEA	Yeast	574 986.94	1 847.90	0.32
OIOLV	Olive oil	71 075.74	287.02	0.40
OILVEG	Vegetable oil	483 088 906.24	1 718 947.70	0.36
PPFRTN	Rations	229 228 891.07	26 967.24	0.01
PULBEA	Beans	85 045 703.83	189 736.75	0.22
PULCKP	Chickpeas	5 685 735.36	257 949.12	4.54
PULCPU	Canned pulses	246 894.96	1 922.01	0.78
PULCVE	Canned vegetables	26 684.82	478.35	1.79
PULLEN	Lentils	30 049 763.29	377 743.76	1.26
PULPEA	Peas	34 685 264.37	72 733.07	0.21
PULSLN	Split lentils	70 849.83	52 037.90	73.45
PULSPE	Split peas	138 014 142.79	942 901.52	0.68
TUBFRS	Tubers - fresh	17 580.31	-	0.00
<b>Grand total</b>		<b>3 377 115 417.08</b>	<b>14 758 530.21</b>	<b>0.44</b>

Total handled = opening stocks plus food received in-country.

## ANNEX VIII

2021 POST-DELIVERY LOSS REPORT						
Quantities and values by recipient country						
Region	Recipient country	Total handled		Post-delivery losses		% losses USD vs. total handled USD
		Net mt	USD	Net mt	USD	
RBB	Afghanistan	345 500.2	207 776 857.6	56.7	37 275.4	0.02
	Bangladesh	26 458.2	27 691 523.6	24.5	30 708.4	0.11
	Cambodia	4 006.7	4 174 012.5	5.9	3 905.7	0.09
	Kyrgyzstan	7 135.7	3 786 364.8	0.1	73.2	0.00
	Lao People's Democratic Republic	4 806.4	4 369 302.5	8.2	6 743.2	0.15
	Myanmar	79 223.7	35 143 120.3	6.8	3 393.1	0.01
	Nepal	7 064.4	5 611 291.7	0.4	305.4	0.01
	Pakistan	9 509.8	12 066 342.2	0.7	1 199.4	0.01
	Sri Lanka	42.8	153 383.2	0.2	926.2	0.60
	Tajikistan	9 036.4	5 144 247.7	-	-	0.00
	Timor-Leste	37.0	54 105.8	-	-	0.00
<b>RBB total</b>		<b>492 821.4</b>	<b>305 970 552.2</b>	<b>103.5</b>	<b>84 529.9</b>	<b>0.03</b>
RBC	Algeria	26 331.5	9 150 812.1	33.8	29 591.3	0.32
	Armenia	3 126.9	2 855 946.8	62.1	48 149.4	1.69
	Iran (Islamic Rep. of)	5 839.2	2 585 653.3	24.0	12 599.8	0.49
	Iraq	128.0	151 600.7	0.0	9.1	0.01
	Jordan	1 816.5	2 844 902.2	0.5	711.1	0.02
	Lebanon	33 931.1	35 389 497.1	18.9	16 987.3	0.05
	Libya	10 885.8	8 687 160.7	6.3	7 032.1	0.08
	State of Palestine	10 185.4	6 910 794.8	0.1	272.3	0.00
	Syrian Arab Republic	645 279.1	409 628 236.7	1 349.3	892 450.1	0.22
	Tunisia	110.5	87 530.4	-	-	0.00
	Yemen	1 321 253.8	687 319 966.4	5 726.1	2 299 481.8	0.33
<b>RBC total</b>		<b>2 058 887.9</b>	<b>1 165 612 101.4</b>	<b>7 221.1</b>	<b>3 307 284.3</b>	<b>0.28</b>
RBD	Benin	31 937.1	16 112 451.8	27.2	15 957.9	0.10
	Burkina Faso	83 867.5	67 734 045.7	44.6	35 086.2	0.05
	Cameroon	55 624.9	37 758 793.4	644.3	388 150.2	1.03
	Central African Republic	43 596.4	38 817 338.4	215.1	346 384.7	0.89
	Chad	91 872.3	60 971 595.0	202.5	122 414.6	0.20
	Côte d'Ivoire	5 539.3	4 129 613.1	6.7	4 587.6	0.11
	Gambia	8 134.4	4 645 852.7	0.8	669.6	0.01

2021 POST-DELIVERY LOSS REPORT						
Quantities and values by recipient country						
Region	Recipient country	Total handled		Post-delivery losses		% losses USD vs. total handled USD
		Net mt	USD	Net mt	USD	
	Guinea	8 734.5	9 602 191.7	8.9	5 773.6	0.06
	Guinea-Bissau	2 233.7	3 438 753.5	0.4	260.1	0.01
	Liberia	27 193.7	14 436 213.0	20.2	11 785.5	0.08
	Mali	7 383.3	10 162 274.8	10.4	16 581.2	0.16
	Mauritania	7 824.3	5 407 387.1	1.4	957.5	0.02
	Niger (the)	90 084.4	72 993 702.1	30.4	28 895.6	0.04
	Nigeria	163 884.4	145 944 460.0	250.4	293 986.0	0.20
	S.Tome, Principe	223.9	233 123.9	-	-	0.00
	Senegal	1 275.7	2 174 030.6	4.5	4 156.8	0.19
	Sierra Leone	13 156.4	7 779 132.4	41.9	22 028.5	0.28
	Togo	2 441.5	1 236 633.3	0.2	175.9	0.01
<b>RBD total</b>		<b>645 007.5</b>	<b>503 577 592.4</b>	<b>1 509.8</b>	<b>1 297 851.3</b>	<b>0.26</b>
RBJ	Angola	1 685.5	1 463 066.8	4.2	1 963.4	0.13
	Congo (the)	8 571.1	7 327 358.3	53.3	39 397.4	0.54
	Dem. Rep. of the Congo	115 193.8	105 107 185.7	577.9	373 637.1	0.36
	Lesotho	1 301.1	2 397 384.6	1.8	2 123.2	0.09
	Madagascar	78 672.8	51 695 778.0	66.8	42 809.0	0.08
	Malawi	3 638.4	1 967 455.4	14.1	8 263.9	0.42
	Mozambique	76 057.8	52 989 780.4	921.9	573 689.1	1.08
	Namibia	230.5	475 797.5	-	-	0.00
	Swaziland	6 542.6	3 154 253.7	6.7	1 985.5	0.06
	United-Republic of Tanzania	44 348.0	17 192 952.9	11.7	7 222.8	0.04
	Zambia	237.3	115 795.8	11.6	7 431.1	6.42
	Zimbabwe	112 508.1	45 455 766.4	186.0	79 874.9	0.18
	<b>RBJ total</b>		<b>448 987.1</b>	<b>289 342 575.5</b>	<b>1 856.0</b>	<b>1 138 397.4</b>
RBN	Burundi	26 808.2	22 241 455.6	7.2	6 058.2	0.03
	Djibouti	7 672.0	4 484 432.4	58.3	26 564.3	0.59
	Ethiopia	888 308.1	398 651 280.0	3 161.3	3 320 899.2	0.83
	Kenya	70 483.9	40 828 187.5	116.3	48 542.0	0.12
	Rwanda	7 217.0	5 171 101.8	34.4	11 412.4	0.22
	Somalia	86 009.0	86 864 389.8	136.5	111 147.1	0.13
	South Sudan	325 437.4	224 844 110.9	2 024.1	1 691 817.6	0.75
	Sudan (the)	563 330.1	221 713 708.6	6 478.3	3 370 381.4	1.52

2021 POST-DELIVERY LOSS REPORT						
Quantities and values by recipient country						
Region	Recipient country	Total handled		Post-delivery losses		% losses <i>USD</i> vs. total handled <i>USD</i>
		Net mt	<i>USD</i>	Net mt	<i>USD</i>	
	Uganda	99 126.1	47 528 826.3	717.4	263 421.5	0.55
<b>RBN total</b>		<b>2 074 391.8</b>	<b>1 052 327 492.8</b>	<b>12 733.8</b>	<b>8 850 243.8</b>	<b>0.84</b>
RBP	Jamaica	8.9	7 014.2	8.9	7 014.2	100.00
	Colombia	12 082.8	15 442 372.1	1.9	2 019.8	0.01
	Cuba	3 134.2	4 387 327.8	0.1	61.1	0.00
	Dominican Republic	756.8	586 567.2	-	-	0.00
	Guatemala	2 504.2	2 744 031.6	-	-	0.00
	Haiti	25 540.2	18 250 152.7	91.2	70 814.0	0.39
	Honduras	3 331.6	3 403 319.3	0.3	275.2	0.01
	Nicaragua	16 440.0	15 464 318.0	0.0	39.3	0.00
<b>RBP total</b>		<b>63 798.7</b>	<b>60 285 102.8</b>	<b>102.4</b>	<b>80 223.5</b>	<b>0.13</b>
<b>Grand total</b>		<b>5 783 894.4</b>	<b>3 377 115 417.1</b>	<b>23 526.7</b>	<b>14 758 530.2</b>	<b>0.44</b>

Total handled = opening stocks plus food received in-country

## ANNEX IX

2021 POST DELIVERY LOSS REPORT Commodities with post-delivery losses greater than 2 percent in tonnage and value over USD 20,000 or value greater than USD 100,000									
Region	Country	Project	WBS	Commodity	Total handled net mt	Total handled (USD)	Post-delivery losses net (mt)	Post-delivery losses (USD)	% losses (mt) vs. total handled
RBC	Armenia	AM02	AM02.01.013.SMP1	OILVEG	73.68	119 592.81	22.30	31 892.54	30.26
RBJ	Dem. Rep. of the Congo	CD01	CD01.01.011.URT1	CERMAZ	226.95	86 715.33	226.95	86 715.33	100.00
RBJ	Dem. Rep. of the Congo	CD01	CD01.01.011.URT1	CERMML	53.90	114 312.11	44.10	30 826.88	81.82
RBD	Central African Republic	CF01	CF01.01.011.URT1	MIXBP5	50.60	195 189.28	48.47	186 995.50	95.80
RBD	Central African Republic	CF01	CF01.02.021.NPA1	MIXCSB	44.71	64 596.87	21.54	31 121.49	48.18
RBJ	Congo (the)	CG01	CG01.01.011.URT1	MIXCSB	1 319.65	925 231.69	32.70	22 029.13	2.48
RBD	Cameroon	CM01	CM01.01.011.URT1	CERRIC	20 427.11	10 928 668.67	171.87	102 291.86	0.84
RBD	Cameroon	CM01	CM01.01.011.URT1	MIXCSB	1 932.04	1 342 719.33	313.64	196 151.84	16.23
RBN	Ethiopia	ET02	ET02.01.011.NTA1	MIXCSB	34 581.41	40 834 009.59	684.82	1 064 470.90	1.98
RBN	Ethiopia	ET02	ET02.01.011.NTA1	MIXLNS	14 368.39	34 720 006.17	233.89	594 924.67	1.63
RBN	Ethiopia	ET02	ET02.01.011.URT1	CERWHE	254 917.25	88 481 595.86	357.26	161 839.94	0.14
RBN	Ethiopia	ET02	ET02.01.011.URT1	OILVEG	9 738.34	11 931 619.31	77.72	111 589.10	0.80
RBN	Ethiopia	ET02	ET02.01.011.URT1	PULSPE	29 049.21	15 097 771.16	545.80	323 669.99	1.88
RBN	Ethiopia	ET02	ET02.01.011.URT3	MIXCSB	14 315.48	14 215 486.68	86.21	106 921.89	0.60

<b>2021 POST DELIVERY LOSS REPORT</b> <b>Commodities with post-delivery losses</b> <b>greater than 2 percent in tonnage and value over USD 20,000 or value greater than USD 100,000</b>									
Region	Country	Project	WBS	Commodity	Total handled net mt	Total handled (USD)	Post-delivery losses net (mt)	Post-delivery losses (USD)	% losses (mt) vs. total handled
RBN	Ethiopia	ET02	ET02.01.023.SMP1	CERRIC	3 326.95	2 119 267.15	430.00	302 998.15	12.92
RBN	Ethiopia	ET02	ET02.01.023.SMP1	MIXCSB	5 254.85	3 633 523.36	343.75	276 320.48	6.54
RBN	Ethiopia	ET02	ET02.01.023.SMP1	OILVEG	710.72	896 748.52	91.92	152 098.58	12.93
RBJ	Mozambique	MZ01	MZ01.01.021.URT1	CERMAZ	5 819.47	1 947 253.43	123.28	42 218.67	2.12
RBJ	Mozambique	MZ01	MZ01.01.021.URT1	CERRIC	48 682.28	28 311 801.06	605.72	352 436.05	1.24
RBD	Nigeria	NG01	NG01.01.011.URT1	OILVEG	8 271.35	20 923 065.41	57.86	135 062.92	0.70
RBN	Sudan (the)	SD02	SD02.01.011.NPA1	MIXLNS	7 219.04	17 500 713.03	136.51	355 088.88	1.89
RBN	Sudan (the)	SD02	SD02.01.011.SMP1	CERSOR	26 401.91	7 742 379.01	540.23	168 679.33	2.05
RBN	Sudan (the)	SD02	SD02.01.011.URT1	CERSOR	302 903.34	86 783 964.87	4 092.38	1 408 088.27	1.35
RBN	Sudan (the)	SD02	SD02.01.011.URT1	OILVEG	19 610.44	24 265 159.56	557.00	750 607.93	2.84
RBN	Sudan (the)	SD02	SD02.01.011.URT1	PULLEN	27 716.58	16 986 622.43	468.59	298 261.98	1.69
RBN	Sudan (the)	SD02	SD02.01.011.URT1	PULSPE	7 555.29	2 646 809.57	215.45	104 762.24	2.85
RBN	Sudan (the)	SD02	SD02.02.021.NPA1	MIXCSB	149.40	153 174.33	50.24	54 395.60	33.63
RBN	South Sudan	SS01	SS01.01.011.URT1	CERMAZ	37 346.67	13 567 192.56	404.12	182 938.43	1.08
RBN	South Sudan	SS01	SS01.01.011.URT1	CERSOR	160 204.86	80 929 132.53	726.33	369 716.38	0.45
RBN	South Sudan	SS01	SS01.01.011.URT1	OILVEG	13 595.30	19 321 502.77	106.46	152 397.54	0.78
RBN	South Sudan	SS01	SS01.01.011.URT1	PULSPE	15 337.08	10 330 055.19	221.27	146 019.98	1.44
RBN	South Sudan	SS01	SS01.02.021.NTA1	MIXCSB	15 425.11	20 869 997.94	101.76	162 183.03	0.66

2021 POST DELIVERY LOSS REPORT									
Commodities with post-delivery losses									
greater than 2 percent in tonnage and value over USD 20,000 or value greater than USD 100,000									
Region	Country	Project	WBS	Commodity	Total handled net mt	Total handled (USD)	Post-delivery losses net (mt)	Post-delivery losses (USD)	% losses (mt) vs. total handled
RBN	South Sudan	SS01	SS01.02.021.NTA1	MIXLNS	8 853.51	23 793 836.43	70.33	190 292.11	0.79
RBN	South Sudan	SS01	SS01.02.021.NTA1	MIXRSF	2 613.84	7 829 688.30	80.28	227 134.99	3.07
RBN	South Sudan	SS01	SS01.03.033.ACL1	PULSPE	2 420.69	1 405 917.64	131.52	89 154.45	5.43
RBC	Syrian Arab Republic	SY02	SY02.01.011.URT1	CERRIC	25 585.33	10 292 389.22	540.34	317 380.64	2.11
RBC	Syrian Arab Republic	SY02	SY02.01.011.URT1	PULCKP	6 525.50	5 146 656.13	286.51	235 007.35	4.39
RBC	Syrian Arab Republic	SY02	SY02.01.011.URT1	PULLEN	1 663.06	424 990.88	71.71	56 559.35	4.31
RBC	Syrian Arab Republic	SY02	SY02.01.011.URT1	PULSLN	45.44	52 757.28	44.71	51 901.65	98.38
RBC	Syrian Arab Republic	SY02	SY02.01.021.ACL1	PULCKP	177.22	96 142.32	41.30	22 817.91	23.31
RBN	Uganda	UG01	UG01.01.011.URT1	CERMAZ	56 838.67	16 970 389.21	455.24	143 711.16	0.80
RBN	Uganda	UG01	UG01.01.023.SMP1	CERMAZ	5 250.94	1 649 336.83	177.22	53 881.06	3.38
RBN	Uganda	UG01	UG01.02.031.NTA1	MIXCSB	540.79	753 935.45	22.56	28 413.74	4.17
RBC	Yemen	YE01	YE01.01.011.URT1	CERWHE	117 895.37	38 750 432.16	5 098.26	1 659 449.95	4.32
RBC	Yemen	YE01	YE01.01.011.URT1	CERWHF	897 874.35	332 539 442.18	241.53	116 500.43	0.03

2021 POST DELIVERY LOSS REPORT									
Commodities with post-delivery losses									
greater than 2 percent in tonnage and value over USD 20,000 or value greater than USD 100,000									
Region	Country	Project	WBS	Commodity	Total handled net mt	Total handled (USD)	Post-delivery losses net (mt)	Post-delivery losses (USD)	% losses (mt) vs. total handled
RBC	Yemen	YE01	YE01.01.011.URT1	PULBEA	182.16	205 203.79	27.79	33 727.00	15.26
RBC	Yemen	YE01	YE01.02.021.NTA1	MIXLNS	22 302.32	53 493 678.84	70.22	194 749.85	0.31
RBJ	Zimbabwe	ZW01	ZW01.01.011.URT2	CERMAZ	182.83	49 367.90	113.83	30 260.48	62.26
<b>Grand total</b>					<b>2 235 581.39</b>	<b>1 071 440 042.12</b>	<b>19 613.50</b>	<b>11 916 657.62</b>	

Total handled = opening stocks plus food received in-country

**ANNEX X**

<b>POST-DELIVERY LOSSES 2008-2021</b>						
<b>Year</b>	<b>Total volume handled (mt)</b>	<b>Volume of losses (mt)</b>	<b>Losses as a percentage of total volume handled</b>	<b>Total value handled (USD)</b>	<b>Value of losses (USD)</b>	<b>Losses as a percentage of total value handled</b>
2008	4 831 067	21 699	0.45	2 604 005 060	11 388 899	0.44
2009	5 567 314	21 187	0.38	2 755 152 374	10 131 966	0.37
2010	5 508 365	17 128	0.31	2 915 989 860	10 180 080	0.35
2011	4 517 972	20 371	0.45	2 734 427 882	13 217 691	0.48
2012	4 201 302	31 251	0.74	2 936 389 248	18 033 222	0.61
2013	3 770 209	25 016	0.66	2 511 094 911	18 684 094	0.74
2014	3 898 691	18 921	0.49	2 553 059 658	15 563 533	0.61
2015	3 559 176	12 694	0.36	2 596 324 005	11 019 934	0.42
2016	4 234 149	20 109	0.47	2 527 081 008	18 070 937	0.72
2017	4 457 644	14 733	0.33	2 458 337 114	12 841 501	0.52
2018	4 554 062	12 218	0.27	2 347 637 426	9 803 775	0.42
2019	5 515 651	24 113	0.44	2 611 217 157	14 894 532	0.57
2020	5 666 255	21 875	0.39	2 820 742 753	13 527 096	0.48
2021	5 783 894	23 527	0.41	3 377 115 417	14 758 530	0.44