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## **REPORT ON POST-DELIVERY LOSSES FOR THE PERIOD 1 JANUARY–31 DECEMBER 2011**

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## NOTE TO THE EXECUTIVE BOARD

**This document is submitted to the Executive Board for information**

The Secretariat invites members of the Board who may have questions of a technical nature with regard to this document to contact the WFP staff focal points indicated below, preferably well in advance of the Board's meeting.

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## EXECUTIVE SUMMARY

WFP is committed to ensuring that quality food is delivered on time to targeted beneficiaries and that losses along the supply chain are kept to a minimum. This report describes country- and commodity-specific post-delivery losses during 2011 and the measures taken by WFP to contain these losses.

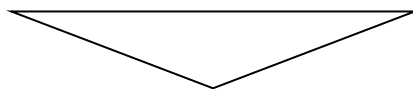
During 2011 WFP assisted 99.1 million beneficiaries and handled 4.5 million mt of food. Net post-delivery losses were 20,371 mt – 0.45 percent – valued at US\$13.2 million, or 0.48 percent of the US\$2.7 billion total value.

Despite precautionary measures, losses occur and are systematically investigated and addressed with immediate mitigation measures. Post-delivery losses arising from internal transport and storage are addressed in compliance with WFP financial regulations and food management guidelines. Strategies to avoid damage during storage and transport include training for staff and partners in warehouse management, flexible transport itineraries, storage time limits, packaging and other measures. Mitigation measures include repackaging, fumigation and cleaning, and seeking reimbursement from responsible parties, as appropriate. All transport contracts stipulate that WFP will deduct from the transporter's invoice the full value of losses that occur when the commodities are under the transporter's responsibility.

Cross-cutting strategies for minimizing losses involve all aspects of supply chain management and include coordination among programme, pipeline and logistics staff; and emergency preparedness and planning measures, security initiatives, monitoring, food technology and training, etc. Corporate measures have been scaled up to address the predominant causes of commodity losses –prolonged storage, pilferage and short deliveries. Technical oversight and support for blended food production includes increasing the stability of these products under high temperatures and developing guidance on their transport and storage.

Pilferage and theft, the greatest single factor behind 2011 losses, often occur in places with compromised security. WFP's many measures to improve security include locating warehouses within secure compounds, ensuring that government or other security personnel accompany WFP convoys, and enhancing collaboration with United Nations and international partners.

## DRAFT DECISION\*



In considering the “Report on Post-Delivery Losses for the Period 1 January–31 December 2011” (WFP/EB.A/2012/13-A), the Board notes the country-specific and commodity-specific losses and the corrective actions taken by WFP, governments and partners to minimize post-delivery losses. It encourages the Secretariat to ensure that losses are kept to a minimum, to seek reimbursement from partners and governments when commodities are lost through negligence and to continue to report to the Board annually on progress.

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\* This is a draft decision. For the final decision adopted by the Board, please refer to the Decisions and Recommendations document issued at the end of the session.

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## INTRODUCTION

1. This paper describes WFP measures to minimize commodity losses, and outlines contexts and situations in countries where post-delivery losses exceeded specified thresholds. It also reviews factors contributing to post-delivery losses in specific contexts, and preventive actions taken. Updates are provided on issues outstanding from previous reports.
2. Post-delivery losses occur after food arrives at the first delivery point in the recipient country. They include all recorded losses incurred during handling, storage and internal transport by WFP's cooperating partners and government counterparts. The figures presented in this report are WFP's gross post-delivery losses, and do not reflect any eventual recoveries. WFP has measures in place to prevent and mitigate such losses and secure their recovery if possible. A significant recovery mechanism for losses incurred during transport is deduction of the value lost from the transporter's invoice, as stipulated in all WFP contracts with transporters. Mitigation measures include repackaging, fumigation and cleaning.
3. Pre-delivery losses occur before commodities arrive in the recipient country; they are insured against all risks, with settlements received by WFP for reprogramming. This report does not address pre-delivery losses or any unintended uses of food after it has been distributed to beneficiaries, such as sharing, theft or sale. Monitoring activities capture these losses, enabling WFP to take appropriate measures.
4. The supply chain elements involved in mitigating losses range from processes for ensuring that the food meets WFP's procurement standards to conditions governing receipt and storage by country operations, transport, and distribution to beneficiaries. Information on all post-delivery losses, regardless of size or value, is provided in the annexes.
5. In the WFP Information Network and Global System II (WINGS II), the valuation of food commodities is based on a moving average price. The losses in this report are valued on the moving average price at the end of 2011.<sup>1</sup>

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## OVERVIEW

6. In 2011 WFP handled food valued at US\$2.7 billion, with losses of US\$13.2 million, or 0.48 percent, compared with 0.35 percent in 2010. Of the 4.5 million mt handled, losses were 20,371 mt, or 0.45 percent, compared with 0.31 percent in 2010. This represents net increases in volume of 3,243 mt and in value of approximately US\$3 million.
7. In 2011, WFP purchased 2.4 million mt of food worth more than US\$1.23 billion, and goods and services worth more than US\$443 million. Food was procured from 87 countries: by value, 71 percent of purchases originated in developing countries and the remainder in developed countries.
8. The most significant causes of losses last year were pilferage and theft (23.2 percent), short deliveries<sup>2</sup> (15.1 percent), and improper and overlong storage (9.8 percent) (see Annex I).

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<sup>1</sup> An inventory valuation method whereby the cost of each item is determined from the weighted average of the cost of similar items at the beginning of the period and similar items purchased during the period.

<sup>2</sup> Short deliveries refer to food lost during inland transport after it has reached the recipient country; they are usually recovered from transporter invoices.

9. Of the total value lost, cereals accounted for 46.9 percent, compared with 45 percent in 2010; mixed foods such as corn-soya blend (CSB), high-energy biscuits (HEBs) and wheat-soya blend (WSB) for 12 percent, compared with 22 percent; oil – mainly vegetable oil – for 16 percent, compared with 17 percent; and pulses for 15 percent, compared with 13 percent in 2010 (see Annex II).
10. Among regions, the highest shares of losses in tonnage were in the regional bureaux of the Sudan (ODS) and Eastern and Central Africa (ODN); the highest shares in value occurred in the Latin American region, mainly owing to losses in Haiti.
11. The greatest losses by country, in both net quantity and value terms, were in Côte d'Ivoire, Democratic Republic of the Congo (DRC), Ethiopia, Haiti, Pakistan and the Sudan, which together accounted for US\$9.1 million, or 69 percent of the total value. Losses were mainly attributable to the complex emergency operations and logistics challenges in these countries, where in 2011 WFP had some of its largest operations. Country-specific issues are discussed in a separate section of this report.
12. In 2011, WFP recovered US\$10.2 million worth of losses. Recovery mechanisms included recovery from private contractors, and sales of food no longer fit for human consumption but fit for animal feed or industrial purposes. Such sales are subject to strict controls to ensure that food is not subsequently used for human consumption.
13. Table 1 shows the losses in quantity and value terms for the seven years from 2005 to 2011. As percentages of total handled in quantity and value, post-delivery losses in 2011 were higher than in 2010 but similar to the averages for the six years 2005–2010: 0.42 percent in tonnage and 0.45 percent in value.

<b>TABLE 1: POST-DELIVERY LOSSES 2005–2011</b>						
<b>Year</b>	<b>Total quantity handled (mt)</b>	<b>Quantity of losses (mt)</b>	<b>% losses of total mt handled</b>	<b>Total value handled (US\$)</b>	<b>Value of losses (US\$)</b>	<b>% losses of total value handled</b>
2005	5 077 411	23 677	0.47	1 811 472 229	9 516 413	0.53
2006	4 994 321	24 133	0.48	1 781 348 513	9 540 580	0.56
2007	4 166 046	16 724	0.40	1 607 373 215	7 152 643	0.44
2008	4 831 067	21 698	0.45	2 604 005 060	11 388 899	0.44
2009	5 567 314	21 187	0.38	2 755 152 374	10 131 965	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

## WFP MEASURES FOR MINIMIZING LOSSES

### Strategies for Minimizing and Managing Losses

14. WFP policies are designed to ensure that food of the right quality reaches beneficiaries with minimal losses. Resources are dedicated to preventing and mitigating losses in all operations by: i) improving procedures for monitoring, tracking and reporting food movements; ii) limiting storage times; iii) reducing moisture content; and iv) ensuring optimum packaging. WFP and governments explore solutions to local issues. Capacity development for WFP, its partners and counterparts is crucial, and WFP emphasizes the training of staff to ensure accountability, recovery of losses where possible, and rigorous quality checks and inventory keeping.
15. There is increasing need for guidance on the preservation of new nutritious food products, as optimum conservation and transport conditions are impossible in some field situations, leading to deterioration. WFP's *Guidance for Temperature Control, Storage and Transport (Nutritious Products) – Sahel Operation* informs logisticians about best practices for managing nutritious foods, and specifies shelf lives and the effects of various temperature exposures for three main product types. Basic recommendations include managing pipelines and deliveries in accordance with partners' needs, and storing commodities that are not for immediate distribution in warehouses at temperatures below 35 °C, before release to partners.
16. WFP's newest advance financing mechanism, the Forward Purchase Facility (FPF), is a special account that enables WFP to purchase the foods most commonly distributed in a region or corridor in anticipation of requests from projects. The objectives of the FPF are to reduce supply lead-times; improve timeliness of deliveries; procure food at advantageous times, in developing countries where possible; and reduce response times, particularly during emergencies. Following a successful pilot, the FPF launched supply lines to East Africa in July 2011 and West Africa at the end of 2011, enhancing WFP's emergency response in the Horn of Africa and the Sahel. Initial findings suggest that country offices have gained, on average, 56 days of supply lead-time. By streamlining deliveries and strengthening pipeline management, the FPF helps to reduce losses.

### Improvements in the Food Procurement Process

17. In 2011, the Procurement Division's Food Safety and Quality Assurance Unit (ODPFQ) continued to enhance WFP's food safety and quality management system, focusing on the following elements.
  - *Product improvement to reduce losses of processed nutritious foods.* Studies and technical support enable WFP to build knowledge and take remedial actions:
    - ◇ In Pakistan, technical support helped resolve issues concerning the local ready-to-use supplementary foods (RUSFs), such as stability/separation and packaging.
    - ◇ The stability of RUSFs affected by very high temperatures is being studied in direct field situations, such as in Chad, and controlled laboratory environments.
    - ◇ In Burkina Faso, a feasibility study on the local production of fortified blended foods has been conducted.
    - ◇ An ODPFQ mission found that insufficient cooking was the source of problems with the stability of SuperCereals. Corrective action and improved tools are addressing this issue.

- ◇ A shelf life study of HEBs and SuperCereal Plus started in early 2012. Tests of the new SuperCereal Plus formula found improvements such as reduced moisture, added anti-oxidants, improved packaging and nitrogen flushing – a technique for preserving packaged foods.
- ◇ Following an acceptability issue affecting SuperCereal premix, a protocol for testing acceptability has been developed. Samples will soon be tested under field conditions.
- ◇ In Italy, a new supplier of SuperCereal Plus received technical support, including recommendations on equipment, process parameters and quality control.
- *Revision of food specifications according to international standards.* ODPFQ ensures that national regulations are taken into account when necessary:
  - ◇ Harmonization of HEB specifications focuses on standardizing the premix composition and protein levels.
  - ◇ By the end of 2011, 90 percent of WFP food specifications were standardized and updated.
  - ◇ *Médecins sans frontières* (MSF), the United Nations Children’s Fund and WFP are jointly defining and harmonizing the packaging and labelling of RUSFs and ready-to-use therapeutic foods.
- *Using safety and quality criteria in the selection of food supply chain actors.* Food processors, grain and pulse suppliers, traders, inspection companies and food laboratories in southern and eastern Africa were rated based on evaluations and audits of their plants and laboratories. These efforts will be expanded to other regions.
  - ◇ Fifty-two food processors were audited to ensure compliance with international standards such as good manufacturing practices and the Hazard Analysis Critical Control Point. ODPFQ is following up on recommended corrective actions, in collaboration with WFP country offices.
  - ◇ Twelve food processor applicants to the recently established Vendor Management Committee were technically assessed through a questionnaire and site visits.
  - ◇ Seventeen long-term agreements (LTAs)<sup>3</sup> with inspection companies<sup>4</sup> will be finalized by 2012.
  - ◇ An agreement was signed with MSF for carrying out joint technical audits of RUSF producers.
- *Training and awareness of actors along the food supply chain.* The content and approach of training vary according to the specific needs of the target audience.
  - ◇ *WFP staff:* The objectives are to establish common knowledge on the principles of food quality and food safety; provide information on implementation of the food safety and quality management system (FSQMS); train participants on preventing and resolving procurement/logistics issues; highlight the importance of screening

<sup>3</sup> LTAs enable food inspection companies to invest more specifically in WFP’s requirements, enabling WFP to demand more from the contracted companies.

<sup>4</sup> In Bangladesh, Burkina Faso, Ethiopia, Indonesia, Madagascar, Malawi, Mozambique, Nepal, Occupied Palestinian Territory, Pakistan, South Africa, Thailand, Turkey, Uganda, United Republic of Tanzania and Yemen. In Brazil, an LTA was arranged for controlling and analysing commodities donated by the Government – about 150,000 mt over one year.



food for quality – sampling and the Blue Box;<sup>5</sup> provide information on managing food safety incidents; and provide insights on the processing/manufacture of WFP foods and new nutritional products. In 2011, a total of 172 WFP staff members received training.

- ◇ *WFP vendors – food suppliers and inspection companies.* The main training objectives are to support capacities in performing required activities, and assess the need for support materials – procedures, guidelines, handbooks. Between July and October 2011, more than 100 training tools were reviewed; a questionnaire survey was undertaken in 21 countries; and two joint field missions were held, to Ethiopia and Uganda, with the Natural Resources Institute. These activities aimed to recapitulate on best post-harvest handling and storage (PHHS) practices, evaluate the PHHS training offered so far, and identify the most effective methods for delivering training. The next step will be the compilation of a PHHS handbook, to address the knowledge gaps and needs of small-scale farmers involved in the Purchase for Progress (P4P) programme.
  - ◇ To enhance smallholder farmers' capacity to carry out food quality screening, production and dissemination of the Blue Box was outsourced in May 2011. Following a training of trainers exercise with two collaborating inspection companies providing training, the initiative was adopted in five countries.<sup>6</sup>
  - ◇ To clarify the scope of work for inspection companies with LTAs and define common approaches for inspecting WFP foods, 37 staff members from two WFP service providers in East Africa were trained between June and November 2011 in two sessions in Uganda and Ethiopia.
18. A Web-based software package for improved management of the food safety and quality system is being developed. The software will track evaluations, laboratory reports on deliveries and other supplier information to establish supplier performance ratings. Suppliers will be able to review their ratings online, and will be advised on how to improve them. The software will enable WFP to build a food quality database, facilitating the management and measuring of quality and compliance.

### Improvements in Commodity Tracking

19. The pilot Logistics Execution Support System (LESS) integrates the entire WFP food supply chain into a unified system for all transactions – supply chain management, inventory accounting and real-time tracking.
20. The LESS pilot project started in Liberia and Sierra Leone in November 2011 to create a case study for assessment and eventual roll-out in the future. The system reflects actions and accountabilities, supporting real-time planning and management decision-making, including for emergency response. Founded on the principle that “the system supports the business where the business is conducted”, LESS extends systems, applications and data processing products to numerous locations where WFP operates, such as warehouses and port offices. The staff who perform supply chain management functions in these locations – storekeepers – use LESS in their everyday work, to record the passage of title of goods and the hand-over of care and custody. This provides real-time visibility of stock levels

<sup>5</sup> A kit containing tools for on-the-spot screening of food quality parameters and grading of grain at any stage along the supply chain.

<sup>6</sup> Burkina Faso, Ethiopia, Mali, South Sudan and Zimbabwe.

and commodity movements in the system, greater accountability for WFP staff, and improved transparency and traceability across the supply chain.

21. The information managed in LESS can be accessed at any time and from any location: the commodity type, location – warehouse or in-transit – quantity and status of WFP stock. Status options are 1) in good order, 2) damaged, or 3) missing, with the associated values visible for all status types. LESS now indicates the production lot of processed food, the crop year of non-processed food, and the best-before date, which has greatly enhanced stock management, including stock rotation. Increased integration of the system means that expected arrivals are also clearly indicated, so their management can be improved.
22. The Logistics Execution Support System automatically determines whether losses are pre- or post-delivery, thus reducing the number of wrong classifications. It also determines the process under which a post-delivery loss was identified, and offers possible reasons for the loss from which users can select the most likely. The real-time visibility of this information enhances planning and allows corrective measures as necessary.
23. An interim evaluation of the LESS pilot project was conducted in February–March 2012, with preliminary findings circulated to all stakeholders in April. The final evaluation was scheduled for completion at the end of May 2012. Evaluation results will help determine the role of LESS in logistics operations and overall supply chain management.

## REGIONS

### Regional Bureau Bangkok (ODB – Asia)

24. To develop and augment the capacities of staff and partners in food handling and management, missions were conducted to make available to country offices best practices in warehouse management accountability and to implement loss mitigation measures.
25. A food technologist based in the bureau provided support to country offices for the second consecutive year, focusing on implementation of the FSQMS in the region. Following training for country office logistics and procurement staff, implementation of the FSQMS led to the upgrading of food specifications in compliance with international guidelines and national policies. Inspection companies were assessed in Bangladesh, India, Indonesia, Nepal, Pakistan and other countries, to determine the companies' capacity to provide services to WFP; positive assessments of inspection companies led to the establishment of LTAs with WFP.
26. Building on previous experience of reducing post-delivery losses through improved quality management of WFP food, WFP designed and initiated shelf life studies for biscuits, blended foods and RUSFs in the region. As in 2010, WFP worked with packaging suppliers and packaging machine manufacturers to increase the shelf life of processed foods and identify: i) optimum packaging options, such as improved lamination combinations for biscuits; ii) lipid-based nutrient supplements; and iii) fortified blended food. Smaller package sizes for fortified blended food facilitated distributions.

### Regional Bureau Cairo (ODC – Middle East, North Africa, Eastern Europe and Central Asia)

27. In 2011, ODC provided WFP and partners' staff with training in warehouse management and food handling. WFP staff ensured adherence to food management guidelines through regular monitoring visits.

28. Loss prevention procedures in place include: i) distribution of food in family ration packages; ii) checks of stock shelf life; iii) laboratory testing; iv) fumigation; v) optimization of distribution processes to avoid storing food for too long at distribution points; and vi) monthly stock inventories.
29. Superintendents carried out quality and quantity checks of delivered food, ensuring that damaged or spoiled items were disposed of in line with WFP procedures. These activities helped minimize food losses across the region.
30. As part of an innovative programme approach in response to the crisis in Libya, WFP provided migrants and third-country nationals with cooked meals at the borders of Egypt and Tunisia, minimizing losses and reducing potential health hazards by: i) enhancing the local community's understanding of WFP's role in providing cooked meals, to ensure the security of staff and food resources; ii) ensuring that contracted suppliers operated near the distribution site, to minimize the time needed to deliver cooked meals; iii) ensuring that cooked meals were brought to the site immediately before the scheduled distribution; iv) ensuring the receipt of daily information from the Office of the United Nations High Commissioner for Refugees (UNHCR) on the number of beneficiaries in need of cooked meals, to avoid over-ordering; and v) including contractual conditions that service providers would compensate WFP for any unsatisfactory meals.

### **Regional Bureau Dakar (ODD – West Africa)**

31. The main drivers of post-delivery losses in ODD were prolonged storage and civil unrest during the Côte d'Ivoire post-election crisis. ODD continued to follow best practices for food management and ensure monthly inventory checks, which are mandatory in the region. Losses were mitigated through the monitoring of commodity shelf life and, when possible, the provision of loans between operations and countries to salvage stocks at risk of expiring. The planned training of trainers in warehouse and food management – to establish a pool of staff to develop capacity in their respective countries – was postponed until 2012 owing to lack of funding.

### **Regional Bureau Johannesburg (ODJ – Southern Africa)**

32. Rail transport was responsible for a high percentage of in-transit losses in the past and has been discontinued in the region. WFP-appointed superintendent companies conducted regular quality and quantity checks, ensuring that food commodities and packaging met WFP specifications. For example, ODJ purchased 20-litre hard plastic drums for vegetable oil arriving at the port of Durban. These drums are stronger than the plastic jerry cans and tin cartons generally used, and helped to minimize oil losses during inland transport. Road transporters' performance was monitored, and any losses were recorded on their quarterly performance evaluations.

### **Regional Bureau Nairobi (ODN – East and Central Africa)**

33. The most significant losses in this region occurred during transit. Other losses were due to infestation or deterioration during storage, and pilferage. Country offices improved vigilance on losses through better food management practices, monitoring of transporters' performance and regular warehouse visits. Burundi, DRC, Kenya, Rwanda and Uganda country offices held food management training for WFP staff, service providers, cooperating partners and government counterparts.
34. Greater focus on monitoring of expiry dates and on timely distribution strengthened the good stock rotation practices already in place. All losses attributable to partners and transporters were recovered.

## Regional Bureau Panama City (ODPC – Latin America and the Caribbean)

35. In ODPC, the following measures to reduce losses were implemented:

- Training in warehouse management and pest control, delivered by logistics staff to counterparts and small farmers in P4P projects, helped reduce post-harvest losses in Central America.
- In Ecuador, the distribution of family ration packages reduced losses in the food delivered to each family.
- In Colombia, repacking rice and fortified blended food in smaller packages facilitated distributions and prevented losses.
- Post-distribution processes were reviewed in countries where monitors had detected food diversions: Colombia, Ecuador, El Salvador, Guatemala, Haiti, Honduras and Nicaragua.
- Oversight missions were undertaken to ensure that country offices fulfil WFP regulations for supply chain and warehouse management. Recommendations for implementation in 2012 included:
  - ◇ improving records by using stack cards;
  - ◇ reducing infestation through fumigation; and
  - ◇ increasing efforts to recover damaged cargo.

## Regional Bureau Sudan (ODS)

36. Training in food management and handling augmented the capacity of WFP staff and partners. In addition, the following measures were undertaken:

- Regular compliance missions to field warehouses/hubs monitored and examined warehouse management and introduced best practices for food handling. Missions usually comprised logistics staff from different areas to maximize synergies and make the best use of existing expertise.
- One-off monitoring visits to contractors' transshipment points monitored food storage conditions and transshipment activities. Items for short-term storage, such as pallets, were provided to some contractors and partners. Quick on-site training on stacking and restacking/reconditioning brought immediate reductions in food losses.
- Contractual agreements include a clause addressing delivery and in-transit losses. Transporters face penalties for negligent transportation, and spoilage/contamination of cargo by water or fuel.
- Records of food being reconditioned or rebagged are included in relevant warehouse documents prior to uplift, such as waybills.

## LOSSES BY RECIPIENT COUNTRY

37. This paper includes analysis of losses in excess of predetermined thresholds in:

- i) countries registering losses of a single food type that are at least 2 percent of the tonnage handled of that food and that have an absolute value of at least US\$20,000; and
- ii) countries registering losses of a single food type that have an absolute value greater than US\$100,000.

38. In 2011, 23 projects in 18 countries recorded single losses in excess of these thresholds. Of these 18 countries, the largest losses were recorded in Pakistan (2,885.7 mt), Côte d'Ivoire (2,580.3 mt) and the Sudan (4,571.9 mt), which together accounted for more than 49 percent of total post-delivery losses in tonnage.
39. Annex III-A provides information on total losses for each country in 2011. Details of larger losses for the year are provided in Annex III-B and are discussed in the following paragraphs. The 18 countries that exceeded the thresholds were Afghanistan, Burundi, Central African Republic, Chad, Côte d'Ivoire, DRC, Ethiopia, Ghana, Haiti, Kenya, Malawi, Mauritania, Mozambique, Pakistan, Somalia, the Sudan, United Republic of Tanzania and Yemen.

## Afghanistan

40. In 2011, under protracted relief and recovery operation (PRRO) 200063, "Relief Food Assistance to Tackle Food Security Challenges", 411.8 mt of wheat was lost, accounting for 0.32 percent of the total received. Of this, 373 mt was lost through attacks on commercial truck convoys and diversions of food during delivery and distribution. Three commercial trucks and their loads were destroyed by fire, and insurgents diverted other food items. To reduce losses and ensure safe passage, convoys are organized with government security forces and local councils or *shuras*.
41. Overall losses by cooperating partners were 0.07 percent of the total wheat handled, but most were outside the partner's control. Losses due to poor handling and poor packaging material accounted for less than 0.01 percent of total tonnage handled. This low level of losses could be attributed to training of cooperating partners and improvements in product packaging.
42. Losses during transit where the transporter was at fault were recovered by deducting the value from the transporter's invoice. WFP warehouse staff are undergoing training to enhance warehousing procedures and practices, which will be disseminated to cooperating partners.

## Burundi

43. Country programme 200119 (2011–2014) lost 142.17 mt of oil during 2011, of which 142.13 mt was sold following quality deterioration due to long storage; the remaining 0.04 mt was lost in the WFP warehouse, owing to deterioration of packaging material (0.035 mt) and sampling for analysis (0.005 mt).
44. This oil was received in June–July 2009 under PRRO 105281, "Support to the Stabilization and Recovery of Burundi". In total, 209.2 mt of food was received with February 2011 as its "best-used-before" (BUB) date. The Burundi country office also received 4,303 mt of oil with a similar BUB date for most of the tonnage. About 50 percent of this – 2,094.9 mt, including stock held by cooperating partners – was carried over to 2010.
45. At the end of 2010, the remaining balance of 1,085.2 mt was carried over to 2011 and transferred to another project, but the expiry date had passed before it could all be consumed. Results from samples sent to laboratories in South Africa and Burundi demonstrated that the oil was unfit for human or animal consumption, and 142.1 mt was sold to a local factory for soap production.

46. Several constraints were encountered while resolving this situation. Neighbouring countries also had significant stocks of vegetable oil at the time, so the potential for loans was limited. Donor restrictions regarding loans and repayments exacerbated the situation. The following mitigation measures were put in place:

- Daily stock reports include the BUB date, which is visible on all stock reports.
- Oil purchases were reduced and priority was given to using the stocks available in country.
- The possibilities for loans and borrowing among projects are monitored to allow optimal rotation of food stocks.
- Training of all stock management staff, including of cooperating partners and WFP, was planned for the first half of 2012.

### Central African Republic

47. Prolonged storage was the main cause of the losses of 96.7 mt of CSB received in 2010 for the development project. As the country office had limited capacity to absorb this quantity in a single activity, the CSB reached its expiry date and could not be distributed. After analysis by the government health agent, the CSB was declared unfit for human and animal consumption and the only option was to destroy it.

48. The other losses were due to poor handling during distribution by the cooperating partner, and short delivery by the transporter. The value of losses during internal transport was deducted from the transporter's invoice. Mitigation measures include training and sensitization of cooperating partners. Country office programme and logistics staff will collaborate on the planning of food purchases, paying attention to batches, activities and donor expectations.

### Chad

49. Poor handling, pilferage and theft while under the responsibility of cooperating partners were the main causes of the loss of 41.5 mt of rice under PRRO 200059 "Assistance to Central African Republic Refugees and Host Population in Chad". Meetings with cooperating partners and UNHCR aimed to ensure that only trained staff carry out distributions and that security and control measures are reinforced. Following advocacy, UNHCR now includes more distribution staff in its agreements with partners.

50. Under emergency operation (EMOP) 200112, "Emergency Food Assistance to Drought-Affected Population in Chad", 139.9 mt of beans regionally purchased on free-carrier terms was lost. The procurement unit put strategies in place to ensure proper quality control on delivery of goods to WFP, including additional cautionary measures for purchases during the rainy season and the contracting of a superintendent.

51. Disciplinary action was taken against the cooperating partner staff involved in pilferage and theft of 19.3 mt of vegetable oil at extended delivery points, and security and control measures were reinforced. The value of 12.1 mt of oil lost to pilferage and theft at distribution sites was deducted from cooperating partners' invoices. A loss of 13.5 mt of oil was due to deterioration of the packaging material. In addition to refresher training in warehouse management, measures were put in place to ensure more timely reconditioning of damaged cargo.

## Côte d'Ivoire

52. The post-election crisis resulted in all-out war in March 2011. During the battle to control Abidjan, WFP's warehouse in the Kumasi industrial area was looted and destroyed. The resulting loss of 2,339 mt of food represented about 91 percent of Côte d'Ivoire's total losses for 2011.
53. During the looting, the walls and roof of the warehouse were damaged, resulting in rain destroying a further 203.6 mt of food, about 8 percent of total losses.
54. As corrective measures, WFP Côte d'Ivoire terminated the lease of the warehouse and moved to a new and better-secured facility near the logistics base of the United Nations peacekeeping mission in Côte d'Ivoire. A strategy for pre-positioning food in the west of the country aims to avoid holding significant stocks in Abidjan. Losses during internal transport represent 0.18 percent of the total. Mitigation measures focus on recovering the cost, insurance and freight values from transporters' invoices and increasing transporters' awareness of this WFP policy.

## Democratic Republic of the Congo (DRC)

55. Transport losses in DRC are generally due to long transit times: transport by river can take up to four months. Transport losses were 46 percent lower in 2011 than 2010 because of improved secondary roads; their value was deducted from transporters' invoices. Transporters with repeated losses are recorded, and excluded from future contracts.
56. A significant loss of maize meal purchased in the region was mainly due to a long transit time, delaying delivery to DRC and thus reducing the product's shelf life. Losses sustained on locally purchased pulses were due to poor quality, discovered by a quality-control laboratory. Suppliers are required to replace food of sub-optimal quality, and closer follow-up on deliveries has been put in place.
57. Area offices conducted training on warehouse and stock management for WFP and cooperating partners' staff, to ensure appropriate and timely practices such as fumigation, cleanliness, good accounting and stock inspection.

## Ethiopia

58. Under PRRO 106650 "Responding to Humanitarian Crises and Enhancing Resilience to Food Insecurity", post-delivery losses of 381 mt of wheat valued at US\$135,344 accounted for 0.16 percent of wheat handled; losses of 142 mt of vegetable oil valued at US\$173,240 accounted for 0.59 percent of vegetable oil handled.
59. Unauthorized distribution in the insecure Somali region of southern Ethiopia accounted for 60 percent of wheat losses; theft in the Somali and Afar regions accounted for 28 percent. Conflict in the Southern Nations, Nationalities and Peoples region and flooding in Oromia region accounted for the remaining losses.
60. Losses in the Somali region have decreased since WFP launched the hubs and spokes operation in 2008, delivering food directly to food distribution points, and assigning monitoring and evaluation responsibilities – including review of losses such as unauthorized distributions and food for payment – to joint WFP–Government hubs and spokes committees. Losses in this region declined by two thirds between 2010 and 2011.
61. Losses of vegetable oil resulted from internal transport (13 mt), storage at WFP and cooperating partners' warehouses (11.6 mt), and spoilage (70.8 mt), when oil that had not been utilized by school feeding programmes in 2010 was transferred to the relief

programme for distribution, but could not be dispatched before its expiry date. Laboratory testing deemed it unfit for consumption, and the full quantity was sold to soap factories.

62. The 14.5 mt of dates reported lost under country programme 104300 was found after further investigation in early 2012; the dates were recovered and distributed.

## Ghana

63. The value of transport losses of 9.1 mt was deducted from transporters' invoices. Transporters were urged to take better care of their vehicles to avoid such losses in the future.
64. Another 99.9 mt of losses was mainly due to overlong storage of locally purchased cereals and beans under the country programme. All government storekeepers received refresher training on warehouse management, and beans will be purchased internationally from now on as local varieties cannot be stored for long periods.
65. Losses of 18 mt were due to leakage/spillage. Proper stacking and stock maintenance were emphasized during warehouse management refresher training for government storekeepers.
66. Losses due to theft from the government counterpart's warehouse were 13.7 mt. This case is still in court, and the country office is following up with the authorities to ensure enhanced security measures. A loss of 0.05 mt was due to sampling by the Government at the port.

## Haiti

67. Warehouse losses were due to infestation while under WFP and cooperating partners' custody and to the expiry of commodities with short shelf life, including HEB, CSB and meals ready-to-eat. In coordination with pipeline staff, a policy was established for ordering such commodities in smaller quantities to avoid expiry or infestation. Spoiled commodities deemed fit for animal consumption were sold to farmers.
68. Other losses, resulting from the diversion or short delivery of truckloads, were recovered from the transporters involved, which were subsequently removed from WFP's shortlist of service providers. Regular meetings with current transporters aim to sensitize them to these issues and avoid similar cases in the future.
69. Further mitigation measures included warehouse management training for WFP logistics and programme staff and cooperating partners. Control measures were strengthened at warehouses, and verification of the moisture content is now mandatory at both loading and discharging.

## Kenya

70. In 2011, total post-delivery losses in Kenya were 973.5 mt of a total tonnage handled of 464,962 mt.
71. Transit losses amounted to 455.3 mt, or 47 percent of total losses. The value of lost commodities was deducted from contractors' invoices.
72. Additional mitigation measures included:
- maintaining records on losses and evaluating contractors' performance for future contracts;
  - informing the Government and major donors about poor road conditions; and



- using longer and/or safer routes, which increase transport costs but reduce losses.
73. Another 152 mt of losses – 16 percent of the total – was due to differences between the weight registered at the point of loading and the weight established at the delivery point. Most of these variances concerned local and regional purchases; 84 percent of them were maize grain. Mitigation actions included the following:
- The importance of accurate quality and quantity control at the hand-over from seller to buyer was emphasized with the procurement unit and country office management.
  - Country office and regional bureau procurement staff attended a workshop to discuss actions for minimizing these losses.
  - Logistics staff at Headquarters were asked for best practices and guidance on how to deal with such losses.
74. Another 113 mt, or 12 percent, of losses was due to poor handling at WFP and cooperating partners' warehouses, and at health facilities and schools run by the Government. Mitigation actions included commodity management training for cooperating partner staff.
75. Overlong storage led to losses of 83 mt, 9 percent of the total. Of this, 72 mt (86 percent) affected a case of CSB with mixed or lacking expiry dates. Mitigation actions included:
- ensuring that packages with different expiry dates are not packed together;
  - checking that the expiry dates on packages match those provided on cargo/shipping documents;
  - ensuring that the expiry date or crop year is printed on all packages; and
  - including public health officers in WFP training on commodity management.
76. In June 2011, the logistics unit organized a training-of-trainers session in Mombasa, where 22 WFP logistics staff from all over Kenya received training in commodity and warehouse management. These new trainers went on to train 91 participants from cooperating partners, WFP and the Government, including public health officers, school meals programme officers and district nutritionists.
77. Further training sessions are planned for 2012 to cover all field offices. WFP will work with the Chief Public Health Officer to maintain government officials' conformity to WFP commodity management practices.

## Malawi

78. In addition to small losses resulting from the deterioration of packaging, short deliveries and water damage, 73 mt of vegetable oil expired in the warehouse owing to slow consumption rates under PRRO 105860 "[Assistance to Food-Insecure People Suffering from the Effects of Natural Disasters and HIV/AIDS](#)". Staff reprogrammed the oil for utilization under development project 105810 "Support to Education", but not all of it was consumed in time. The spoiled oil was sold to a soap manufacturing company.

79. Following a stock management review, the country office is putting the following measures in place:
- To avoid expiry due to slow consumption, best-before dates are to be marked, and stocks approaching their expiry date will be flagged, on a weekly basis.
  - To prevent deterioration of packaging materials, warehouses must adhere to standard stacking heights, and all packaging materials should meet WFP standards. All items should be thoroughly inspected on receipt and cartons that show signs of leaking must be reinforced. Items in damaged packages must be repacked before storage or dispatch.
  - To prevent short deliveries, a tally clerk, a storekeeper and the driver are expected to be present during loading, to identify any miscalculations or miscounting. More regular and frequent monitoring of transporters' performance records has been instituted. Transporters should have secure vehicles and trailers and should not travel by night, to avoid in-transit thefts. Loading plans must ensure that truck capacity is maximized, and that small loads, which can slip during movement, are not loaded on to empty trucks.
  - Warehouse staff have been sensitized to the importance of identifying leaks in storage facilities and arranging immediate repairs, covering stacks with plastic sheets until repairs are completed.

## **Mauritania**

80. In Mauritania, WFP and government food stocks are stored together in government warehouses managed by government staff. This results in management and tracking challenges for WFP. Warehouse and commodity management best practices are not always adhered to, leading to frequent contamination of commodities, which was the primary cause of WFP's losses in 2011.
81. The other major cause of losses was long storage periods for food under country programme 102090. Further challenges included bad handling and transport conditions, and complex and lengthy procedures for disposing of spoiled commodities, which requires government authorization. The resulting delays create a high risk of contamination of sound stocks.
82. To mitigate losses, the country office provided training for storekeepers, and WFP logistics staff inspected government warehouses more frequently. Spoiled commodities awaiting authorization of disposal are now held in a dedicated store.
83. Other mitigation measures implemented by the country office include better handling procedures, sensitization of transporters, and deduction of the value of lost commodities from transporters' invoices.

## **Mozambique**

84. Of 401 mt of maize reported lost in 2011, 56 mt was stolen from the cooperating partner's warehouse, 331.8 mt was lost during the milling process and 14 mt during transport. All commodities lost by the cooperating partner or transporters were fully recovered from their invoices. Both parties were instructed to improve practices to avoid future losses.

85. Most milling losses were incurred because refugee camps and schools lack milling facilities so WFP has to convert its stocks of maize into maize meal prior to delivery to final delivery points. WFP will evaluate the possibility of procuring maize meal directly, taking into consideration the shelf life, commodity availability and other requirements.

## **Pakistan**

86. Wheat losses resulted from necessary cleaning procedures and, at 1.4 percent, fall within nationally acceptable standards. Such losses occur regularly in Pakistan, where a proportion of foreign material – stones, soil, etc. – in locally procured wheat contents is deemed acceptable. Wheat flour losses, which were also extremely low, occurred during rebagging and warehouse and transport activities. Most of the sugar loss recorded in 2011 referred to the disposal of sugar lost during the 2010 flood damage in Khyber-Pakhtunkhwa province. The actual sugar loss in 2011 was a negligible 0.068 mt due to rebagging. As mitigating measures, WFP logistics staff have improved warehouse management procedures and provided training in commodity handling.

## **Somalia**

87. In 2011, 119.9 mt of sugar was lost under EMOP 200281 “Tackling Hunger and Food Insecurity in Somalia”, accounting for 68.6 percent of the sugar handled. Intense fighting and a continuously changing security situation in Mogadishu reduced sugar distributions to 2.2 mt per month, and forced WFP to move its sugar stocks among several warehouses in the vicinity. This caused deterioration of the packaging and the sugar, which was shipped to Berbera as there was greater demand in other parts of Somalia. However, on arrival in Berbera laboratory tests revealed that the sugar was unfit for human consumption and the remaining consignment was destroyed.
88. Actions taken to mitigate losses included keeping security bonds equivalent to the value of the food being transported by contractors; full recovery of the value of food lost while under the responsibility of contractors; improved monitoring of expiry dates; and sensitization of cooperating partners on the handling of food commodities.

## **The Sudan**

89. Following deterioration of the security situation in border areas between the Sudan and South Sudan, particularly in South Kordofan, clashes resulted in the theft of 436 mt of food from cooperating partners’ warehouses under EMOP 200151 “Food Assistance to Vulnerable Populations Affected by Conflict and Recurring Natural Disasters”. Another 160 mt of food was stolen from cooperating partners’ warehouses in Darfur.
90. In Darfur, WFP-contracted transporters moving food from the main hubs to extended delivery points (EDPs) require military escorts from the Government of the Sudan, and transit is often delayed while transporters wait for escorts to become available. This delay can lead to infestation or expiry of commodities. In 2011, 79 mt of food was infested and damaged during transport and had to be disposed of. Transporters going to remote areas of Darfur have to carry spare fuel with the food; leaked fuel led to the contamination of 420 mt of food, which was disposed of from warehouses. About 2 mt of CSB and sugar was lost during the blending of commodities (transformation) in Darfur.
91. Other losses were related to short shelf lives; incomplete documentation of consignments on arrival at port, prolonging clearance times; and the inadequate capacity of some partners to handle commodities.

92. The value of all transit losses was recovered from transporters' invoices. WFP management alerted the Government of the Sudan to the escort issues and their negative implications for beneficiaries and WFP operations. As a result, contractual agreements now include clauses addressing delivery and in-transit losses. Transporters are penalized for negligent transportation and the spoilage/contamination of cargo by water and fuel.
93. The country office met donors to address the problems arising from incomplete documentation of consignments and to draw donors' attention to government requirements for specific commodities. Further corrective measures included compliance missions to field warehouses and hubs to monitor warehouse management and introduce best practices for food handling, and training in commodity management and handling for cooperating partners, to enhance their commodity management and tracking skills.

### **United Republic of Tanzania**

94. The 2011 loss of 135 mt of mixed beans under country programme 104370 was due mainly to the poor condition and quality of the delivery. In 2009, WFP's regional procurement office in Kampala purchased 142 mt of beans from a Kigali-based supplier. The WFP superintendent inspected the beans at delivery, indicated that they did not conform to quality specifications, and recommended further cleaning by the supplier. After cleaning, the superintendent accepted the beans and the delivery was received at Kigoma. From Kigoma, the beans were sent to the EDPs of Dodoma and Arusha, where they were reported to have an abnormal odour, a high percentage of foreign matter, and a shrivelled, discoloured appearance. A sample of the beans was forwarded to government chemists, which found that the mixed beans loaded at Kigoma for Dodoma and Arusha were unfit for human consumption. The superintendent re-sorted the beans at its own cost, but subsequent test results still showed the beans to be unfit for human consumption.
95. WFP's efforts to recover the value of the commodity from the superintendent have been delayed by complications regarding the superintendent's legal liability.

### **Yemen**

96. A loss of 90.9 mt of wheat flour was due to looting and/or short deliveries sustained during transportation to the final destination, and is deductible from the transporters. Losses of 31.4 mt occurred in warehouses, mainly due to looting in WFP warehouses in Malaheed (30 mt) in Sa'ada Governorate. Another 28.3 mt were distribution losses.
97. The country office's strategies for mitigating losses include careful selection of transporters and assessment of delivery routes before using risk-prone corridors. WFP provided warehouse management training to its staff and partners. The country office plans to recruit a quality control manager to enforce and improve these mitigation measures.

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## **FOLLOW-UP ON LOSSES UNDER VERIFICATION FROM PREVIOUS REPORTING PERIODS**

### **Senegal**

98. Under country programme 104510, losses of 0.4 mt of salt, 1.8 mt of oil and 4.5 mt of pulses were the result of theft in a warehouse in Kahène, Tambacounda; those responsible were prosecuted and jailed.
99. A loss of 4.8 mt of maize under PRRO 106120 "Post-Conflict Rehabilitation in the Casamance Naturelle", was part of the total losses reported by partners: 10.5 mt reported

by the Ministry of Education, and 1.4 mt by other partners. After investigation, WFP discontinued assistance to school feeding programmes that no longer met its criteria for storage, the role of food management committees and the involvement of rural communities.

## **Mali**

100. In 2010, WFP incurred a loss of 62.8 mt of oil resulting from misappropriation and mismanagement by government-employed storekeepers at warehouses. WFP's mitigation measures included seeking compensation from the Government, which has reimbursed the full value of the losses.

## **Yemen**

101. Having sought compensation for losses from the Government, the country office has not received a response, partly because political instability and civil unrest resulted in a complete change of Government. WFP has increased its oversight, changed the procedure for selecting transporters, and stepped up the monitoring of convoy movements, including by identifying alternative supply routes, particularly for delivery to problematic governorates.

102. The country office has enhanced warehouse management practices and provided warehouse management training to its own and partners' staff. A quality control manager will be recruited in view of the expected scale-up of WFP's operations in Yemen.

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## **LOSSES UNDER VERIFICATION**

### **Eritrea**

103. Of the food delivered by WFP to the Government of Eritrea in 2005, 64,538 mt with an estimated value in 2005 of US\$31 million remains unaccounted for. WFP reports this food as "advance stock", but has not received distribution reports from the Government so is unable to determine whether the food was distributed to the intended beneficiaries. WFP wishes to recover the value of any food not utilized in compliance with Eritrea's contractual obligations, and will continue to seek a solution.

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## **LOSSES CURRENTLY UNDER VERIFICATION, FOR FOLLOW-UP IN FUTURE REPORTS**

104. Losses are currently under investigation in Egypt, Haiti, Senegal and Tunisia. An update on the verification of these losses will be provided in future reports.

**ANNEX I**

<b>LOSSES BY REASON</b>		
<b>Reason for loss</b>	<b>Value (US\$)</b>	<b>% of total</b>
Broken during loading	3 832	0.03
Deterioration of food commodities mainly attributable to problems at origin	55 764	0.42
Deterioration of packaging materials	884 398	6.69
Flooding and other natural disasters	971 510	7.35
Improper/overlong storage	1 296 967	9.81
Inadequate transport	214 823	1.63
Infestation	977 470	7.40
Loss due to fire	83 217	0.63
Loss due to sampling food analysis	13 110	0.10
Loss during civil strife	444 472	3.36
Pilferage/theft	3 061 208	23.16
Poor handling	731 134	5.53
Processing/transformation of commodity	128 855	0.97
Reconstitution/rebagging/repacking	810 754	6.13
Short-delivered	1 989 429	15.05
Unauthorized distribution	140 652	1.06
Variance by weight	122 054	0.92
Wet by gas oil	116 017	0.88
Wet by water	1 172 023	8.87
<b>TOTAL</b>	<b>13 217 691</b>	<b>100</b>

## ANNEX II

LOSSES BY COMMODITY				
Commodity code	Commodity	Total handled* (US\$)	Post-delivery losses (US\$)	Losses in US\$ as percentage of total handled*
BEVTEA	Black tea	1 962 926	3 527	0.18
CERMAZ	Maize	208 444 345	519 036	0.25
CERMMF	Soya-fortified maize meal	1 245 555	1 406	0.11
CERMML	Maize meal	129 679 667	1 084 504	0.84
CERPAS	Pasta	6 797 613	17 559	0.26
CERRIC	Rice	250 315 644	1 492 293	0.60
CERSOR	Sorghum/millet	215 148 361	1 017 755	0.47
CERWBG	Bulgur wheat	28 024 630	58 790	0.21
CERWHE	Wheat	460 506 388	1 474 326	0.32
CERWHF	Wheat flour	159 086 813	534 254	0.34
DAICHE	Cheese	490 430	1 179	0.24
DAIDSP	Plain dried skimmed milk	23 834 379	27 479	0.12
DAIUHT	UHT milk	2 341 193	-	0.00
FRUDFR	Dried fruits	12 821 705	50 746	0.40
FSHCFI	Canned fish	4 959 088	4 325	0.09
MEAMEA	Canned meat	508 404	-	0.00
MIXBIS	Biscuits	1 568 383	81	0.01
MIXBP5	BP5 emergency rations	1 526 300	1 811	0.12
MIXCSB	Corn-soya blend (CSB)	246 069 711	916 193	0.37
MIXCSBFAF	Faffa	37 382 471	50 271	0.13
MIXCSBVIT	Vitacereal	529 874	-	0.00
MIXCSM	Corn-soya milk (CSM)	11 455	2 752	24.02
MIXHEB	High-energy biscuits	84 700 725	354 452	0.42
MIXHES	High-energy supplements	1 046 113	473	0.05
MIXRSB	Rice-soya blend	493 360	110	0.02
MIXRSF	Ready-to-use supplementary food	82 011 923	187 912	0.23
MIXWSB	Wheat-soya blend (WSB)	27 164 160	82 046	0.30
MIXWSBIND	Indiamix	781 464	-	0.00
MSCMNP	Micronutrient powder	1 801 633	1 015	0.06
MSCSAL	Iodized salt	5 464 779	29 153	0.53
OILBUT	Butter oil	313 954	233	0.07
OILGHE	Ghee	124 496	1	0.00
OILVEG	Vegetable oil	370 349 728	2 092 960	0.57
PPFRTN	Pre-packaged food rations	7 975 856	565 537	7.09

<b>LOSSES BY COMMODITY</b>				
<b>Commodity code</b>	<b>Commodity</b>	<b>Total handled* (US\$)</b>	<b>Post-delivery losses (US\$)</b>	<b>Losses in US\$ as percentage of total handled*</b>
PULBEA	Beans	99 257 681	1 210 733	1.22
PULCKP	Chickpeas	6 716 841	8 460	0.13
PULCPU	Canned pulses	81 455	-	0.00
PULCVE	Canned vegetables	1 843 550	7 428	0.40
PULLEN	Lentils	17 931 100	46 159	0.26
PULPEA	Peas	15 653 708	45 347	0.29
PULSLN	Split lentils	56 157	-	0.00
PULSPE	Split peas	163 145 668	703 160	0.43
TUBCAF	Cassava flour	8 372	-	0.00
<b>TOTAL</b>		<b>2 734 427 882</b>	<b>13 217 691</b>	<b>0.48</b>

\* Opening stocks in the recipient country plus food received in the recipient country



## ANNEX III-A

QUANTITIES AND VALUES BY RECIPIENT COUNTRY						
Region	Recipient country	Total handled*		Post-delivery losses		
		Net mt	US\$	Net mt	US\$	Losses in US\$ as percentage of total handled*
<b>ODB</b>	Afghanistan	197 044	122 159 683	514.3	246 699	0.20
	Bangladesh	76 454	29 273 907	16.3	10 784	0.04
	Bhutan	3 324	1 681 814	1.6	878	0.05
	Cambodia	32 287	18 310 928	18.4	12 666	0.07
	Democratic People's Republic of Korea	97 002	56 795 223	21.2	24 373	0.04
	India	43 450	4 515 135	0.0	0	0.00
	Indonesia	5 799	4 514 873	2.4	1 232	0.03
	Japan	50	63 618	0.0	0	0.00
	Lao People's Democratic Republic	9 647	7 239 144	0.2	269	0.00
	Myanmar	39 247	21 201 249	33.8	17 583	0.08
	Nepal	46 951	28 461 031	53.7	39 983	0.14
	Pakistan	497 687	282 568 336	2 885.7	1 338 643	0.47
	Philippines	32 270	21 423 510	20.1	11 919	0.06
	Sri Lanka	44 739	23 977 143	90.2	52 900	0.22
	Timor-Leste	5 301	3 793 642	17.5	12 129	0.32
<b>ODB total</b>		<b>1 131 253</b>	<b>625 979 237</b>	<b>3 675.6</b>	<b>1 770 058</b>	<b>0.28</b>
<b>ODC</b>	Algeria	27 916	16 341 159	79.2	44 668	0.27
	Armenia	5 392	4 352 414	0.3	185	0.00
	Egypt	12 691	9 285 431	14.4	7 065	0.08
	Georgia	240	104 837	1.1	483	0.46
	Iran, Islamic Republic of	6 982	4 161 426	7.8	5 077	0.12
	Iraq	3 770	5 561 211	0.9	775	0.01
	Kyrgyzstan	25 307	15 073 933	2.6	1 440	0.01
	Libya	30 215	24 331 899	31.9	29 805	0.12
	Occupied Palestinian Territory	73 303	40 954 189	161.6	67 550	0.16
	Syrian Arab Republic	48 163	25 973 124	12.9	7 728	0.03
	Tajikistan	16 868	10 722 807	0.4	216	0.00
	Tunisia	4 618	3 360 719	45.5	34 925	1.04
	Yemen	102 385	75 734 145	395.6	256 161	0.34
<b>ODC total</b>		<b>357 851</b>	<b>235 957 294</b>	<b>754.3</b>	<b>456 080</b>	<b>0.19</b>

QUANTITIES AND VALUES BY RECIPIENT COUNTRY						
		Total handled*		Post-delivery losses		
Region	Recipient country	Net mt	US\$	Net mt	US\$	Losses in US\$ as percentage of total handled*
<b>ODD</b>	Benin	10 814	5 635 689	0.5	256	0.00
	Burkina Faso	17 221	14 631 397	11.6	15 055	0.10
	Cameroon	18 543	11 250 475	143.6	82 060	0.73
	Central African Republic	17 573	14 677 890	150.6	122 785	0.84
	Chad	145 028	144 581 934	628.3	759 628	0.53
	Côte d'Ivoire	33 860	24 101 887	2 580.3	1 528 022	6.34
	Gambia	4 903	2 700 404	6.6	3 843	0.14
	Ghana	17 805	11 100 030	141.0	99 055	0.89
	Guinea	16 922	8 973 940	80.2	50 696	0.56
	Guinea-Bissau	8 187	5 251 025	8.7	5 239	0.10
	Liberia	33 795	23 266 817	56.4	38 967	0.17
	Mali	17 731	9 840 779	11.3	13 213	0.13
	Mauritania	13 727	8 611 508	61.0	42 598	0.49
	Niger	85 360	67 980 741	87.0	65 023	0.10
	S. Tome and Principe	1 137	801 156	1.8	1 735	0.22
	Sierra Leone	20 494	12 603 033	14.1	9 558	0.08
	Togo	1 267	749 497	7.1	5 995	0.80
<b>ODD total</b>		<b>482 494</b>	<b>376 231 843</b>	<b>4 058.6</b>	<b>2 877 058</b>	<b>0.76</b>
<b>ODJ</b>	Lesotho	9 655	4 590 992	8.6	5 002	0.11
	Madagascar	30 832	13 192 358	82.3	34 218	0.26
	Malawi	33 546	19 053 731	89.9	80 645	0.42
	Mozambique	55 412	24 585 261	443.8	163 228	0.66
	Namibia	1 371	896 103	2.3	1 314	0.15
	Swaziland	4 872	2 071 091	7.1	7 835	0.38
	Zambia	15 449	8 868 372	33.8	22 241	0.25
	Zimbabwe	84 135	47 742 631	64.2	36 121	0.08
<b>ODJ total</b>		<b>235 273</b>	<b>121 000 539</b>	<b>732.0</b>	<b>350 605</b>	<b>0.29</b>
<b>ODN</b>	Burundi	28 347	16 846 782	190.5	226 046	1.34
	Congo	11 444	9 699 971	94.3	63 279	0.65
	Democratic Republic of the Congo	106 626	97 140 618	1 211.7	1 005 229	1.03
	Djibouti	16 101	10 547 131	51.7	36 976	0.35
	Ethiopia	724 496	400 936 311	1 190.5	774 348	0.19
	Kenya	420 744	254 050 379	973.6	567 458	0.22
	Rwanda	22 832	16 340 499	139.5	112 519	0.69

QUANTITIES AND VALUES BY RECIPIENT COUNTRY						
		Total handled*		Post-delivery losses		
Region	Recipient country	Net mt	US\$	Net mt	US\$	Losses in US\$ as percentage of total handled*
	Somalia	130 148	83 817 971	314.5	227 337	0.27
	South Sudan	14 943	5 437 252	1.0	371	0.01
	Uganda	47 057	24 103 358	57.3	25 735	0.11
	United Republic of Tanzania	75 097	34 657 388	331.2	199 411	0.58
<b>ODN total</b>		<b>1 597 834</b>	<b>953 577 660</b>	<b>4 555.6</b>	<b>3 238 709</b>	<b>0.34</b>
<b>ODPC</b>	Bolivia, Plurinational State of	5 224	4 166 039	4.3	3 672	0.09
	Colombia	24 842	18 600 190	98.8	64 517	0.35
	Cuba	1 342	639 851	0.5	248	0.04
	Ecuador	1 915	1 688 858	8.0	5 344	0.32
	El Salvador	2 279	1 665 101	0.0	0	0.00
	Guatemala	12 033	8 685 593	19.2	18 569	0.21
	Haiti	106 885	98 421 659	1 878.7	2 186 775	2.22
	Honduras	14 635	10 874 441	1.4	981	0.01
	Nicaragua	8 744	7 263 108	11.8	12 690	0.17
<b>ODPC total</b>		<b>177 899</b>	<b>152 004 840</b>	<b>2 022.7</b>	<b>2 292 797</b>	<b>1.51</b>
<b>ODS</b>	Sudan	535 368	269 676 469	4 571.9	2 232 384	0.83
<b>ODS total</b>		<b>535 368</b>	<b>269 676 469</b>	<b>4 571.9</b>	<b>2 232 384</b>	<b>0.83</b>
<b>TOTAL</b>		<b>4 517 972</b>	<b>2 734 427 882</b>	<b>20 370.7</b>	<b>13 217 691</b>	<b>0.48</b>

\* Opening stocks in recipient country plus food received in the recipient country

**COMMODITIES WITH POST-DELIVERY LOSSES  
GREATER THAN 2 PERCENT IN TONNAGE AND VALUE OVER US\$20,000 OR VALUE GREATER THAN US\$100,000**

Region	Recipient country	Work Breakdown Structure element	Food	Total handled* (net mt)	Total handled* (US\$)	Post-delivery losses (net mt)	Post-delivery losses (US\$)	Losses in mt as percentage of total handled*
ODB	Afghanistan	200063.1	CERWHE	129 325	36 161 961	411.8	115 146	0.32
ODB	Pakistan	200145.1	CERWHE	111 078	33 786 609	1 553.6	472 561	1.40
ODB	Pakistan	200145.1	CERWHF	100 714	29 491 049	423.4	123 990	0.42
ODB	Pakistan	200145.1	MSCSUG	1 391	1 244 742	426.8	382 087	30.70
ODC	Yemen	200039.1	CERWHF	44 842	30 753 301	150.6	103 268	0.34
ODD	Central African Republic	103610.1	MIXCSB	855	703 881	96.7	79 604	11.31
ODD	Chad	200059.1	CERRIC	1 998	2 183 680	41.5	45 394	2.08
ODD	Chad	200112.1	OILVEG	3 098	5 842 566	55.7	105 104	1.80
ODD	Chad	200112.1	PULBEA	1 306	1 369 541	141.9	148 787	10.86
ODD	Côte d'Ivoire	106720.1	CERMML	1 308	462 525	394.3	139 391	30.14
ODD	Côte d'Ivoire	106720.1	CERRIC	1 833	917 819	57.4	28 719	3.13
ODD	Côte d'Ivoire	106720.1	MIXCSB	497	317 715	62.6	40 001	12.59
ODD	Côte d'Ivoire	106720.1	OILVEG	366	478 413	42.4	55 445	11.59
ODD	Côte d'Ivoire	106720.1	PULSPE	1 290	643 745	124.4	62 098	9.65
ODD	Côte d'Ivoire	107590.1	CERRIC	2 372	1 149 217	1 167.8	565 750	49.23
ODD	Côte d'Ivoire	107590.1	OILVEG	318	415 522	317.5	415 522	100.00
ODD	Côte d'Ivoire	107590.1	PULSPE	631	314 766	155.2	77 487	24.62
ODD	Ghana	200046.1	PULBEA	955	755 843	73.7	58 311	7.71
ODD	Mauritania	102090.1.C2	CERWHE	721	513 504	35.9	25 567	4.98
ODJ	Malawi	105810.1	OILVEG	780	936 973	20.2	24 294	2.59



**COMMODITIES WITH POST-DELIVERY LOSSES  
GREATER THAN 2 PERCENT IN TONNAGE AND VALUE OVER US\$20,000 OR VALUE GREATER THAN US\$100,000**

Region	Recipient country	Work Breakdown Structure element	Food	Total handled* (net mt)	Total handled* (US\$)	Post-delivery losses (net mt)	Post-delivery losses (US\$)	Losses in mt as percentage of total handled*
ODJ	Malawi	105860.1	OILVEG	1 331	1 287 170	49.6	47 931	3.72
ODJ	Mozambique	106000.1	CERMAZ	35 411	11 698 433	401.8	132 723	1.13
ODN	Burundi	200119.1.C1	OILVEG	428	568 681	142.2	188 846	33.21
ODN	Democratic Republic of the Congo	200167.1	CERMML	59 527	47 308 278	772.8	614 169	1.30
ODN	Democratic Republic of the Congo	200167.1	PULBEA	1 928	1 418 429	248.9	183 066	12.91
ODN	Ethiopia	106650.1	CERWHE	483 996	243 329 008	758.3	381 250	0.16
ODN	Ethiopia	106650.1	OILVEG	16 065	23 819 464	95.6	141 709	0.59
ODN	Ethiopia	104300.1.C2	FRUDFR	287	816 107	14.5	41 064	5.03
ODN	Kenya	106660.1	CERMAZ	91 546	49 405 634	200.0	107 925	0.22
ODN	Somalia	200281.1	MSCSUG	175	141 437	119.9	97 143	68.68
ODN	United Republic of Tanzania	104370.1.C2	PULBEA	379	259 307	135.1	92 545	35.69
ODPC	Haiti	108440.1	CERMML	316	331 010	67.0	70 104	21.18
ODPC	Haiti	108440.1	CERRIC	45 798	32 406 164	409.5	289 782	0.89
ODPC	Haiti	108440.1	MIXHEB	2 451	5 944 158	116.2	281 887	4.74
ODPC	Haiti	108440.1	PPFRTN	834	6 116 098	73.4	538 431	8.80
ODPC	Haiti	108440.1	PULBEA	17 315	16 096 180	333.1	309 619	1.92
ODPC	Haiti	200110.1	CERRIC	42 876	20 625 396	364.7	175 421	0.85
ODPC	Haiti	200110.1	MIXCSB	5 575	2 669 815	197.7	94 688	3.55
ODS	Sudan	200151.1	CERSOR	291 767	96 656 602	2 842.6	941 680	0.97
ODS	Sudan	200151.1	CERWHE	57 984	35 586 566	704.0	432 042	1.21



**COMMODITIES WITH POST-DELIVERY LOSSES  
GREATER THAN 2 PERCENT IN TONNAGE AND VALUE OVER US\$20,000 OR VALUE GREATER THAN US\$100,000**

Region	Recipient country	Work Breakdown Structure element	Food	Total handled* (net mt)	Total handled* (US\$)	Post-delivery losses (net mt)	Post-delivery losses (US\$)	Losses in mt as percentage of total handled*
ODS	Sudan	200151.1	MIXCSB	23 551	14 789 375	171.9	107 942	0.73
ODS	Sudan	200151.1	OILVEG	16 474	24 157 010	178.3	261 511	1.08
ODS	Sudan	200151.1	PULBEA	12 756	11 588 037	162.4	147 575	1.27
ODS	Sudan	200151.1	PULLEN	1 210	1 105 042	33.8	30 869	2.79
ODS	Sudan	200151.1	PULSPE	21 605	12 319 767	315.7	180 052	1.46
<b>TOTAL</b>				<b>1 637 263</b>	<b>808 886 541</b>	<b>14 662.3</b>	<b>8 958 498</b>	

\* Opening stocks in recipient country plus food received in the recipient country plus incoming transactions in the recipient country.



## ACRONYMS USED IN THE DOCUMENT

BUB	best used before
CSB	corn-soya blend
DRC	Democratic Republic of the Congo
EDP	extended delivery point
EMOP	emergency operation
FPF	Forward Purchase Facility
FSQMS	food safety and quality management system
HEB	high-energy biscuit
LESS	Logistics Execution Support System
LTA	long-term agreement
MSF	Médecins sans frontières
ODB	Regional Bureau Bangkok (Asia)
ODC	Regional Bureau Cairo (Middle East, North Africa, Eastern Europe and Central Asia)
ODD	Regional Bureau Dakar (West Africa)
ODJ	Regional Bureau Johannesburg (Southern Africa)
ODN	Regional Bureau Nairobi (East and Central Africa)
ODPC	Regional Bureau Panama City (Latin America and the Caribbean)
ODPFQ	Food Safety and Quality Assurance Unit
ODS	Regional Bureau Sudan
P4P	Purchase for Progress
PHHS	post-harvest handling and storage
PRRO	protracted relief and recovery operation
RUSF	ready-to-use supplementary food
UNHCR	Office of the United Nations High Commissioner for Refugees
WINGS II	WFP Information Network and Global System II
WSB	wheat-soya blend