



Food Guidelines: Warehousing and Management

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Document control

Version History

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Introduction

This guideline in conjunction with the Food Procurement and Quality Assurance Guidelines have been developed to assist SC Logistics and programmes staff in developing the supply chain strategy for their food aid and nutritional programmes.

The guideline sets out organisational minimum standards and procedures specific to the management of standard food items as well as specialised nutritional food items and breast milk substitutes (BMS) procured for use with in our programmes. The guidelines should be read in conjunction with:

- SC Global policies on procurement and Stock management
- SC Food Procurement and Quality assurance guidelines
- SC NFI and Food distribution guidelines (under construction at time of writing)

Donor rules and regulations should also be adhered to if they are stricter.

Purpose

The guidelines aim to enable our programmes to safeguard the quality of food items that are procured and distributed within our and our partners' programmes, as well as monitor and report quality problems.

These guidelines alone are not designed to develop and plan a food aid or nutritional programme, but should be used by both programme and logistics staff to help prepare and implement the supply chain for the programme. Before any such planning can take place the programme must carry out thorough assessments and develop a detailed Programme strategy. For details of how to carry out assessments and develop response strategies please refer to the Livelihoods and Nutrition ESOP.

Scope

The scope of this document is for all SC staff and partner organisations working or managing food aid or nutritional programmes on behalf of SC.

All food aid and nutrition programmes regardless of scale and nature, i.e. development or emergency are expected to adhere to the guidelines.

Part I : Warehousing


I.1 To Determine the Storage Needs

It is important to ensure that warehouses used have adequate space for:

- Storage of commodities.
- Handling and ventilation between stacks, walls and eaves.
- Receiving and dispatching orders.
- Kitting or repacking items.
- Warehouse operation (office and materials).

It is important for the programme and logistics team to plan together their storage requirements based on the weight and volume of food they will need to store. This will depend on the items to be stored and the capacity of the programme's supply chain. Refer to Procurement and Quality Assurance Guidelines on how to determine this.

Once volume and weight of items to be stored has been determined, the storage calculator, Annex 1, can be used to determine the volume and size of warehouse space required by the programme.



Storage surface calculator

1) Select items to be stored and indicate the quantity
 2) If needed modify the suggested pile height
 3) Adjust the other surfaces based on situation requirements

Only cells having a yellow background modified !

Items	UoM	Quantity to store	MT	M3	Suggested pile height
Wheat flour	MT	225.00	225.00	337.50	3
Vegetable oil in tins	MT	25.00	25.00	37.50	2.5
Sugar	MT	25.00	25.00	37.50	3
Kitchen set 5 pers	EA	15000.00	67.50	392.04	2.5
Houe 3lbs (per 24 ea wooden box)	EA	15000.00	22.63	28.88	2
Salt	MT	5.00	5.00	7.50	3
TOTAL			370.13	840.92	

Ventilation and movements 25.00% 392.19 M2

Office space 6 M2

Reception area 24 M2

Dispatching area 12 M2

Working area (Rebagging, kitting) 75 M2

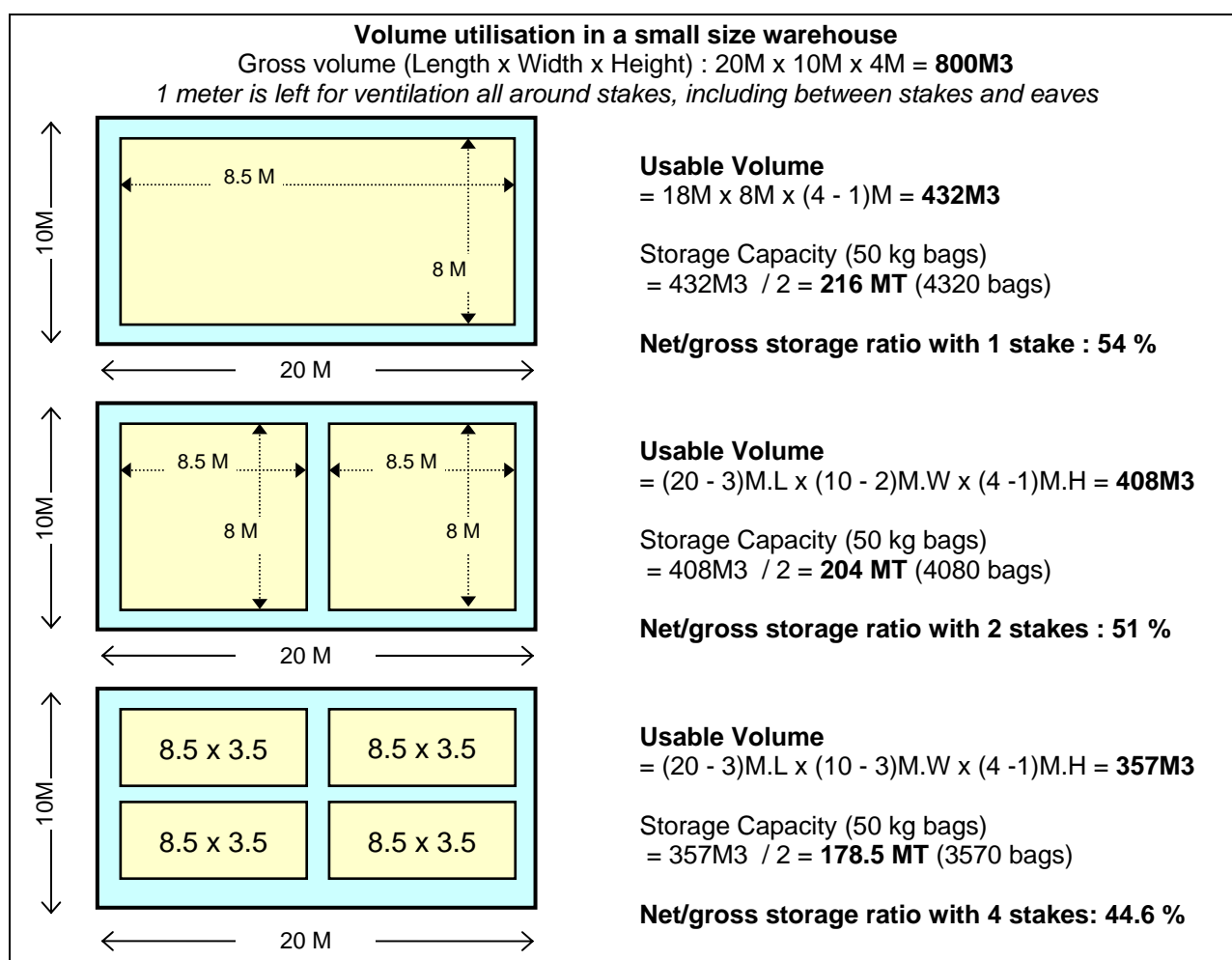
Total surface needed : 503.19 M2

The volume required to store commodities is based on the weight and volume of the items.

Refer to the Excel file to calculate the storage needs for the main commodities distributed

Keep in mind that:

- The useful space in a small warehouse up to 250 M2 can be less than 50 per cent, whilst in large warehouses this can be as high as 70 per cent.
- The more piles/stacks of different items we have, the less useful space we have.



I.2 Selection of a Warehouse

2.1 General criteria for building

The type of usage of the warehouse: main stock, transit or site will determine the relative importance of the criteria below. It's rare to find a ready-to-use and perfect building: work for reparations or improvement will have to be done and sufficient budget must be made available.

Category	Description
Access	Road and parking must all allows the access and manoeuvres for heavy vehicles. Main warehouse 23 to 38 MT trucks, sub warehouses 10 to 23 MT.
Security	Located in a fenced compound, strong gates, good doors, windows protected by metallic grid. Good lightening. No high trees (storms) or important vegetation (fire and surveillance).
Useful storage space	Available surface ample, ideally with large opened spaces and concrete floor to facilitated handling.
Working condition	Facilities for hygiene, access to water
Maintenance cost	Over long periods, a solid structure has a lower maintenance cost than structure using local materials frequently needing repairs.

2.2 Essential criteria for food items

Category	Description
Protection against weather	Impermeable roofing, tick walls to prevent head. Heavy construction in case of strong winds. Drainage to evacuate water.
Protection against rodents and insects	All buildings opening can be closed or are protected by nets. Smooth wall surface.
Ventilation openings	Openings should be sufficient for air circulation and protected by mesh wire.
Pollution	Industries in the vicinity, previous use of the building.

2.3 Where there is no existing infrastructures

When no existing infrastructure is available several options can be considered:

- 1 - Rubb Hall



Illustration of two Rubb Halls, THAB 10 x 24 m - approx. 1,080 m³ each.

Giertsen HallSystem AS

http://rubbhall.no/rubbhall_en

Other manufacturers:

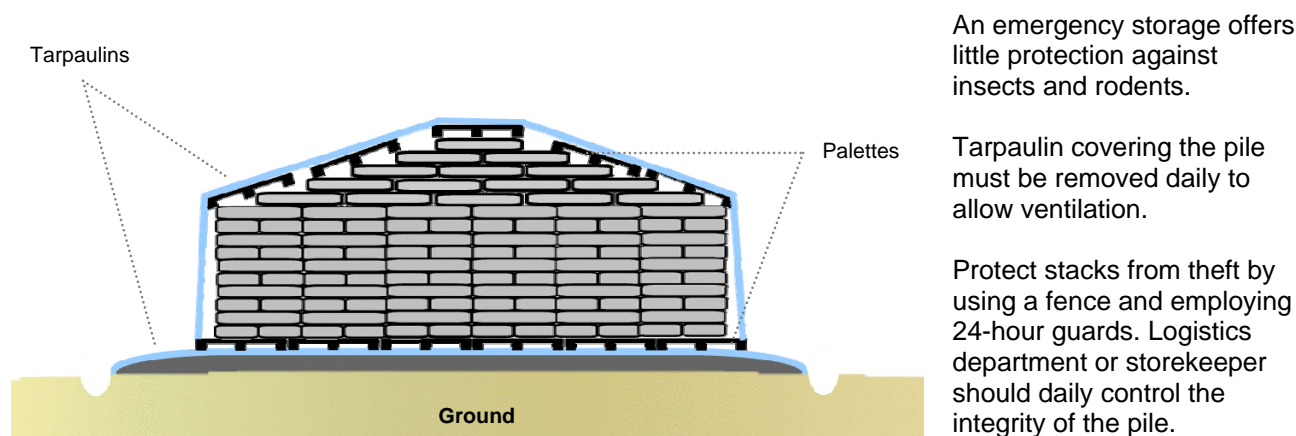
<http://www.rubb.com>

Rubb Halls are large tents. Medium size up to 10 x 35 metres are easy to transport (less than 4 MT and 5 M³) and quick to construct, one day with basic tools, once the location has been prepared and ready i.e. flattened and drainage system in place.

- 2 - Emergency storage

For a short period of time, food items can be stored outside using only tarpaulins, palettes and workmanship.

1. Select a location on high ground that provides a natural drainage.
2. Floor should be raised and flatten.
3. One layer of tarpaulin covers the ground.
4. Pallets are installed on the tarpaulin.
5. Food items stored on the pallets the shape of the stack should allow rain evacuation.
6. Tarpaulins cover the stack and the sides. To lash them securely so that it will not blow off. Place pallets or wood beams between the stack and the tarpaulins.
7. To dig drainage ditches around the stacks to prevent entry of rainwater.



- 3 - Containers 20" and 40"

While containers are practical and easy to secure solutions for non-food items, they are not really adequate for food items storage: the volume (respectively 30 and 60 M3) is insufficient, ventilation is poor causing moisture and when exposed to sun light heat is excessive.

I.3 Warehouse Security and Safety

Volumes of commodities for a food aid program targeting 50,000 persons on average can represent a flow of approximately 1000 MT per month. It is important to consider the various risks and implement measures to reduce them.

3.1 Natural disaster or looting

In case of major security incident or natural disaster, there is very little that can be done to prevent food being looted or destroyed. However the programme should focus on reducing the extent of loss if working in programmes prone to such incidents.

A risk assessment should be done and the programme's security management guidelines and procedures should consider this and determine ways to reduce/manage the risks.

In the case of natural disasters i.e. flooding, only a careful selection of sites and types of buildings, and controlling stock levels can the impact be reduced.

In the case of mass lootings, the security context must be monitored and decision has to be taken at the highest level to maintain or reduce the stock level.

3.2 Theft

The degree of security needed to protect stored food from outside theft depends upon conditions within a country. In some countries a fenced area with security guards may be required; in other countries, a locked warehouse may be sufficient.

To reduce risk of theft internally requires implementation of strong internal control measures and monitoring.

- The storekeeper is normally the only one having access to the keys. Outside the working hours, the keys are kept within the logistics department/office.
- The guards of the warehouse will record movements of vehicles, persons and opening of the warehouse.
- The access is limited to working staff or suppliers. No visitors, no relatives, no friends should enter the warehouse compound.

- Stock control procedures must be in place with regular physical stock takes carried out, refer to SC Stock Management Guidelines and Policies.

3.3 Fire prevention

Warehouse managers or storekeepers must insure that:

- There are materials and equipment available to put out fires such as fire extinguishers or buckets and hoses if a water source is available.
- Fire extinguishers are inspected regularly to make sure that they work.
- Flammable materials such as fumigants are properly stored.
- Strict rules that prohibit smoking or cooking in or near the warehouse are enforced
- All staff are trained in use of equipment and what actions to take

3.4 Work accidents

To prevent work accidents (e.g. bags falling on workers) the storekeeper and the labourer must be trained on good storage practices and control of stacks. In case of late work hours there must be sufficient lighting inside and outside the warehouse. The storekeeper must supervise the handling of any heavy items to ensure any incidents are avoided. The warehouse must have first aid kits, which the storekeeper/warehouse manager is responsible.

I.4 Resources to Run a Warehouse

In order to ensure safety, security and an efficiently running warehouse, it is important that they are staffed adequately, that staff know what their responsibilities and accountabilities are and are trained in all standard operating procedures.

4.1 Human resources

- 1 - Storekeeper

The responsibilities of the storekeeper are to:

- Organise the reception and dispatch of items.
- Organise a correct stacking and space management.
- Supervise the teams and possible assistants.
- Schedule the maintenance and the cleaning.
- Record-keeping and physical count of the items in stock.

In addition, in a food warehouse the storekeeper shall:

- Control the quality of the foodstuff entering the warehouse.
- Maintain and control the quality of the foodstuffs stored: to limit losses.
- Alert the logistics department/program manager when the expiry date of a product is approaching (within three months)

- 2 - Labourers

Besides the permanent warehouse staff, temporary individual labourers, often called casual or daily workers, or group/teams of labours, often called loading gangs, are employed for handling the commodities.

In major towns heavily lifting machinery may be available and can be used in the warehouse to move and lift the commodities, but in smaller towns or at project sites all the handling often has to be done manually.

Daily workers may help with cleaning, repackaging damaged food and other warehouse maintenance tasks. Even though not full-time employees, they must be well trained in food handling and storage procedures, and able to identify damaged packages and infestation.

When the use of daily workers becomes systematic they should follow the HR guidance principles and benefit from standard labour contract.

The workload of a warehouse always fluctuates and the storekeeper has to carefully estimate a daily regular workload to avoid over-employing staff.

When determining the casual staffing levels consideration must be taken of:

- Payment terms – temporary warehouse staff can be paid either on a daily basis, usually the case with daily individual labourers or on a tonnage basis, usually the case with loading gangs. It is important that records are kept on number of staff per day and quantities moved. Records should be checked against stock movements, in order to monitor and control the number of staff employed and whether it is appropriate to supply demands of the warehouse.
- The configuration of the warehouse – configuration can impact on the number of labourers to hire:
 - If piles are small and not far from the entrance one labourer can handle 7 MT per day.
 - If piles are high and distances are long one labourer will handle only 3.5 MT a day.

4.2 Materials

It is important to ensure that the warehouse and staff are adequately equipped to function efficiently. Below is an extensive list intended to covers all potential needs of a large warehouse.

For smaller structures, the list can be reduced to a minimum list of basic items. These items are indicated in the second column with the letter “B”.

Category	B	Items	Details
Storage		Ladders	
		Mobile stairway	To carry heavy weight on top of pile
	B	Platform scale	Up to 500Kg to quickly control deliveries
	B	Hanging scales	(25, 50 and 100Kg)
	B	Pallets	Europe standard 80 *120 or local made
	B	Measuring tapes 10-30 m	Measuring allows space preparation before the arrival of items
		Secured room	For high value items or dangerous products
		Plywood sheet	For cartons mainly, to use every 5 layers to stabilise and reinforce
Handling		Fork lift	Only where the soil enables the use of wheeled equipment
	B	Wheel barrow	
		Manual jack	Only where the soil enables the use of wheeled equipment
Repacking, conditioning	B	Needles	
		Portable sewing machine	
	B	Empty containers	25, 50 and 100Kg sacs, cartons, plastic containers for oil
	B	String, thread	
	B	Adhesive tape	
	B	Scooping buckets	Must be different from the ones used for cleaning
	B	Funnel	Reconditioning of oil
	B	Sieve	
	B	Knives, cutter	To open bags
Quality control	B	Sampling bags	
	B	Various sampling probes	

Category	B	Items	Details
		Moisture metre	
		Thermometer	
		Hygograph	
		Thermograph	
		Quick laboratory test aphlatoxin, iode	To implement quick test, very basic laboratory equipment is required
Maintenance tools		Basic tool box	Hammers, pliers, saws, screwdrivers, etc
		Shovels	For compound and building maintenance
		Cutlass/machete	
		Rope	
		Plastic sheeting	To use to protect piles in case of leakage
Insect and rodents control		Aluminium phosphate tablets	Only if trained staff are available
		Phosphate detectors	Gas tube, phosphate meter
		Rodents poison	
		Rat traps	Or rat glue
		Gas mask	+ spare filters
		Protective clothing and boots	
		Gloves	For fumigation
		Tarpaulins	
		Glue	
Cleaning	B	Brooms & mops	
	B	Detergent	
	B	Buckets	
	B	Dust bin	
	B	Garbage bags	
Office		Computer and printer	If possible with access to the office network
	B	Stationeries	Pens, note book, staplers etc
	B	Forms	Stock cards, bin cards, reporting forms, waybills, daily labour forms,
	B	Furniture	Tables, chairs, cupboard
Security		Alarm	
	B	Emergency SOP	What to do in case of ...
	B	Communication VHF, mobile	
	B	Lightening	Back-up by generators or battery
	B	Padlocks	
Safety	B	Fire extinguishers	
	B	Sand & water drums	
	B	Torch	
		Smoke detectors	
	B	First Aid Kit	

4.3 Facilities & utilities

It is important the warehouse has adequate facilities and utilities for staff. These should include but not be limited to, access to:

- Latrines.
- Water – for cleaning and drinking.
- Shelter – from sun/heat and rain.
- Electricity, power supply – for lighting.

These may not be available at non-permanent or small warehouses in remote locations. However arrangements need to be in place to ensure they are adequately covered i.e. torches for guards, drums of water for drinking and cleaning, generators for power and lighting.

I.5 Organisation of a Warehouse

5.1 Organising the storage space

A close collaboration is needed between the procurement and warehousing services of a logistics department.

The storekeeper needs simple information: the approximate quantities, products and arrival dates of incoming orders. With this information the storekeeper is pro-active and organises the space: the storage plan must ensure working access to all stacks at all times.

Rules to elaborate the storage plan:

- 1) Regular moving/rotating items are close to the entries/exits.
- 2) Large space is kept for large quantities.
- 3) Heavy items are located in easy access areas and while light parcels can be stored in staking rack or behind main stages.
- 4) Items are regrouped per program: this provides the budget holder a clear view of what is in stock.

The minimal distance between stacks is one metre, however the recommended distance between stacks is a minimum of two metres to allow two workers carrying bags to pass, as may happen constructions and draw down of piles is simultaneous. Greater distances are even required for mechanised handling systems.

5.2 Maintenance

It is important that the warehouse is well maintained and cared for. We cannot wait to see the leakage from the roof on a food stake before repairing the roof!

In the case of food storage, the storekeeper must implement a **preventive maintenance scheme** of the building. Monthly inspections of the infrastructure must be carried out to detect any possible weakness, particularly in the roof:

- To detect holes in the roofing and repair them.
- To seal cracks in the warehouse floor.
- To close any openings in the eaves, walls or foundation where birds or rodents can enter.
- To repair mosquito nets/mesh.

The storekeeper immediately undertakes small maintenance works, takes protective measures to protect stakes (plastic sheeting or relocation), and reports immediately to the logistics department major works.

5.3 Regular cleaning

Cleaning prevents propagation of insects and rodent and enables the detection of any invasion. It also improves the working condition by avoiding dust and slippery surfaces.

Cleaning is necessary both inside and outside of the warehouse:

Frequency	Task	Details
Daily	Internal floor sweeping	Including doors and door channel. Sweepings have to be immediately taken to the disposal area. Clean spillage as it occurs.
Weekly	Sweep the walls and sides of stacks	Cleaning progression: First the walls, then the piles and then floor. From the corners to the exit
	Outside	To cut the wild plants, to remove possible rubbish.
Monthly	Complete stock cleaning	Or as soon as a part of the warehouse is empty: deep cleaning: Ceiling, roof structure, top of the piles.

I.6 Specificities of Food Storage

6.1 Storage conditions for food items

All products and specifically foods have a tolerance range for temperature and humidity.

When storage conditions are very specific like a low temperature, this is usually indicated on the product labelling.

In the case of food items, we use as a general guideline for our warehouses, that they are:

- A mid-dark place, no exposure to direct sunlight.
- A dry environment, less than 70 per cent humidity.
- A positive but moderate temperature, between 0 and 30°C.
- In a separate building, apart from harmful chemical substances and fuel.

In general it's preferred to separate food stocks from other types of stocks, as management is different and so avoids confusion. However in cases where storage space is limited this cannot always happen. As a rule, food items can be stored with "inert" food items such as kitchen sets, blankets, plastic mats, plastic sheeting and tents.

Food items should not be stored with non-inert items such as drugs, fertilisers or pesticides, cleaning agents or detergents, fuel items – petrol, kerosene, or diesel.

As guidance, any item having on the packaging a symbol of danger cannot be stored with food items, if in doubt DO NOT store with food.

6.2 Waiting area (items to destroy)

There is always a risk that food items become contaminated by insects, bacteria, and fungus etc, however well the warehouse is managed. The main risk if contamination does occur is that it spreads and contaminates the entire warehouse.

Action must be taken fast, the storekeeper cannot wait until confirmation from a laboratory analysis or wait for the decision to destroy the items has been made. Any suspect lot must be immediately isolated in a “waiting area”.

This “waiting area” must be outside the main warehouse and separated by at least 15 metres, until checks have been carried out and a decision made whether to treat (fumigate) or destroy the food items.

6.3 Temperature and hygrometry

An excessive temperature and a high hygrometry (humidity) inside the warehouse can affect the quality of the food items: it causes the degradation of the initial nutritional value and reduction of the shelf life.

Modern warehouses can have built-in equipments to ensure temperature and hygrometry control. These equipments are not available at the field level and only the natural ventilation can lower the temperature and hygrometry. Doors and windows have to be widely opened every day.

If the existent openings are not sufficient, the storekeeper can create additional ones or install large ventilators/air extractors.

Below are regulatory devices that can be used:



Digital Thermometer hygrometer

Manufacturer: Control Company model 4189

This equipment provides an instant reading of the temperature and hygrometry of the warehouse.



Thermo hygrograph

This model records temperature and relative humidity of the air.
Two options: 7 or 31 days drum rotation

To record the temperature and humidity is important to show that SC respected the storage requirements of the products.

6.4 Rotation of items, FIFO

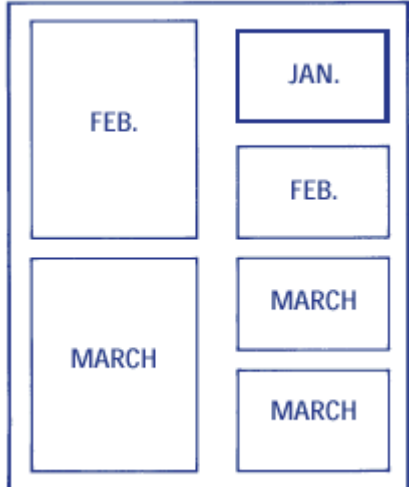

The general rule is that the oldest stock should be dispatched first: First In - First Out (FIFO).

The FIFO rules are normally in line with the shelf life of the products, normally the stock received a few months ago was manufactured before a stock received yesterday; therefore the remaining shelf life of the older stock is shorter.

The FIFO rule is not respected when:

- Expiry date of a younger stock is closer than older stocks.
- Items deteriorate and should be used quickly.

The stock-keeper must determine a storage and rotation schedule for stock to minimise work and labour but ensure that the right stocks leave the warehouse in the right order.

		<p>The storekeeper plans the organisation of surface taking into account of the stock rotation and ensuring an easy access to food that has been stored the longest so that it will be dispatched first.</p>
<p>During March: the storekeeper issues first the stock which arrived in January.</p>	<p>During April: The new stocks arriving can be stacked in the freed space after it has been cleaned.</p>	<p>Illustrations from www.foodquality.wfp.org</p>

6.5 Rodents/birds control

Rodents and birds are vector or various diseases. If the stock is well organised (space between stacks, food on palettes) and the warehouse well managed (regular cleaning, meshes on the opening) pest control of rodents and birds is relatively easy.

The signs indicating an infestation are:

- Rodents or birds in the warehouse.
- Excrement on the floor or stacks.
- Gnawed bags or containers.
- Footprints in dust.

What do to?

- Reinforce the cleaning.
- Check for openings not protected by nets or holes in the walls/ground.
- Install traps.
- Cats can be used but only outside the warehouse as they can urinate on the foodstuffs.
- Repack the damage containers.
- Dispose of dirty food items or foodstuffs that were in direct contact with the rodents.

Traps and poison (from USAID CRG)	
Bait Stations	To help control rodents, exterior bait stations containing fresh anti-coagulant poison should be maintained around the periphery of the grounds, 30 metres apart and around the exterior of the building, 15 metres apart. Bait stations must be checked frequently, (at least twice monthly) so that the bait does not become wet, mouldy or infested with insects.
Tracking Powder	Tracking powder can be used in limited areas (not where it could contaminate food) where a mouse problem is suspected.
Snap Traps	Snap Traps can be used; however, they must be given daily attention to be effective.
Glue Boards	These are useful against mice. They can be distributed among the stacks of food

	where mice become entangled with the glue and cannot escape. Glue boards must be inspected frequently , to be certain that they are fresh and effective. To increase effectiveness, place under a box with openings at each end (to create a tunnel), to protect from dust and to offer shelter to rodents.
Multiple-Catch Traps	These traps are for interior use and can hold up to 30 mice. Some require winding; all require weekly inspection.

6.6 Insects control

The monitoring of insects within food items is essential, WFP works on an estimate that every six weeks the number of insects is multiplied by 50. If nothing is done, the infestation can only get worse.

The signs indicating an infestation are:

- Flying insects.
- Live or dead insects or larvae on the floor.
- Traces of insects or larva in dust.
- Grain bags have small holes and excessive dust.
- Noise heard inside the bag.
- Irregular holes in the grain or beans.
- Strong odour.

What do to?

- Segregate the contaminated bags.
- Deep cleaning of the warehouse.
- Evaluate the damages and identify the insect.
- For very small quantities and moderate infection – sieving.
- For large quantities and moderate infection – fumigation.
- High infections (more than four insects per Kg) – unfit for human consumption.

To be successful fumigation has to be correctly implemented. SC recommends that fumigation should be outsourced to specialised companies rather than taking unnecessary risks. Local Government ministries for food and agriculture should be referred to for rules and regulations that you may be required to follow, they may also want to inspect warehouses.

Refer to WFP Food Storage Manual for precise information on fumigation.

http://www.wfp.org/policies/Introduction/index.asp?section=6&sub_section=1

6.7 Inspection of the food items, check list

The storekeeper must continually inspect food packaging for damage.

The correct way to inspect stacks is to climb to the top and spot check bags or containers underneath the top layer and from the side carefully look in between bags or containers.



Area to be inspected:	Inspect for:
Outside the warehouse	<ul style="list-style-type: none"> - Cleanliness - Condition of roof, walls and windows - Security-fences, guards, locked doors and windows


Inside the warehouse	<ul style="list-style-type: none"> - Condition and cleanliness of ceilings, floors and walls - Adequate ventilation - Placement of rodent baits / traps - Presence of hazardous substances such as chemicals and pesticides - Presence of fire extinguishing equipment, dates not expired
Food storage area	<ul style="list-style-type: none"> - Distance between stacks, and between stacks and walls - Interlaced or bonded stacks - Use of pallets free of exposed nails or wooden splinters which may tear bags - Segregation of damaged food - Insect infestations -visual and sounds - Rodent or bird infestations - Stale food which has been stored too long - Leaking, stained or discoloured containers, bulging or rusting cans and caking of food within bags - Germination of grain in sacks - Short-weight containers
Warehouse office area	<ul style="list-style-type: none"> - Cleanliness - Tidiness of the office - Condition of office equipment

6.8 Tools for quality inspection of products



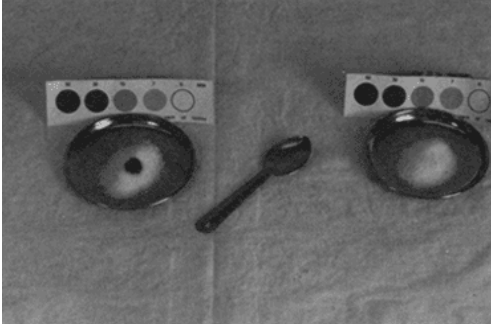
There are various tools, listed below, that can be used to facilitate sampling and to carry out quick quality tests. They can be used during the regular inspection of storekeeper, during the delivery inspection or to take laboratory samples.

Protocol for the use of these tests needs to be defined by the programme and logistics department in line with programme and local requirements and legislation.

TOOLS TO FACILITATE THE SAMPLING	
	<p>1 Conical grain probe 250 mm (stainless steel) 2 Cocoa and coffee probe 360 mm (steel) 3 Powdery probe 300 mm - Ø14 mm (stainless steel) 4 RKS probe 1,5 m - Ø30 mm (aluminium)</p> <p><i>Illustrations from www.tripette.com</i></p>
	<p>Portable motorised sample collector.</p> <p>Model Powerproof from www.labocontrole.com</p>

	<p>Riffle divider for grain, to be used to obtain identical laboratory samples from a global sample.</p> <p>Illustrations from www.tripette.com</p>
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TOOLS FOR QUICK QUALITY CONTROL	
	<p>Specific sieves are used for checking the impurities of grains at reception.</p> <p>Several dimensions for the perforations exist depending on the foodstuffs to control</p> <p>Illustrations from www.tripette.com</p>
	<p>20x magnifying lens (pocket or table model).</p> <p>Illustration from www.stanleylondon.com</p>
	<p>Field moisture metre to measure moisture of cereal, oil-containing and protein-containing seeds, direct reading.</p> <p>Possible to calibrate per type of seeds against an approved moisture meter.</p> <p>Illustrations from www.tripette.com</p>
	<p>Portable moisture meter for flours</p> <p>Model GMK-308</p> <p>Flour : 8.5%~23.5%</p> <p>Illustration from www.g-won.com</p>

	<p>Digital thermometer to control temperature of food products</p> <p>Illustration from www.termoprodukt.com.pl</p>
 <p>COPYRIGHT R-BIOPHARM RHONE LTD</p>	<p>Cards to perform test against content of various substances</p> <p>This test can be done without any particular formation and without complex laboratory equipment. They require however some basic laboratory materials.</p> <p>Tests exist for Mycotoxins, E-coli, GMO presence etc.</p> <p>www.r-biopharm.com www.r-biopharmrhone.com</p>
	<p>Photo showing a positive (black dot on the right sample) and negative spot test result for salt iodine</p> <p>Kits used by UNICEF from MBI chemicals Madras, India 3 kits available: potassium IODATE range 0-50 pp potassium IODATE range 0-100 ppm potassium IODIDE</p> <p>Illustration from Monitoring Universal Salt Iodization Programs report on www.iodinenetwork.net</p>

I.7 Receiving Food Items

7.1 Preparation

The storekeeper must prepare for the arrival of a delivery. They will require information on number of product types, quantity and if possible how many different lots. Additional information on the supplier/donor may also be needed.

With this information it is possible to prepare the space required, to check that the pallets are sufficient and in good condition, to properly clean the area and to hire the adequate number of daily workers.

If the products are new the storekeeper must be given the protocol for organoleptic control, so they are able to assess the quality and ensure items are stored appropriately.

7.2 Delivery inspection

The delivery inspection combines **quick and simple controls** that must be done when receiving items. The storekeeper performs documentation, quantity and quality verifications.

Products of poor quality will only cause problems later, if they are infected with insects they could contaminate the entire warehouse. Therefore simple inspections must be carried out at time of reception to prevent such problems later.

1 Documentation	The storekeeper or logistics department performs an administrative verification on the general documentation and the labels. Consistency between the batch numbers, conformity certificates (or composition) and waybills.
2 Quantity	The storekeeper controls the quantity delivered: to count and/or to weigh the units.
3 Quality	<p>The storekeeper must refuse commodities with a defective quality of the:</p> <ul style="list-style-type: none"> • Packaging: torn cartons, rusty tins, leakage. • Transport: wet products, containing fuel. • Product itself through organoleptic controls and quick tests <p>Should be particularly verified:</p> <ul style="list-style-type: none"> • Expiry dates. • The absence of insect infestation. • Smell and taste of the product. • The aspect of the product. <p>- Quick test : moisture and temperature of the foodstuff.</p>

In large deliveries it is not possible to test every single sack or item, therefore the matrix formula in the table below should be used to facilitate inspection and get a good overview of the total delivery.

How many bags/cartons to control in a delivery inspection:

Number of primary units (Lot size)	Number of primary unit to inspect
From 0 to 10	All the bags/cartons
From 11 to 100	11
Above 100	Square root of the number

Example: The storekeeper receives a deliver of 20 MT of CSB in 25 KG bags.
Calculation: $20\,000 / 25 = 800$ bags (primary units) $\sqrt{800} = 28.28...$
The storekeeper will inspect 29 bags chosen randomly.

When food items have no date on the packaging – such as cases of a local reconditioning by WFP - the storekeeper must write the date of entry in stock on all the bags/final packaging.

7.3 Handling food

The storekeeper has to control the offloading and loading of vehicles. This operation cannot be done under rain as wetting will weaken the cartons/paper bags and spoil the food.

Loaders must handle the food items with care to prevent damage to packages.

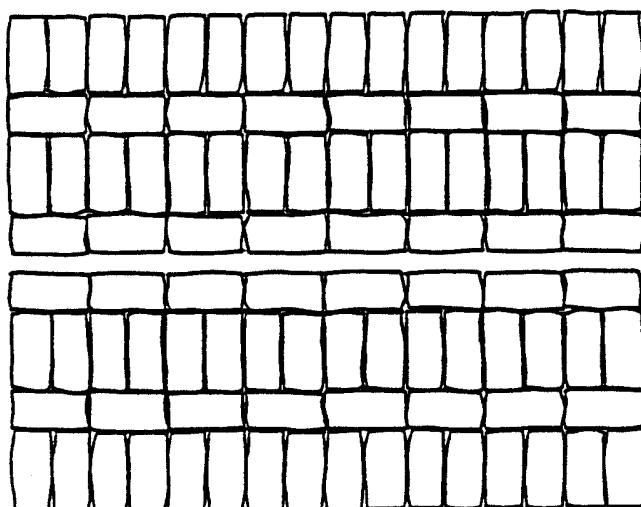
Loaders must not use hooks (grains or flour can leak, contents can be infested), nor throw or drop the items (the bags particularly in paper will burst).

7.4 Stacking food

The way food is stacked in the warehouse is crucial to safety of staff and the items being stored.

If food is stacked too high, stacks can become unstable especially as food is put on or taken off. In addition, added weight may cause damage to bags or containers of food at the bottom of the stack.

- **Do not stack more than:**
 - 10 cartons of oil in tins
 - 20 layers of bags for flour
 - 30 layers for grain
- **Always stack food items on pallets.** This prevents moisture and allows fumigation. Pallets should be clean, level, and free of projecting nails or splinters. When pallets are not available, such as at the beginning of an emergency operation, try to place food on wooden planks, woven mats or plastic sheeting. Keeping food off the floor is essential.
- Leave one metre between stacks, one metre between stacks and warehouse eave, and one metre between stacks and walls. This allows air to circulate and slow down the infestations.
- Stack cartons or tins of oil in their upright position.
- Create separate stacks for food in original packages, damaged packages and repackaged food.

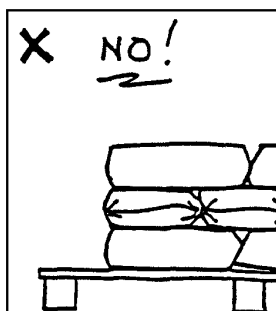
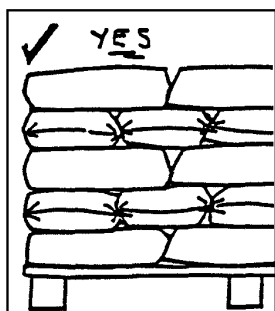


Interlace the stacking sequences

1st, 3rd, 5th, 7th etc. layers as seen from above

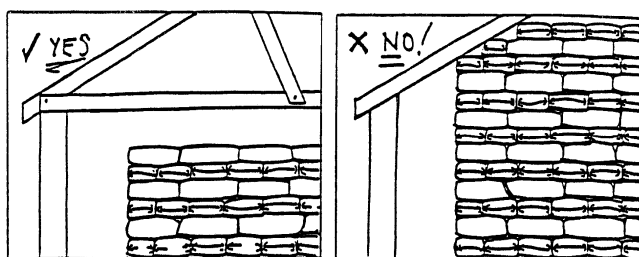
2nd, 4th, 6th, 8th etc. layers as seen from above

Place the same number of bags or containers on each level to make counting easy



Stacking on pallets

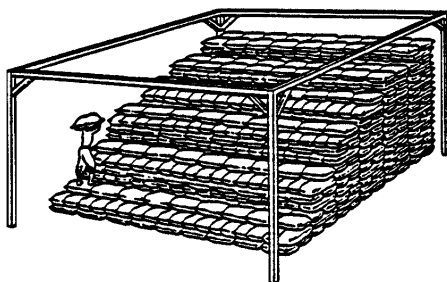
The right example is not correct: the stack as to use the whole surface of the pallets.



Stacking food to eaves

The right example is not correct: the stack top layers are in contact with the roof. There's risk of moisture (condensation), poor ventilation and poor cleaning.

This should be seen only when the storekeeper is in desperate need of space!



Staircase stack

This method allows staking high stacks quickly.

Precautions have to be taken to protect the bottom bags (use of plastic sheeting or blankets) as the packaging is not designed to resist numerous steps.

7.5 Systematic under scooping of donated products

Each bag/carton has a theoretical net weight (mentioned on the packaging) and has a real weight. Normally the average net weight of all the bags/cartons tends to the theoretical weight.

A difference may be found during the delivery inspection, the bags are systematically under scooped (e.g. 48 KG instead of 50KG). This can be due to a fraud of the manufacturer; to losses when the packaging is poor, to pilferages of the warehouse employees or naturally because the product dried and contents now have less moisture (particularly for products in grains stored for long periods.)

For products that SC purchases, the price paid is based on the quantity controlled during the delivery inspection. In case we face a systematic under scooping the manufacturer will receive a smaller payment. If we consider that the under scooping will result in unacceptable extra costs for SC, we can simply refuse the product.

For donated products, the situation is more complex, it's difficult to refuse a delivery of trucks after hours on the roads because there's a systematic under scooping.

Questions are then: what to enter in the stock cards? And shall we recondition or not?

- If the under scooping **is less than 2.5 per cent** (less than 1.25 KG for a 50 KG bags), we consider the theoretical weigh. A *note verbal* will however be address to the donating agency to emphasise and document this issue.
- If the systematic under scooping **is more than 2.5 per cent, the storekeeper will mention the average weight found and the estimated real quantity received on the waybill.** We will start a reconditioning of the delivery.

A *note verbal* will also be address to the donating agency to document this issue.

SC stock cards will be completed after the reconditioning and bag counting.

For more details see [II.3 Repacking Food Items](#) and [V.1 Reconditioning, Kitting](#).

7.6 Recording kg or containers

All stock should be recorded on stock cards and reports, refer to SC Stock Management Guidelines.

As a general rule food items are that they are recorded in kg, however there are exceptions for:

- Nutritional food
- Oils

Nutritional food

Nutritional food items that can be recorded in individual sachets (Plumpy nut, BP5, F100) and ready-to-use food rations (premix).

Oils

The volume (litres) varies with the temperature: only the mass is stable. The higher the temperature the lighter the weight

The density of the oils vary with each type, quality and temperature. The range of variation is from 0.91 to 0.93 g/cm³ between the temperatures 15 C and 25 C.

Therefore for precision the correct unit to use for oil when ordering and stock management should be kg. Food rations are also calculated with kg.

However, oil is often packaged in containers/bottles by litres, therefore for warehouse staff it may be simpler to consider it by unit of packing. The programme needs to determine which method will be used for stock management kg or litres, have an agreed conversion rate and standardise this across the whole programme, to ensure consistency in reporting across logistics and programme.

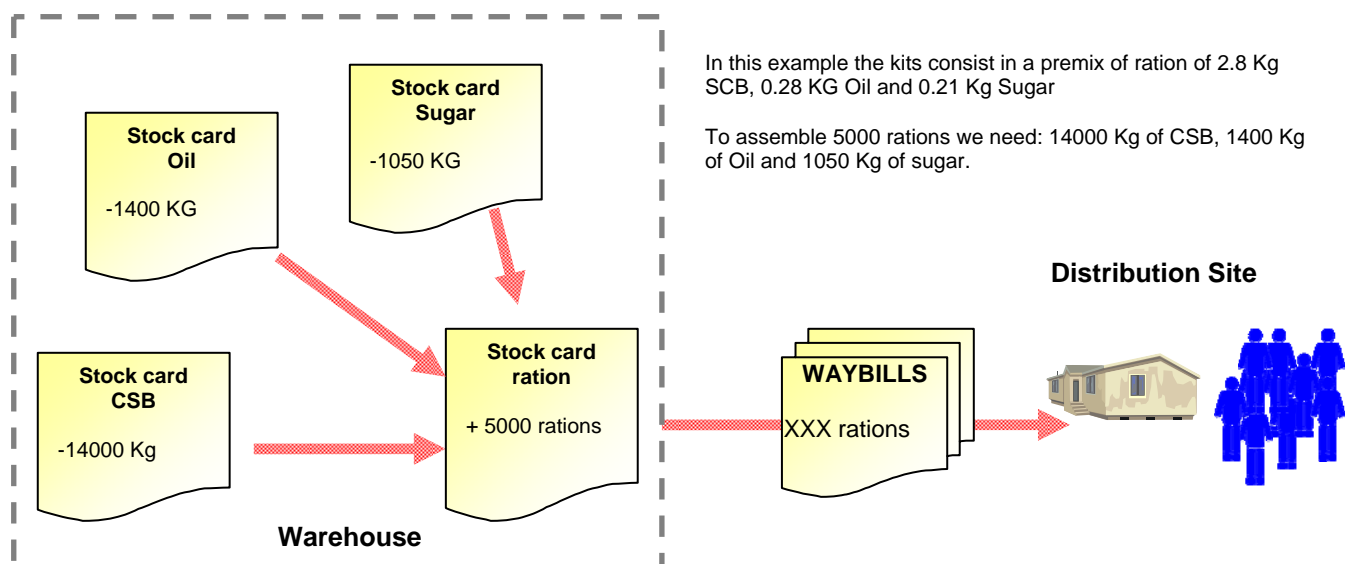
Oil	Net Kg per litre at 15.5 °C	Net Kg per litre at 20 °C
Sunflower	0.924	0.919
Rice Bran		0.918
Groundnut		0.913
Palm	0.921	
Coconut	0.9259	0.919
Peanut (Arachis)	0.917- 0.92	
Rapeseed	0.913	

The table above provides some “standard” measurements; the storekeeper must weigh several samples of oil at midday (14:00 for example) in the warehouse to determine the exact density of the oil used.

Part II : Reconditioning and Kitting

The activity of kitting consists in assembling several commodities in a ready-to-distribute kit. To distribute kits means saving a lot of time on the distribution site but it requires time for preparation and financial resources (workmanship and packaging).

For record keeping a new stock card is created for the kits.



While kits have advantages, some aspects have to be monitored:

Shelf life	Because of mixing products and opening the initial package, the foodstuffs in ration have a short life time (from 2 to 4 weeks)
Volume	Logistics packaging are volume saving (example buckets impaled per 20 in a box) when assembling a kit some space will be lost.
Transport	Once again with buckets, the transport in 20 ea cartons is safer than when inside kits: buckets in the lower layers in the truck are frequently damaged
Moisture	When assembling NFI kits containing soap, precaution has to be taken to avoid moisture of the soap propagating to sensitive items (clothes or blankets)

Reconditioning refers to modify the initial package of an item to make it more adequate for expedition/distribution. e.g. to change of 50 KG bag of salt into 200 sachets of 250 grams.

The recording principle is the same as for kitting with the creation of a new stock card for salt packed in sachets of 250 grams.

Part III : Deterioration and losses

III.1 Shelf life

1.1 Understanding the dates

Countries frequently have three types of shelf times depending on the food items (this information has to be verified in the country of operation)

- **“Use By”** labels are placed on fresh products that can deteriorate and even **become unsafe** to eat over short time periods e.g. fish, fresh meat, meat products and milk. These items are not used in Food Aid programs.
- **“Best Before”** dates are used on more stable or non-perishable goods, such as canned and dried products. It refers more to the nutritional and taste quality rather than to safety. The “Best Before” date can only be a valid guide if we **follow the storage instructions** on the packaging. To not respect the storage requirements accelerates the deterioration of the product.
- **Products having a shelf life of at least two years**: only the packing/manufacture date is required (mostly for 50 kg bags of food in grain)

1.2 Extending the shelf life

- 1 - Best before date

The process to obtain an extension is long and the extension is usually short - a six month period - for these reasons the Logistics department has to start at least one month before the date mentioned.

The procedure to follow:

1. To perform an organoleptic test.
2. If the organoleptic test is positive, to contact the manufacturer and to agree on the feasibility, the sampling plan and the tests to perform.
3. To take a sample and send it to a laboratory/manufacture.
4. If the result is positive to obtain a new validity certificate from the manufacturer.

To extend a “best before” product without the consent of the manufacturer means for Save the Children to take the full responsibility in case of an incident.

- 2 - Manufacture date/packing date

For items having only a manufacturing date and no other indication of shelf life duration, there is no real extension of expiry date. Save the Children has to evaluate the quality and the harmlessness of the product.

1. Perform an organoleptic test.
2. If the organoleptic test is positive, obtain the international norms (Codex Alimentarius) and the national quality (if any) standards of the product.
3. Take several laboratory samples.

4. Request an independent laboratory to perform a test against these specifications and to issue a conformity certificate.
5. Use the product only if both certificates are positive.

III.2 Information to the relevant donor: losses & repacking

The major donors of food commodities have procedures to respect in the following cases:

- Alteration of the product during a maritime transport.
- Costs and losses due to repackaging.
- Losses due to alteration.
- Re-routing of commodities unfit for human consumption.
- Bags and containers with the donors mark.

These procedures define:

- The authorisations to obtain.
- The method for the calculation of costs and quantities.
- The documentation to provide.

Under the respect of these procedures it is possible for SC to be reimbursed of some cost that occurred and moreover to not take the financial responsibility for the losses.

III.3 Repacking food items

Food that arrives in damaged bags, cartons or containers should be repackaged. Repackaging insures that food is stored and dispatched in good condition and in standardised weights. In this guideline the terms repackaging and reconstitution are used interchangeably.

Repackaging involves taking food from damaged packages (bags, cartons or containers) and filling new ones to the standard weight specified on the Bill of Lading or waybill. Any food (grains, processed cereals or liquid) spilled on the floor or on the ground during reconstitution which may be unfit for human consumption must be disposed of as described below.

Losses after repackaging are calculated by subtracting the weight of the reconstituted bags, cartons or containers from the original weight of all the packages if no damages had occurred.

3.1 Defining thresholds for automatic repackaging

Each field office must establish a policy specifying who can approve the repackaging cost of damaged or infested food. For reconstitution of small amounts, it should be the storekeeper. For larger amounts (above 100 USD) thresholds have to be defined according to the volume of commodities handled and donor(s) requirements.

These thresholds are adapted to the volume of commodities handled: they cannot be the same for an office managing occasionally food items or an office managing monthly 1000 MT of food items

Below is an **example** of thresholds.

Agreement to obtain regarding repackaging costs before proceeding	SC funded commodities	UN funded commodities	USAID commodities
Below 100 USD	None	None / no reimbursement	None / no reimbursement
Below 500 USD	Office Logistics department	Logistics department + Information to donor	Logistics department + Information to donor
Below 1000 USD	Country Coordination office or Programme manager office	To define	To define

3.2 Procedures

Repackaging needs to take place as soon as possible after the damage has been discovered. Otherwise, the quality of the food could be affected and further losses could result. Also, delays in repackaging food could make it more difficult to pursue damage claims against responsible parties.

- Ensure that adequate space is available for prompt segregation of damaged and/or infested packages of food. Maintain a supply of empty bags, cartons or containers either purchased locally or obtained from the donor at the time the food is shipped. Materials for stitching or taping and adequate labour must also be available.
- New bags, cartons or containers should have the same donor markings as the original, including the name of the donor and the information that the food was provided as a donation and is not to be sold or exchanged. If marking the new bags or containers will be costly, request the donor to waive this requirement.
- Repackage bagged food by stitching or taping torn bags, placing the damaged bag inside a new bag, or rebagging the food entirely.
- Supervise labourers to insure that work is done well, with penalties for unacceptable work practices and incentives for high quality work. If labourers are paid by the piece, they may fill, stitch and move bags quickly, with minimal care.
- Food infested with insects or other matter can be passed through a sieve to separate the dust and partially consumed grain from the good food. The food is then rebagged. In cases where large amounts of food are infested with insects or other matter, food may be sent to processors, millers or others who have equipment to efficiently separate out the matter. In these cases, warehouse managers, storekeepers or others must assure that all damaged bags, cartons or containers are fully accounted for before they are dispatched to the processor. A full inventory must be taken upon the return of the reconstituted food. Supporting waybills must be kept on file.
- Repackage oil by emptying the contents of damaged tins into clean containers (often plastic jerry cans)
- Weigh all repackaged food to insure that the new bags, cartons or containers have been filled to the standard weight of the original package. The standard weight is based on the original Bill of Lading.
- Closely monitor repackaging activities to detect and correct short weight and faulty packaging, and be vigilant against possible thefts of food during the process.

- Weigh all repackaged food to insure that the new bags, cartons or containers have been filled to the standard weight of the original package. The standard weight is based on the original Bill of Lading.
- Closely monitor repackaging activities to detect and correct short weight and faulty packaging, and be vigilant against possible thefts of food during the process.

3.3 Repackaging costs

The allocation of the cost for repacking depends on the responsibility:

Sub contracted transport:	Transporter
SC vehicles:	SC
Deterioration in SC warehouse:	SC

Repackaging expenses incurred because of damages to bags or infestation caused during ocean transport must be paid for by the shipping company.

For donors who do not specifically provide for the reimbursement of repackaging costs, costs should be estimated based on past experience and included in the project proposal budget for approval by the donor. The donor should be contacted if the costs appear to exceed the amount budgeted.

III.4 Food unfit for human consumption

Warehouse managers, storekeepers or others who suspect food may be unfit must act **promptly** : to notify the office Logistics department, to notify donor (if relevant) and to organise the analysis of food.

If food is declared unfit for human consumption, it is considered a loss which is recorded in stock cards and stock reports. A missing/Damage report should be raised and approved by the Food aid/Programme manager to be sure they are aware of the problem and include in any project/donor reports as required.

4.1 Quality alteration of the foodstuffs and certificate

There are several forms and different cause for possible alteration of food.

The alteration of the quality is revealed by a delivery inspection (independent surveyor, SC employee) or during the periodic warehouse inspection. **The use of product must be stopped if Alteration is found.**

An organoleptic test, particularly smelling and tasting the product will reveal immediately a major alteration.

Internal transport	Warehousing	Maritime/international transport
If the product is originating from a supplier or UN agency: refusal the product.	Segregated from any food that is in good condition Identified as to which samples came from which shipments Laboratory samples representative of the total	Laboratory samples Representative of the total suspect cargo Drawn jointly by SC (or the surveyor) and the shipping company agent Identified as to which samples came

	Sealed to protect the integrity of the sample Made available to the health inspector or other person for analysis.	from which cargo Sealed to protect the integrity of the sample Forwarded to the laboratory or chemist.
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Once the food has been inspected and declared unfit, a **Commodity Inspection Report** must be completed by the Health Authority or Inspection Company. The form must be signed, including the title of the signer.

The written statement or certification should include but need not be limited to the following information:

- Name of the vessel, warehouse, or distribution site
- Date of discharge from the vessel, arrival in warehouse, or first suspected to be unfit in warehouse
- Date of examination of suspect food
- Place of examination
- Amount (bags, cartons, weight) of food examined
- Amount of food fit for human consumption
- Amount of food unfit for human consumption
- Reason(s) why the food is unfit for human consumption
- Advice as to whether food is fit for animal consumption
- Advice as to whether food should be destroyed.

4.2 What to do with food unfit for human consumption?

When a commodity is declared unfit for human consumption or when the "Use by date" has passed, the options are limited. The Logistics department has first to consult the sanitary services or at least a lawyer to determine what the options in the country are and what the documents to obtain are.

Refer to the section III.2 regarding information to donor.

- 1 - Donation

- Donation to a governmental or charitable organization for use as animal feed or for other non-food use.
- Transfer to a livestock feeding program funded by the donor.

So far, there are no specific guidelines by donors on the donation of unfit food to local governments, individuals or organizations, other than food used for animal feed.

SC offices need to keep up-to-date information on programs which use unfit food and be satisfied that they are using the unfit food only for animal feed or fertilizer.

Files should be kept of all communications relating to the donation of the unfit food along with copies of waybills which show dispatches to the organizations receiving the unfit food.

The donation of unfit food shall be conditional to monitoring of recipients usage by Save the Children monitors.

- 2 - Sale

Sale for the most appropriate use (animal feed, fertilizer, or industrial use) at the highest obtainable price. When the food is sold, all donor markings shall be obliterated, removed or crossed out.

To minimize the possibility of impropriety and to maximize proceeds of the sale, it is recommended to hold a public tender whenever unfit food with a value greater than or equal to US\$5000 is sold.

A tender involves soliciting sealed bids, usually through public advertisement (often through a newspaper or the posting of handbills in public places).

If the offer cannot be publicly advertised, a sufficient number of parties known to buy damaged food for animal feed or fertilizer must be contacted to obtain the highest price.

In general, notice of tenders should contain:

- Description and amount of unfit food
- Location and date to submit offers
- Date bids to be opened and whether they will be opened in public or private
- Deposit, if required.

It is advisable to establish a committee of at least three persons to open the bids in the presence of the others. Ideally, members of the committee should come from offices separate from those involved in managing food resources. For example, a committee may consist of a project manager, financial controller and the assistant country director for administration and finance.

Precautions:

When food is donated or sold as animal feed or fertilizer, country offices must take measures to ensure that the local organizations do not re-sell the food for human consumption. Some suggestions for ensuring that unfit food is not re-sold include:

1. Inform the local police of the names of the organizations, dates and amounts of food purchased. Police enforcement, combined with clear instructions regarding punishment for those found selling unfit food for human consumption, may ensure that the food is not re-sold.
2. Begin a "public relations" campaign which informs the public of the dangers of humans consuming the food.
3. Have staff periodically go to the market to see if unfit food is being sold
4. Have staff periodically monitor the use of the damaged/unfit commodities at buyers location, the sale and transfer of the damaged commodities being conditional to this monitoring requirement.

- 3 - Destruction

Any food certified as unfit may be destroyed by burning or burying.

Local populations may not understand or be aware that the food is unfit for humans and animals. Thus, it could be perceived that Save the Children is destroying food intended for project participants.

If food is buried, even deeply, there is also a risk that people may later dig it up. The product should be made completely unattractive by impregnation with chlorine or simply with soaped water.

In destroying food, Save the Children must:

- Make every effort to ensure that the local population understands that the food cannot be consumed by animals or humans
- Make every effort to dispose of the unfit food as discretely as possible.

Once food has been destroyed, a Certificate of Destruction must be completed.

Part IV : Bookkeeping

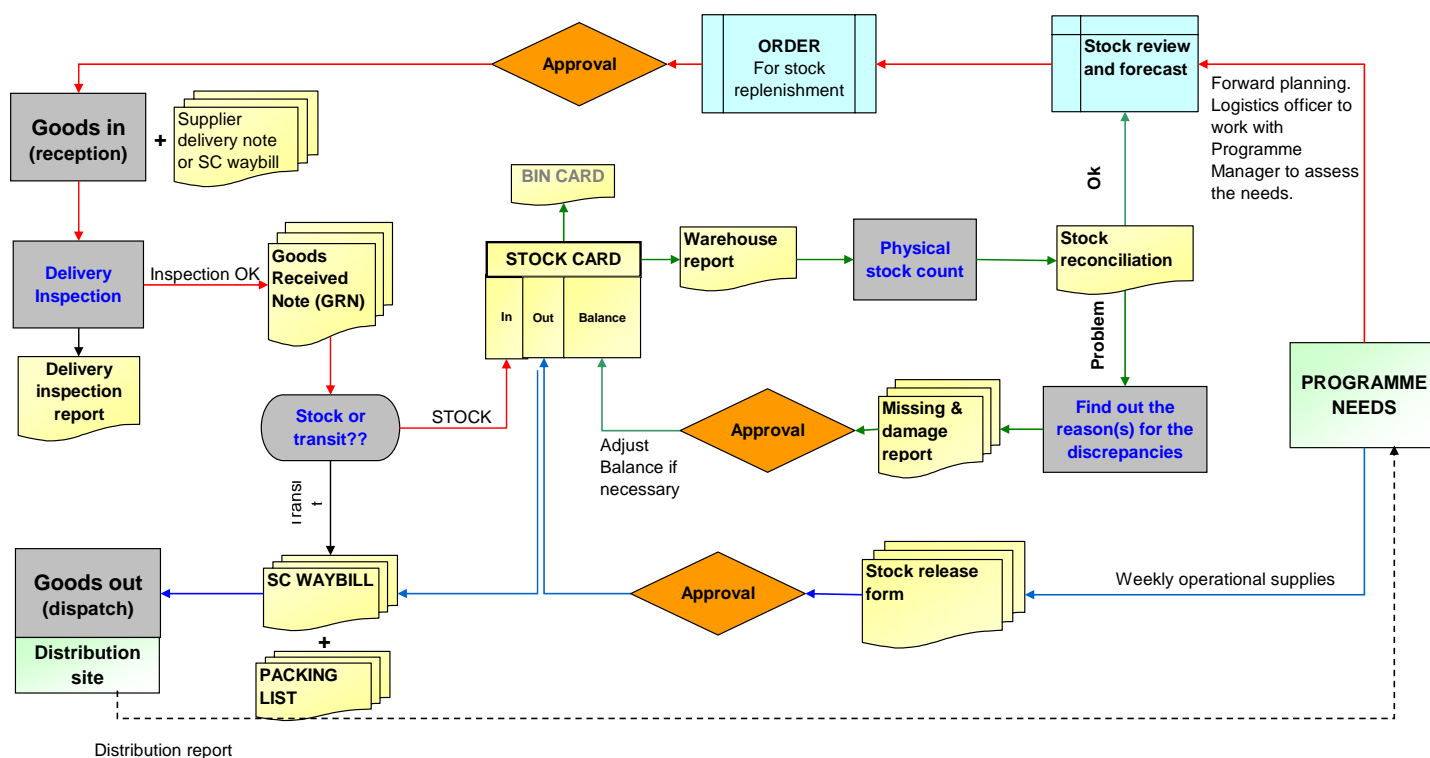
Bookkeeping principles and documents used for food items management are the same than the ones used for other SC warehouses.

Refer to SC STOCK MANAGEMENT Version 1, August 2006 (or a more recent release) for procedures and the correct manner to use the various documents.

IV.1 Global overview

Below is an overview of the information flow: process and documents for stock management. The only specific document is the Delivery Inspection Report that can be used to implement a systematic control of foodstuffs when they enter SC supply chain.

STOCK FLOW CHART



IV.2 Use of MS Excel database functions

We can only encourage Logisticians and storekeepers to use database principles to record information. Each column is a field (data) and each line is a record.

Database principles make possible the use of the **pivot table** function in MS Excel which is the quickest way to **sort** and to **sum** large amount of data.

Having a strict database type recording is fastidious in Excel, in many cases the recording is done in-between a full database and a classic table.

In this case the use of the **Sumproduct** function allows the sum on multiple criteria.

Below is an example of a database to record the movements of 10 items.

This database can be used instead of *13 Warehouse tracking.xls* of the standard SC stock management forms.

WAREHOUSE DATABASE

Auto	Validation	Date	Validation	Text	Text	Kg	Kg	Kg	Kg	Kg	EA	Kg	Kg	Kg	Kg	Text
Month	Type	Date	Origin / recipient	Vehicle plate number or ID	Waybill reference	Wheat	CSB	Sugar	Oil	Salt	Kitchen set	Item 7	Item 8	Item 9	Item 10	Remarks
10	Initial stock	01 Oct 07				50000	25000	13500	12500	5000	5000					Balance brought forward
10	OUT deliveries	15 Oct 07	Distrib Senje	6131 VW 71	SA DE 07 0215	250	100	100								
10	OUT losses	16 Oct 07				50										1 bag with fuel
10	OUT deliveries	17 Oct 07	Distrib Split	2548 AA 71	SA SP 07 0215	9850	2500	2500	500	50	1000					
10	OUT deliveries	17 Oct 07	Distrib Split	548 AA 71	SA SP 07 0216	7500	1375	950	400	50	0					
10	OUT deliveries	17 Oct 07	Distrib Split	6131 VW 71	SA SP 07 0217						35					
11	IN deliveries	01 Nov 07	Sarajevo	1001 VF 71	SJ SA 07 4528	15000	0	2500	0	0	0					
11	IN deliveries	01 Nov 07	Sarajevo	2548 AA 71	SJ SA 07 4529	0	2500	2500	0	500	0					
11	OUT deliveries	01 Nov 07	Distrib Kotor	2548 AA 71	SA SP 07 0217	6500	2500	1500	500	50	750					
11	OUT deliveries	01 Nov 07	Distrib Kotor	548 AA 71	SA SP 07 0218	5750	2500	650	500	50	450					
11	OUT deliveries	01 Nov 07	Distrib Kotor	6131 VW 71	SA SP 07 0219		25				75					

For each movement the storekeeper creates a line in the database.

Stock position

Warehouse : _____

Storekeeper : _____

From **01/10/2007** to **31/01/2008**
(Oldest date of the database) (Latest date of the database)

Only modify the column header in the sheet warehouse database

	Type	Kg Wheat	Kg CSB	Kg Sugar	Kg Oil	Kg Salt	EA Kitchen set	Kg Item 7	Kg Item 8	Kg Item 9	Kg Item 10
a	Initial stock	50000	25000	13500	12500	5000	5000	0	0	0	0
b	IN deliveries	67800	17500	15000	0	2000	2500	0	0	0	0
c	IN others	0	0	0	0	0	0	0	0	0	0
d	IN return from field	0	0	0	0	0	24	0	0	0	0
e	OUT deliveries	109750	37550	25900	9450	950	6750	0	0	0	0
f	OUT losses	50	0	0	0	0	0	0	0	0	0
g	OUT other	0	0	0	0	0	0	0	0	0	0
Stock position (a+b+c+d-e-f-g)		8000.0	4950.0	2600.0	3050.0	6050.0	774.0	0.0	0.0	0.0	0.0
Control		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok

Automatic calculation is OFF, press F9 to update the stock position

A stock position table calculates automatically the movements of each item

Month	10
Type	OUT deliveries

Origin / recipient	Data	Total
Distrib Senje	Sum of Wheat	250
	Sum of CSB	100
	Sum of Sugar	100
	Sum of Oil	
	Sum of Salt	
Distrib Split	Sum of Kitchen set	
	Sum of Wheat	17350
	Sum of CSB	3875
	Sum of Sugar	3450
	Sum of Oil	900
	Sum of Salt	100
	Sum of Kitchen set	1035

Pivot tables can sort the information as wanted

Part V : Re-ordering

The budget holders or Technical Programme Managers are responsible for ensuring adequate stock levels for the programme needs and for stock replenishment (re-ordering).

V.1 Principles

The calculation of quantities and preparation of the order can be delegated to the Logistics department but the validation of the order will always remain the responsibility of the budget holder. The reason is that “automatic” re-ordering has to be in line with the programme needs.

V.2 Definitions

Contingency stock (emergency stock): A quantity is kept in case an unpredictable event occurs and requires assistance. This quantity is totally independent from the buffer stock calculation. The contingency stock is determined by the technical program manager.

Buffer stock: It is the necessary quantity to have in stock to supply the current activities without shortages. The buffer stock includes the working stock (needs for normal activities) and reserve & anticipation (% of normal activities to cope with an increase of demand or delays in deliveries).

	Calculation
a) reserve & anticipation	Monthly needs x security factor
b) needs during the order period	Monthly needs x order period
c) needs during delivery lead time	Monthly needs x delivery lead time
BUFFER STOCK	a + b + c

The quantity to order for automatic re-ordering is then: Theoretical buffer stock – current stock - order(s) in progress

The “security factor” to determine the reserve & anticipation stock (minimal stock) depends on the shelf life of the items, the financial capacity and the essentiality of the product. When feasible the security factor should be equivalent to the delivery lead time.

The reserve & anticipation stock can be used as an indication of the minimal stock: when the physical quantity in stock is below that level the storekeeper must alert the logistician and budget holder.

V.3 SC tool

The Logistics department can use an Excel file (provided in the stock management forms) for the calculation of the quantities to re-order.



DATE	31/10/2007	ORDER PERIOD IN MONTHS	1	NAME	LOGISTICS OFFICER	PROGRAMME MANAGER
LOCATION	Geneva	DELIVERY LEAD TIME IN WEEKS	2	SIGNATURE		

Item no	Description	Unit	Packing	Current stock	In pipeline	Min. stock level	Emer. stock	Est. monthly need	Needs till delivery	Need per order period	Administrative order	Definite order	Est stock level on delivery	Weeks till stock out
1	SUGAR	KG	50 KG bag	650	300	250	100	500	250	500	50		600	7
2	CSB	KG	25 KG bag	725	300	250	100	500	250	500	0		675	7
3	WHEAT	KG	50 KG bag	3,950	3,500	2,500	1,000	5,000	2,500	5,000	2,550		3,950	5
4	VEGETABLE OIL	Litre	Plastic can 5 litres	350	250	250	100	500	250	500	400		250	4
									0	0	0		0	0
									0	0	0		0	0
									0	0	0		0	0
									0	0	0		0	0
									0	0	0		0	0
									0	0	0		0	0
									0	0	0		0	0

This Excel tables calculates the quantities to re-order per items.

This tool is **from a site or warehouse perspective**, with the objective to prevent shortage at the local level.

The Logistics departments can refer to the guideline Food management Procurement and Quality assurance for the overall pipeline forecast and follow-up

Part VI : References & Websites

Bibliography

- WFP Food Storage Manual.
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Websites

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www.usaid.gov/our_work/humanitarian_assistance/ffp/crg/intro.htm#top
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