

AGRIBUSINESS SERIES

Export Handbooks

EXPORT LOGISTICS
FOR FRESH AND
PROCESSED
PRODUCTS



Inter-American Program for the Promotion
of Trade, Agribusiness and Food Safety

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EXPORT LOGISTICS FOR FRESH AND PROCESSED PRODUCTS

*Daniel Rodríguez Sáenz,
Connie Cruz
and Frank Lam*

Inter-American Program for the Promotion of Trade,
Agribusiness and Food Safety

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One of the objectives of the Agribusiness Competitiveness Directorate of the Inter-American Institute for Cooperation on Agriculture (IICA) is to assist the countries in identifying and tapping market opportunities, and to support the efforts of public and private institutions that work to strengthen the competitive development of agribusiness.

In January 2004, IICA launched the Inter-American Program for the Promotion of Trade, Agribusiness and Food Safety, with offices in Miami, Florida, United States of America. Its mandate is to increase technical cooperation to small- and medium-sized agribusinesses in IICA's member countries, in order to upgrade their business capabilities, identify trade opportunities, and make information available to facilitate decision-making that will promote trade.

To date, the program's activities have helped identify a set of needs or priority issues that are shared by small- and medium-sized agribusinesses throughout the Americas. These priority issues are analyzed in the publications of IICA's Agribusiness Series, which aim specifically to upgrade the competitiveness of small- and medium-sized agribusiness operators in the hemisphere. The Export Handbooks are a subgroup of that series, which address concepts and ideas to facilitate decision-making for those interested in successfully integrating their agribusinesses into international markets.

This publication is envisioned as a quick reference guide for exporters that covers the basic elements of the logistics involved in the export of agricultural products. We trust that small- and medium-scale agribusiness operators will find it useful as a permanent reference tool, and will continue to strive to strengthen their competitiveness and improve their living conditions.

Sincerely,

Miguel García Winder
Director of Agribusiness Competitiveness
Inter-American Program for the Promotion of Trade,
Agribusiness and Food Safety
IICA Office in Miami

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The term **logistics** was originally used to refer to the branch of military science that deals with the procurement of equipment and materials for a mission, and to the efficient mobilization of data and supplies.

Logistics now refers to procedures that range from the procurement of raw materials to the delivery of end-products to consumers, and includes the planning process, implementation, and integration. In other words, it covers everything from the planning of production, to packaging and packing, transportation, inventory management, processing of purchase orders, and information management throughout the entire supply chain, with the aim of making products available to consumers rapidly, economically, and reliably.

To participate successfully in international markets, export firms must ensure that they deliver the correct order, comply with agreed to specifications and quality, and deliver their products on time. Good logistics will make this possible, as it will help:

- Maximize the effectiveness of a firm's export process.
- Avoid the payment of fines or surcharges by freight forwarding companies, customs agencies, and even the clients themselves.
- Find the best cost options or, at the very least, keep within the original budget.
- Obtain repeat orders through good performance.
- Maintain good trade relations with clients.
- Create a positive image with clients as a reliable, capable, and professional supplier.

Good logistics have a direct bearing on good performance, both in the production process and in the distribution process.

Those responsible for production must: a) have a very clear idea of production and harvest times since they will be the basis for negotiating purchase orders with clients; b) ensure that the quality of the product received by the client is exactly the same as the sample or description agreed upon at time of purchase; and c) ensure sound management

of the supply chain, inventories, raw materials, quality, machinery and equipment, work areas, and employees in general.

Those responsible for distribution will define what materials will be used for packaging and packing, select the modes of transportation, and prepare the products for shipment. These four elements are essential to the export process and are the focus of this guide.

PACKAGING AND PACKING

Recipients, packaging, and packing are required to ensure the physical protection of the product; their purpose is to guarantee that goods reach their destination in the conditions set out in the contract.

“Recipient” is defined as the material that contains or protects a product and that is an integral part of it. Recipients, also known as “primary packaging” or “sales packaging,” are used to protect goods and to distinguish them from other goods, and can come in the form of cans, boxes, tubes, and different types of wrapping. For the purposes of this guide, the recipient will be considered part of the packaging.

“Packaging” is defined as any material that contains an article, with or without a recipient, in order to preserve it and facilitate its delivery to consumers. Packaging is also known as “secondary packaging” or “collective packaging.”

“Packing” refers to all materials, procedures, and methods used to prepare, present, handle, store, conserve, and transport a good from the factory or packaging plant to the end consumer.

A good selection of packaging and an effective packing process will help increase exporters’ competitiveness in international markets.

■ PACKAGING

In choosing packaging it is important to be aware of its basic functions, which include:

- **To contain a certain amount of a product.** Packaging should be designed to contain a specific amount of a product in an efficient and quantifiable manner.
- **To protect the product.** Packaging should ensure that the product remains in perfect condition until it reaches the end consumer.
- **To aid in product handling and distribution.** Packaging design should facilitate the handling, storage, and stacking of the product.

Packaging also helps create a positive product image. Therefore, its design should be attractive and functional, enabling consumers to easily identify and differentiate it from the competition. Packaging is not only important for processed products; fresh produce is increasingly being packaged as a mechanism for market differentiation and consolidation.

The basic function of packaging is to contain, protect, and facilitate the handling of the goods, and none of these considerations should be sacrificed for the sake of appearance. Also, always bear in mind the standards, packaging and labeling regulations of the destination market when designing a package.¹

Table 1 shows the materials most commonly used to manufacture packaging, along with a brief description of their advantages and disadvantages.

Table 1. Materials used to manufacture packaging for fresh and processed food products: advantages and disadvantages

Material	Main advantages	Main disadvantages
<i>Corrugated board</i>	<ul style="list-style-type: none"> • Strong resistance to crushing • Easily printed. • Can be folded for storage, requiring less storage space. • Good cost/quality ratio • Can be recycled. 	<ul style="list-style-type: none"> • Humidity can change its mechanical properties; this risk can be reduced by using wax-coated board. • Cardboard boxes are less resistant than other types of boxes.
<i>Wood</i>	<ul style="list-style-type: none"> • Strong resistance to shocks, water, and moisture. • Can be reused. 	<ul style="list-style-type: none"> • Cost. • Inconsistent resistance. • Requires more effort and more space for storing.

1 See Export Handbooks 1, 2 and 3 of the Agribusiness Series, which provide information on the primary import requirements of the United States, the European Union, and Canada, respectively, for fresh and processed agricultural products.

Material	Main advantages	Main disadvantages
<i>Metal</i>	<ul style="list-style-type: none"> • Good mechanical resistance. • Minimum chemical interaction between metal containers and food. • Stable and impervious. • Good opacity (blocks light). 	<ul style="list-style-type: none"> • Since metal containers are pre-formed, transportation and storage costs are higher due to greater volume. • Come in standardized forms.
<i>Paper</i>	<ul style="list-style-type: none"> • Ideal for printing. • Easy to shape. • Easy to store. • Can be recycled. 	<ul style="list-style-type: none"> • Poor barrier to liquids, oils, fats. • High water absorption capacity (hygroscopic).
<i>Plastic</i>	<ul style="list-style-type: none"> • Minimum chemical interaction between the container and food. • Lightweight, flexible, and versatile. • Good mechanical resistance. • Can be recycled. 	<ul style="list-style-type: none"> • Permeable by gas and radiation. • Thermostability can be a problem.
<i>Glass</i>	<ul style="list-style-type: none"> • Clean, pure, and hygienic material; inert and waterproof for normal purposes. • Resists internal pressure and high temperatures. • Can be stacked without crushing. • Consumers can see the contents and the product's appearance. 	<ul style="list-style-type: none"> • Heavy and large volume, which can pose storage problems. • Fragile.
<i>Composite (two or more materials)</i>	<ul style="list-style-type: none"> • Adapted to the specific needs of the product, depending on the qualities of component materials. 	

Source: Prepared by Daniel Rodríguez

See Annex 2 for photographs of different types of packaging made from different types of materials.

Given the broad range of packaging available, consider the following before making a decision:

1. Find out all you can about the product to be packaged and its requirements throughout the distribution chain.
2. Find out about the trends and requirements in target markets.
3. Find out about and study the different materials that can be used to package the product.
4. Design the package taking into account the product, the market, and the material chosen. Consider the following criteria, among others: structural design, form, and style; graphic design, layout, and colors; measures (international metric or U.S. equivalent for the United States market); regulations on required information, required units, and sizes allowed.
5. Conduct real market tests before making a final decision.
6. Adjust packaging to take into account test findings.
7. Launch product on the market.

Be aware that choosing packaging with higher specifications than the required can represent an unnecessary cost; at the same time, packaging that does not meet specifications can put product integrity at risk.

See Annex 1 for a checklist on the planning of transport packages published by the International Trade Centre (UNCTAD/WTO) in its *Export Packaging Note No.17*.

■ PACKING

Packing protects the product while in transit from one place to another, as of the moment it leaves the storeroom until it reaches the client's door. It must

therefore be very well thought out and take into account the characteristics of the product, the strength and availability of materials, the cost and value of freight, and buyers' requirements and specifications.

Agrifood products are normally packed in corrugated boxes, wooden boxes (for certain fresh products), and loaded on pallets. (See Annex 3 for photographs of boxes most commonly used to ship fruits and vegetables.)

Corrugated boxes are most frequently used because they come in designs suited to the needs of different products, for example: one-piece, two-piece with cover, "bliss" style, one-piece and two-piece telescopic, and tray designs.

In choosing the right box, it is important to be familiar with the different types of corrugated board: single-face, single-wall, or double-wall; the latter is the strongest.

The waves or flutes of corrugated board must also be taken into consideration. They come in four sizes, depending on the height of the flute: A (0.467 cm), B (0.246 cm), C (0.361 cm), and D (0.114 cm). The shorter the flute, the less able the box is to absorb shock but the greater its capacity to withstand crushing.

To transport products weighing more than 10 kg, BC or BA flute double-wall corrugated board is usually used, either in single-piece boxes, or in the lower half of two-piece boxes. For lighter contents, B or C flute single-wall boxes are used.

Corrugated boxes require careful storage and should be protected from humidity, heat, and direct sunlight. Proper box assembly is of key importance: check that bottoms are securely fastened and do not bend box walls. When packing, do not allow contents to press against box walls and make it bulge since this will weaken the resistance of the corrugated board.

Use wax-coated cardboard boxes for products that are moist, or packed in ice. They not only better protect the product, they also prevent moisture loss. If air ventilation and circulation is needed, the boxes should have pre-cut holes.

Fresh produce is commonly shipped in wood boxes because they are stronger and the products so packed better withstand pre-cooling,

shipping, and storage. Wood boxes are normally constructed to allow for air circulation around the product.


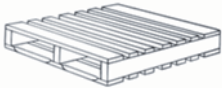

Materials such as pads, wrapping, and sleeves, paper, wood shavings and ice are commonly added to both types of box (corrugated carton and wood) to increase the level of protection. See Annex 4 for illustrations of same.

Pallets are another important element in export packing. Pallets can be made of wood, corrugated board, plastic, or metal. To select the most suitable pallet, consider the weight of the load, climate, durability, local availability, cost, and acceptance in the destination market.

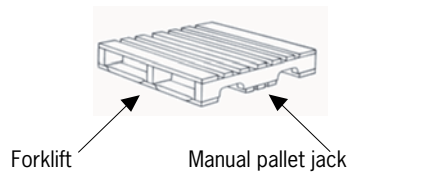
The benefits of using pallets include reduced use of labor in storage, shipping, and distribution processes; reduced damages to products; and increased utilization of storage space.

The most commonly used pallets are shown below:

Table 2. Most commonly used pallets

<i>Type</i>	<i>Design</i>
Single-face pallet (most used); also referred to as a skid.	
Double-faced pallet (very strong)	
Two-way pallet (for loading), can be single- or double-faced. Allows for forklift or manual pallet jack entry on two of the four sides.	

Four-way entry pallet (for loading), can be single- or double faced. Allows for pallet jack entry from all four sides. Facilitates loading of containers and helps maximize space use in container.



Source: Prepared by Daniel Rodríguez.

The standard size of a pallet in the United States and Canada is 40" x 48" (1016 mm x 1219 mm), while in Europe it is 1000 mm x 1200 mm.

Table 3 shows the most frequently used pallet sizes, by ISO standards and as used in the United States and Canada.

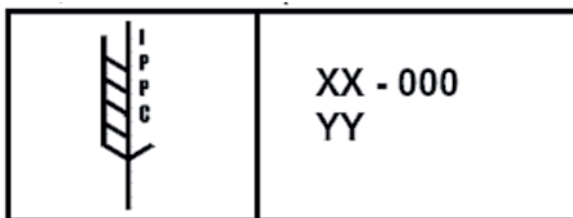
Table 3. Dimensions of most frequently used pallets: ISO standard sizes and United States and Canada sizes

ISO standard sizes				Sizes used in United States and Canada			
Millimeters		Equivalent inches		Equivalent inches		Millimeters	
Width	Length	Width	Length	Width	Length	Width	Length
800	1000	31,5	39,4	32	48	813	1016
800	1200	31,5	47,3	40	48	813	1219
1000	1200	39,4	47,3	48	64	1016	1219
1200	1600	47,3	63,0	48	72	1219	1629
1200	1800	47,3	70,9	32	40	1219	1829

Source: Safe Stowage. Guide for Exporters. Department of Foreign Affairs and International Trade, Canada. 2000.

Boxes and wooden pallets are required to comply with International Phytosanitary Measure No. 15 (IPSM 15), which establishes that all wooden packaging must be specially treated to prevent insects from entering the load, and that wooden packaging must be marked with a seal of compliance for this treatment. This regulation was accepted by the Interim Commission for Phytosanitary Measures of the International Plant Protection Convention (IPPC) in March 2002, amended in Annex 1 of 2006.

Two types of processes were approved for treating the wood: heat treatment and fumigation with methyl bromide. Once treated, the following seal should be marked on the packaging:



- The symbol on the left is the logo of the International Plant Protection Convention (IPPC).
- XX refers to the ISO code of the country where the wood was treated.
- 000 is the number assigned by the National Plant Protection Organization (NPPO) to the producer of the packaging.
- YY refers to the treatment used (HT= heat treatment, MB= methyl bromide fumigation).

THE INTERNATIONAL TRANSPORT OF GOODS

A good transportation plan serves to ensure that export products move along the distribution chain efficiently and at the lowest possible cost, thereby increasing the exporter's competitiveness.

This section analyzes the modes of transport most commonly used for the international shipment of goods, their advantages and disadvantages, and the correct way to calculate transportation costs. It offers recommendations on how to select a carrier and discusses how quotations and rates work.

■ INTERNATIONAL MODES OF TRANSPORT

The means of transport most commonly used for the international trade of agrifood products are land, ocean, air, and rail. Multimodal transport is

the term used when more than one means of transport is used. This section focuses on land, ocean, and air transport, as they are most commonly used by agroexport companies in Latin America and the Caribbean.

Land transport

The principal advantages of land transport include ease of door-to-door product delivery using a single mode of transport; the flexibility afforded both by the wide variety of vehicles adapted to the requirements of different products, and the greater flexibility of travel schedules; and, finally, the speed and ease of combining land transport with other modes of transport.

For these reasons, land transport plays a key role in the export of agrifood products both between neighboring countries and between distant countries. Land transport is normally used between a packaging plant and the buyers' warehouse or points of sale, and from a port or airport to the buyers' warehouse or points of sale. These two types of transportation are known as surface transport or inland transport.

There are two basic types of land transport: full truckload (TL), and less-than-truckload (LTL). Full-truckload service is usually contracted "door to door," that is, from the seller's warehouse to the buyer's warehouse. With less-than-truckload service, a carrier collects products from different individuals or firms and takes them to a common location, from where they are redistributed.

Land transport rates are based on distance as well as product quantity, weight, density, volume, value, and sensitivity to damage.

Following is a table showing the most commonly used truck sizes, with the maximum weights and volumes they can transport. The section on ocean shipping discusses the most commonly used containers that can also be used for land transport.

Table 4. Most commonly used truck sizes for land transport

	2 TON	4 TON	8 TON	10 TON
Maximum weight of load, in kilograms	1814	3628	7257	9071
Maximum volume of load, in cubic meters	7.07	14.15	28.31	33.98

Source: Prepared by Connie Cruz

Sea transport

Although it is the slowest mode of transport currently available, sea transport continues to be the most economical and efficient (from the standpoint of energy consumption) for transporting very large and very dense volumes of cargo, especially commodities, over long distances.

A container is defined as a permanent, reusable, non-disposable shipping conveyance. It is designed to facilitate the transport goods; it eliminates the need for in-transit loading and unloading, and is capable of being handled and moved by different modes of transport.

Table 5 summarizes the types of containers most commonly used to transport agrifood products:

Table 5. Most commonly used containers for the international transport of agrifood products

	20' dry container		40' dry container		40' dry container high cube		40' refrigerated container (reefer)	
	U.S. system	International metric syst.	U.S. system	International metric syst.	U.S. system	International metric syst.	U.S. system	International metric syst.
Maximum load weight	47,839lb	21,700kg	59,000lb	27,000 kg	63,000 lb	29,000 kg	56,878 lb	25,800 kg
Maximum load volume	1,165 ft ³	33 m ³	2,330ft ³	66 m ³	2,684 ft ³	76 m ³	1,906 ft ³	54 m ³
Container width	7.8 ft	2.34 m	7.8 ft	2.34 m	7.8 ft	2.34 m	7.40 ft	2.24 m
Container length	19.5 ft	5.919 m	39.6 ft	12.05 m	39.6 ft	12.05 m	36.9 ft	11.20 m
Container height	7.9 ft	2.38 m	7.9 ft	2.38 m	8.9 ft	2.68 m	7.20 ft	2.18 m

Source: Prepared by Connie Cruz and Daniel Rodriguez

Air transport

In general, aircraft can take less weight per shipment than other modes of transport. Air transport is generally used when delivery time is a key factor in product competitiveness. This is the fastest mode of transport for long distances. Although it is the most expensive, it is often used to ship very perishable, high-value products.

Some passenger planes transport cargo in their holds, but cargo planes are dedicated to transporting cargo.

The technical limitations of air transport include maximum weight allowed, strength of cargo-hold floor, door size, and flight autonomy.

As in the case of sea and land transport, air transport uses loading devices such as pallets and containers, also known as unit load devices (ULD), which are shaped to fit the fuselage of the aircraft.

The tables below show the types of containers most commonly used in the air transport of refrigerated cargo, dry cargo, and palletized cargo.

Table 6. Most commonly used refrigerated air cargo containers

<i>Container</i>	<i>Maximum cargo weight (kg)</i>	<i>Internal measure (mm)</i>	<i>Useable volume (m3)</i>	<i>Aircraft</i>
LD3	1,400	1460 x 1430 x 1410	3.5	747, L1011, DC10, A300, A310, 767
LD 7/9	5,450	2940 x 2020 x 1430	8.6	747, L1011, DC10, 707 and DC8
LD 5/11	3,200	2940 x 1430 x 1430	6.0	747, L1011, DC10

Source: USDA. Office of Transportation. *Agricultural Handbook No. 668. Tropical Products Transport Handbook. 1987.*

Table 7. Most commonly used dry air cargo containers

<i>Container</i>	<i>Maximum cargo weight (kg)</i>	<i>Internal measure (mm)</i>	<i>Useable volume (m³)</i>	<i>Aircraft</i>
LD3	1,500	1450 x 1453 x 1550	4.3	747, L1011, DC10, A300, A310, 767
LD 7/9	4,350	2160 x 3100 x 1550	10.0	747, L1011, DC10, 707 and DC8
LD 11	2,900	1470 x 3100 x 1550	7.0	747, L1011, DC10

Source: USDA. Office of Transportation. *Agricultural Handbook No. 668. Tropical Products Transport Handbook. 1987*

Table 8. Most commonly used palletized air cargo containers

<i>Container</i>	<i>Maximum cargo weight (kg)</i>	<i>External measure (mm)</i>	<i>Useable volume (m³)</i>	<i>Aircraft</i>
P1P	4,500 (supplied with cargo nets)	2240 x 3180	10,0	747, L1011, DC10, A300
P6P	4,500 (supplied with cargo nets)	2430 x 3180	747, L1011, DC10, A300	747, L1011, DC10, 707 y DC8
P9P	3,090	1530 x 3180 Maximum height: 1630 mm	8.0	747, L1011, DC10, A300

Source: USDA. Office of Transportation. *Agricultural Handbook No. 668. Tropical Products Transport Handbook. 1987.*

Multimodal transport

This refers to the transport of intermodal transport units (ITU), that is, containers, boxes, and pallets that can be shipped, with a single shipping document, by completely different modes of transport without having to alter or divide up the load.

Multimodal transport can be arranged in two ways: a) the exporter obtains the quotations, negotiates with each carrier, and prepares the documentation; and b) a third party (a carrier or forwarding agent) takes charge of the entire operation.

■ ***CARGO CONSOLIDATION***

Cargo consolidation consists of grouping small quantities of compatible products, from different suppliers, into a single cargo unit for shipment to another destination point. Once there, the cargo is unloaded and delivered to the corresponding consignees. The term used to refer to cargo consolidation is less than container load (LCL).

This option, which can be used in any mode of transport, is used to transport small quantities of products when it would be unprofitable to hire a vehicle or a complete container for that purpose. It is a valid and attractive option for small and medium-scale enterprises, and for companies that are just beginning to export.

■ ***SELECTING THE MODE OF TRANSPORT***

In selecting a mode of transport, it is important to determine how the qualities of each will affect the shipment. The following should also be taken into account:

- Product destination.
- Distance to final destination.
- Shipment capacity.
- Product value.

- Product quantity.
- Product perishability.
- Travel time.
- Shipping cost.
- Traceability (the possibility of monitoring the shipment).

As explained above, each mode of transport offers advantages and disadvantages. The specific needs of each company and each product will, in the final analysis, determine which mode of transport (or combination of modes of transport) best meets its needs.

Although various shipping arrangements are available, it is recommended that a freight forwarder or a customs agent be hired to help select the mode of transport and to take care of all necessary shipping procedures. In doing so, consider the following:

- Are they interested in the specific details of your company, for example, its operational policies and priorities?
- Have they made an effort to find out about your industry?
- Have they invested in staff and technology to ensure efficient information sharing?
- Do they have certificates or diplomas showing participation in refresher courses in their field?
- Are they willing to exchange information, do they have the capacity to do so, and do they always conduct themselves in a transparent and professional manner?
- Do they maintain communication channels open at all times and offer more than one way to be contacted (in case of emergency)?

■ *QUOTATIONS AND RATES*

Shipping rates tend to confuse new exporters because they usually include surcharges. Make sure to ask the freight forwarding agent or customs agent to provide a full quotation, including surcharges.

Factors that normally need to be taken into account when considering sea and air transport rates are described below.

Maritime shipping rates

Sea transport costs consist of a basic rate plus a series of surcharges. Surcharges are the additional costs incurred in providing the service and which are beyond the control of the freight forwarding company:

- Fuel surcharge.
- Port surcharges.
- Cargo handling surcharge at place of destination.
- Preparation of waybill.
- Other surcharges: handling of special goods.

Be aware that discounts can always be negotiated depending on the volume and frequency of shipments, and loyalty to the freight forwarding company.

Freight forwarders calculate rates by weight and by volume; they then select the rate that is most beneficial to them. The weight/volume ratio is known as the "stowage factor" (SF), which is obtained with the following formula:

$$\mathbf{SF = volume/weight}$$

This value is normally calculated using the metric system, making the formula:

$$\mathbf{SF = m^3/mt}$$

The result is expressed in cubic meters per metric ton. If the SF is greater than one (1) cubic meter per metric ton, the forwarding company will choose the volume-based rate and not the weight-based rate.

Following is an example of the calculation for SF for sea shipping:

Formula: SF = volume/ weight

The volume of the goods is 30 m³ and its weight is 15 metric tons.

$$\text{SF} = 30 / 15 = 2 \text{ m}^3 / \text{mt}$$

Since the stowage factor is greater than 1 m³/mt, the forwarding company will choose the volume-based rate, unless it is negotiated otherwise.

Air transport rates

These rates vary by distance, how the service is contracted, shipment size, and whether it will use regular or chartered flights.

Market supply and demand determine airfreight charges. Freight is paid in dollars according to gross weight or volumetric weight, whichever is most beneficial to the airline. Airlines also charge a fuel service surcharge. As in the case of sea transport rates, discounts can be negotiated on the basis of volumes, shipping frequency, and loyalty to the airline.

The formula used to calculate volumetric weight is shown below (using the metric system for purposes of illustration).

Formula for volumetric weight: height (cm) x width (cm) x depth (cm) / 6000

A shipment measures 90 cm in height, 200 cm in width and 80 cm in depth and weighs 85 kg. How will the airline set the price? By gross weight or volumetric weight?

Gross weight: 85 kg

Volumetric weight: $90 \times 200 \times 85 / 6000 = 255 \text{ kg/volume}$

Because the volumetric weight is greater than the gross weight, the company will charge the rate for volumetric weight.

■ *INCOTERMS*

International Commercial Terms (INCOTERMS) are a series of international sales terms widely used throughout the world for the transport of export products. They are used by buyers and sellers to conduct international business transactions, regardless of destination, mode of transport, insurance, or product transported.

The terms are represented by 13 acronyms recognized as a contractual code by the customs authorities and courts of the principal trading countries.

INCOTERMS serve to:

- Eliminate barriers posed by language, distance, business culture, and business practice
- Eliminate uncertainty
- Facilitate the international trade of goods
- Spell out responsibilities related, for example, to risk of loss, terms of delivery, export licenses, customs clearance, and transportation and insurance contracts

INCOTERMS establish rights and responsibilities between a buyer and a seller with regard to the delivery of tangible goods sold. They do not replace the bill of sale; rather, they supplement it.

INCOTERM definitions can be found in the table below.

Table 9. INCOTERMS

Incoterm	Definition
<i>GROUP E: Departure</i>	
EXW	Exporter delivers the product to a named place (warehouse, packing plant, etc.) and buyer is responsible for loading, transportation, as well as export and import formalities, which are covered by the importer.
<i>GROUP F: Main carriage not paid by seller</i>	
FCA	Free Carrier: Seller delivers the products, cleared for export, to the principal carrier nominated by the buyer at the named place. If delivery occurs at the seller's premises, the seller is responsible for loading. If delivery occurs at any other place, the seller is not responsible for loading.
FAS	Free Alongside Ship: The seller delivers when the goods are delivered alongside the vessel at the named port of shipment. The buyer bears all risks and costs from that point. The exporter must clear the goods for export.
FOB	Free on Board: The seller delivers when the goods pass the ship's rail in the named port of shipment. The buyer selects the ship and pays the freight. The seller must clear the goods for export.
<i>GROUP C = Main carriage paid by seller</i>	
CFR	Cost and Freight: The seller must pay the costs and freight necessary to deliver the goods to the named port of destination. Risk is transferred from the seller to the buyer once the goods have been delivered onto the vessel. The seller must clear the goods for export. The buyer pays for the insurance.
CIF	Cost, Insurance and Freight: The seller must pay the costs, freight, and ocean insurance covering loss of or damage to goods. The seller is obliged to obtain insurance only on minimum coverage. The seller is required to clear the goods for export. It is recommended that the buyer obtain extra insurance coverage.
CPT	Carriage Paid To: The seller contracts and pays for the freight to the named destination. The risk of loss of or damage to goods is transferred when the goods are delivered to the first main carrier nominated by the seller. The exporter must clear the goods for export.

Incoterm	Definition
CIP	Carriage and Insurance Paid To: The seller must pay the freight and contract for insurance and pays the insurance premium. The risk of loss of or damage to goods is transferred when the goods are delivered to the first main carrier nominated by the seller. The seller is only required to contract for minimum insurance coverage and to pay the insurance premium. It is recommended that the buyer purchase extra insurance.
<i>GROUP D = Arrivals</i>	
DAF	Delivered at Frontier: The seller delivers when the goods are available at the named place on the frontier but before the customs border of the adjoining country. The seller is not responsible for unloading the goods. Used primarily in land transport.
DES	Delivered Ex Ship: The seller delivers when the goods have been made available to the buyer on board the ship not cleared for import at the port of destination. The seller is not responsible for unloading the goods. Only applies when goods are delivered by sea.
DEQ	Delivered Ex Quay, Duties Paid: The seller delivers when the goods have been made available to the buyer discharged on the wharf. The buyer is responsible for clearing the goods for import and for all costs after discharge. Only applies when goods are delivered by sea.
DDU	Delivered Duty Unpaid: The seller delivers when the goods have been made available to the buyer at the named place in the importing country. The seller is not responsible for unloading. The seller has to bear the costs of bringing the goods to the named place. The buyer bears the additional costs (duties, taxes and other official fees).

Source: Prepared by Daniel Rodríguez

The following table shows which INCOTERMs apply to the different modes of transport.

Table 10. INCOTERM by mode of transport

Mode of transport	Applicable Incoterm
All modes of transport, including multimodal	EXW, FCA, CPT, DAF, DDP
Only applies to sea shipping	CIP, DES, FAS, FOB, CFR, CIF

Source: Prepared by Daniel Rodríguez

PREPARING THE SHIPMENT

Because poorly packed cargo can be damaged during transportation, packaging must be able to withstand:

- Rough handling during loading and unloading.
- Compression from the overhead weight of other products.
- Impact and vibration during transportation.
- Humidity loss.
- Higher or lower temperatures than recommended.
- Odors from other goods or waste products.

Bad weather during sea transport, poor roads in land transport, and stop and go traffic can jolt the cargo and move the cargo quite a bit. Exporters must be aware of the potential motion and impact that is caused during transit.

- During packing and stowing: improper forklift or manual pallet jack operations; pushing or dragging when inadequate handling equipment or inexperienced personnel are used; poor management of weight; long-term storage, which can lead to crushing; sharp temperature changes caused by exposure to extreme temperatures.

- During land transport: excessive braking and acceleration, sharp shocks and vibrations due to road or climate conditions, accidents, reckless driving
- At the terminal: high vertical acceleration, braking and acceleration, shocks and vibration, swaying
- During sea shipping: ship motion and wave impact, extreme temperatures

Goods need to be prepared to withstand the toughest leg of the distribution chain, and this is achieved with correct packing. Packing also impacts directly on stowage conditions in the modes of transport selected. For exporters to be competitive, they must carefully design a loading strategy for their products.

■ *PACKING*

Begin the packing process by determining all the damages that can occur to the product during transit due to factors such as: Fragility, surface finish, rigidity, weight, size and quantity of goods to be packed. Assess the susceptibility of the product and packaging to water and temperature. Once you have identified possible risks, you can take action to eliminate or at least diminish the risk.

Bear in mind that goods can also be damaged by poor pre-packing handling. Before packing, make sure that goods are clean and dry, protect them in the best possible way, and check them carefully.

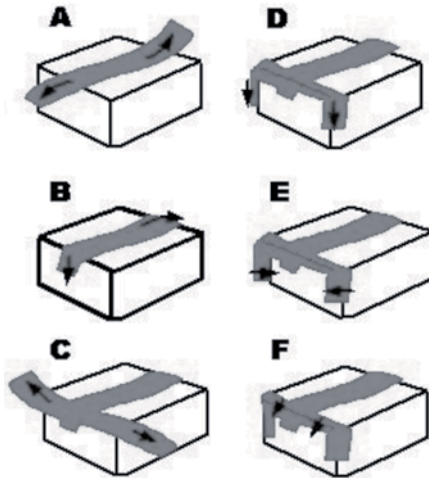
The following section discusses other important stages of the packing process: Closing boxes, loading pallets, loading goods into the container, and dispatching the merchandise. Recommendations are also given for meeting the special needs of fresh products.

Closing boxes

Corrugated boxes are among the most commonly used packaging for the export of food products, both fresh or processed.

One of the first challenges that arises when packing processed products is to decide what material will be used to close the boxes. You should consider if it is strong enough to ensure that boxes do not open during transit, but also factors such as cost, ease of application, sealing speed, and sensitivity to humidity must also be considered. Materials most commonly used are glue, adhesive tape, staples, and wrapping.

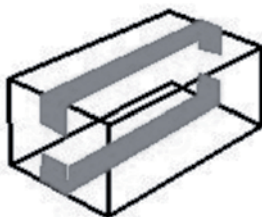
Although gluing a box is the most secure way to close boxes, adhesive tape is normally used because of the speed with which it can be applied. It is recommended that 6 pieces of adhesive tape be used to secure boxes, with the tape extending at least 5 cm over the ends of the box, as shown below.²



If reinforced paper tape is used, only two strips are needed to close the boxes; tape must extend 8 cm or more over the ends of each cover, as shown below.

2 Figures taken from www.dhl.com.mx. Rights reserved © 2008 DHL International, GmbH. All rights reserved.

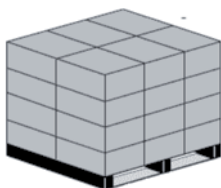
Check with the buyer before deciding to use staples to close boxes. Some companies do not accept stapled boxes because the staples must be removed before recycling, representing an additional cost for the company.



Loading pallets

Although products can be shipped without pallets, pallets provide greater protection to goods during transit and storage.

When using pallets, make sure to take precautions to ensure that cartons or boxes do not collapse under the weight of superimposed pallets if they are going to be stacked, and they usually are. Pallets are usually loaded as per the two patterns below:



Vertical (columnar)



Interlocked

Follow these instructions to load a pallet:

- Make sure the pallet has an adequate number of top boards to support the weight of the boxes.
- Do not use pallets with wide spacing between deck boards; if box corners are not supported by a deck board, they lose 50% of their strength.

- The bottom of the pallet should not block air circulation.
- Use four-way entry pallets to facilitate loading.
- Use the vertical pattern for stacking because it ensures that box corners are directly over each other; this ensures greater box strength.
- Don't interlock boxes if pallets are to be stacked. More than 50% of a box's strength is lost if its corners are over the center of the box below.
- Make sure the boxes completely fill the pallet; if not, they may shift during transit.
- Box edges should not overhang the edge of the pallet as this can reduce box strength by up to 33%. It can lead to collapse of the entire load, crushing of the product, and make loading and unloading difficult.
- Stabilize pallets with film wrap and straps. Film wrap should not be used if the products require ventilation.
- Pallet loads that are not strapped or netted should have at least the three top layers of boxes cross-stacked to provide stability.

See Annex 5 for photographs of pallets stacked with both the vertical and interlocked patterns. It also shows pictures of loaded pallets using straps and corner posts.

THE LOADING PROCESS

■ PHYSICAL INSPECTION BEFORE LOADING

Sometimes shipments are pre-staged on the shipping floor; other times, boxes are loaded directly as they exit the production process or the packaging plant. In either case, the loading process should begin with a final physical inspection to check the load for:

- Spills.
- Holes or rips.
- Stains.

- Strange noises or rattling (indicates broken product).
- Crushed or collapsed cartons.
- Broken pallets.
- Protruding objects.
- Protruding nails in pallets.
- Damaged shrink wrap.

The condition of the transport equipment is critical for maintaining the quality of the products. Therefore, before loading the pallets into the container, shippers should check the equipment for any problems that may affect the goods or represent a safety hazard for workers. If any such problems are detected, the equipment should not be accepted and another one requested from the carrier. Additional factors to be evaluated are:

- Cleanliness. A load of products can be ruined by odors from previous shipments, toxic chemical residues, insects, decaying remains of agricultural products, or debris blocking drain openings or air circulation along the floor.
- Soundness of the container. Check that there are no cracks that can let water seep in or cold to escape, in the case of refrigerated containers. If the container has been repaired, check that the seal is airtight.
- Required accessories. Make sure that the container has the devices needed to properly brace loads. In the case of refrigerated containers, make sure that the refrigeration system is in good working order and that the thermostat works properly to control the temperature during the trip.
- An appropriate environment. Check that the temperature is suitable for the product

■ *LOADING THE CONTAINER*

Once exporters are certain that their goods and the transport equipment are in perfect condition, loading of the container can begin.

During the loading process, make sure not to exceed maximum permitted weight limits and distribute the cargo correctly; load with a concept of balance in each way: avoid concentrating load to one side or at either end of

the container. Also, make sure that the entire load is compatible; that is, that none of the loaded products affects the others. This will be discussed in more detail in the section on fresh products.

How space is used in the container will depend to a large extent of how the pallets are accommodated inside. They can be stowed in three patterns, depending on their size and the type of container.

The figures below illustrate loading patterns as seen from above.



Pattern A



Pattern B



Pattern C

The type of pallet you choose will depend on the internal measurements of the container or truck that is going to transport the goods and on the weight and form of the goods being stowed on the pallet.

To facilitate the selection of pallets and the recommended loading pattern for transporting them, Table 11 shows different pallet sizes, recommended stowage patterns, maximum number of pallets that can be transported, and percentage use of floor space.

If pallets are not used to transport the goods, make sure to check that the boxes are well secured to prevent shifting horizontally, lengthwise and vertically. If there is any empty space, divide the container into sections, or, insert nonflammable materials to secure the load. Divisions or separators should be placed in the center of the container to divide the cargo in two, and not leaning against the sides of the container.

Table 11. Recommended stowage patterns, maximum number of pallets, and percentage use of floor space by size of pallet and container

Pallet size mm and inches	20' container			40' container		
	Recommended stowage pattern	Maximum number of pallets	Floor utilization %	Recommended stowage pattern	Maximum number of pallets	Floor utilization %
<i>ISO/North American</i>						
1000 x 800	A	14	83.2	A	24	81.2
40" x 32"	B or C	11	78.4	B or C	23	80.1
1200 x 800	C	101	89	B or C	20	87.0
<i>Other sizes</i>						
1100 x 800	A	14	91.4	A	28	89.3
44" x 32"	A	12	88.1	A	26	93.3
1100 x 900	A	10	99.7	A	20	87.7
44 x 35,5	A	8	91.3	A	16	89.3

Source: *Safe Stowage. A Guide for Exporters*. Department of Foreign Affairs and International Trade. Canada. 2000.

See Annex 5 for a photograph of a container loaded with goods stacked on pallets, illustrating good use of space. Another photograph shows a container where pallets were not used.

Special recommendations for loading and transport of fresh products³

Proper loading practices for fresh products include maintaining temperature and relative humidity, protecting the goods from impact and vibration forces in transit, and preventing insects from entering the load.

3 This section was prepared by Frank Lam, Agribusiness Specialist of the Inter-American Program for the Promotion of Trade, Agribusiness and Food Safety, IICA Office in Miami.

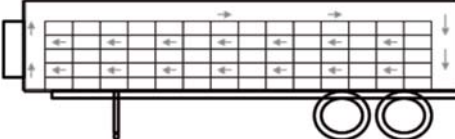
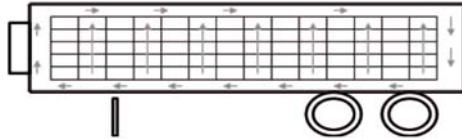
To prevent insects from entering the load, loading should not be done at night when light will attract insects; in addition, it should be done in a closed loading area.

Products requiring refrigeration must be fully pre-cooled before being loaded. The trailer or container should also be cooled to the recommended transport or storage temperature before loading begins.

Air circulation inside the transport equipment is of critical importance. Air circulation protects the goods from heat gain from outside during hot weather, from heat generated by the produce through respiration, and from the concentration of ethylene produced by ripening goods.

Table 12 offers some additional recommendations on air circulation for maintaining the quality of products, depending on whether air enters at the top or the bottom of the transportation equipment.

Table 12. Additional practices for maintaining the quality of fresh products depending on where air enters the container

<ul style="list-style-type: none"> Stacked loads should be arranged with lengthwise air flow channels that allow air to flow throughout the container, to ventilate the heat produced by respiration. Header stacks, next to the front bulkhead of the container, should be arranged in columns to connect all the lengthwise channels and allow the air to return to the evaporator. The load should not block the ceiling air duct. 	<ul style="list-style-type: none"> Stacked loads should have bottom to top ventilation slots which align in the stacks. Otherwise there should be at least small vertical air flow channels between the shipping containers. At least 13 cm of space should be provided at the ceiling for return air circulation. The load should cover most of floor surface to force more air through the load.
	

Source: USDA. Office of Transportation. *Agricultural Handbook No. 668. Tropical Products Transport Handbook.1987.*

Top-ice or other products are sometimes used to supplement mechanical refrigeration and help maintain high humidity. It is important not to block air circulation. The thermostat should be set at 2°C to prevent freezing of the ice into a solid mass that would block air circulation. Table 13 lists products that should or can be top-iced during transport.

Table 13. Top-icing of products

<i>Should be top-iced</i>	<i>Can be top-iced</i>
Beets with tops, broccoli, carrots with tops, corn (sweet), endive, green onions, parsley, radishes with tops, spinach, turnips.	Artichokes, beet greens, beets (topped), brussels sprouts, carrots (topped), chard, leeks, mustard greens, radishes.

Source USDA. Office of Transportation. Agricultural Handbook No. 668. Tropical Products Transport Handbook. 1987.

Some products can be transported and stored together. With mixed loads, similar sized containers of products should be loaded together for improved stability. Heavier shipping materials should be loaded first; lighter ones can be placed against or on top of heavier ones. To facilitate inspection at ports of entry, a representative sample of each commodity should be available near the door.

Some trailers have two or three separate compartments that can be used to carry loads of products with different temperature requirements. Side doors are needed so that goods can be accessed separately.

Sometimes controlled or modified atmospheres of reduced oxygen and elevated carbon dioxide and nitrogen are provided to containers after loading is completed. For this, the trailer must adequately seal and warning labels must be applied to the equipment. The cargo area must be properly ventilated before personnel enter to unload the cargo.

As mentioned earlier, many products are transported as mixed cargos or are stored together, but they must be compatible in terms of recommended temperature, recommended relative humidity, ethylene production, ethylene sensitivity, production of odors, and absorption of odors.

The following tables group products by temperature and relative humidity compatibility. In any of the groups, the more valuable products should determine the transport conditions of the other commodities.

Table 14. Groups of products compatible by temperature and relative humidity

<i>Group</i>	<i>Temperature</i>	<i>Relative humidity</i>	<i>Fruits and vegetables</i>	<i>Observations</i>
1	0°C- 2°C	90-95%	Apples, apricots, beets (topped), cashew apples, cherries, coconuts, figs, grapes (without sulfur dioxide), leeks, loquat, lychees, mushrooms, nectarines, peaches, pears, pomegranates, prunes, oranges, radishes, turnips.	Many of the products in this group produce ethylene.
2	0°C- 2°C	95-100%	Artichokes, asparagus, bean sprouts, beets, bok choy, broccoli, brussels sprouts, cabbages, carrots, cauliflower, celery, corn (sweet), endive, escarole, green onions, kiwis, leeks, lettuce, mushrooms, parsley, peas, raddichio, snow peas, spinach, watercress.	Many of the products in this group are ethylene sensitive.
3	0°C- 2°C	65-75%	Garlic, onions (dry).	Moisture will damage these products.
4	4.5°C	90-95%	Cranberries, caimito, cantaloupes, clementines, kumquats, lemons, lychees, mandarins, oranges, tangelos, tangerines, tuni, ugli fruit, yucca root.	
5	10.5°C	85-90%	Eggplants, squash, chayote, green beans, malanga, okra, potatoes, cucumbers, peppers, pummelo, tamarind, taro root.	Muchos de estos productos son sensibles al etileno y a la refrigeración.

6	13°C 15°C	–	85-90%	Avocados, babaco, banana, breadfruit, cantaloupe, coconut, custard apple, ginger, granadilla, grapefruit, guava, lemons, limes, mamey, mangoes, mangosteen, melons (except cantaloupe), papayas, passionfruit, pineapple, plantain, pumpkin, rambutan, soursop, star fruit, sweet potatoes, tomatoes (ripe).	Many of these products are sensitive to ethylene and chilling injury.
7	18°C - 21°C		65-70%	Jicama, pears, sweet potatoes, tomatoes (mature green), watermelon, yams.	

USDA. Office of Transportation. *Agricultural Handbook No. 668. Tropical Product Transport Handbook*. 1987.

Most tropical products may be damaged during transportation if specific temperature and relative humidity recommendations are not met, or if ethylene-producing products are stored with ethylene-sensitive products. The following table shows the sensitivity of most fresh tropical products to those conditions.

Table 15. Sensitivity of tropical fresh products to specific conditions

<i>Sensitivity</i>	<i>Product</i>
Chilling injury	Avocado, babaco, banana, breadfruit, cantaloupe, chayote, cucumber, custard apple, cranberry, eggplant, ginger, grapefruit, jicama, lemons, malanga, mango, mangosteen, melons, passionfruit, okra, oranges, papaya, peppers, pineapple, plantain, pomegranate, pumpkin, rambutan, soursop, sweet potatoes, watermelon, tomato, yam.
High moisture loss rate	Blackberry, broccoli, cantaloupe, chard, fig, grape, green onion, lychee, mango, mushroom, papaya, parsley, peach, pineapple, strawberry, vegetables with tops.
Medium moisture loss rate	Artichoke, asparagus, avocado, banana, beet, brussels sprouts, cabbage, cauliflower, celery, coconut, corn (sweet), cranberry, endive, lemons, lettuce, okra, orange, peas, peach, pear, peppers, pumpkin, radish, sweet potato, tomato, yam.
Low moisture loss rate	Apple, cauliflower, cucumber, eggplant, endive, garlic, ginger, kiwi, melons, onion (dry), potato, squash.
Ethylene - producing products	Apple, apricot, avocado, banana (ripening), cantaloupe, fig, guava, kiwi, mamey, mango, mangosteen, melon, nectarine, papaya, peach, pear, plantain, plum, rambutan, tomato.
Ethylene - sensitive products	Banana (green), broccoli, brussels sprouts, cabbage, carrots, cauliflower, chard, cucumber, eggplant, endive, kiwi (green), leafy green vegetables, lettuce, okra, parsley, peas, peppers, spinach, squash, sweet potato, watermelon, yam.

USDA. Office of Transportation. *Agricultural Handbook No. 668. Tropical Product Transport Handbook*. 1987.

Dispatching the merchandise

Once the product has been loaded, the cargo should be braced and set away from the doors of the container so that it does not fall down when the doors are opened, either at the destination or in a customs inspection. Boxes near the door should be covered with plastic to prevent the goods from getting wet if the locks loosen; check one more time that airflow is adequate. Doors can then be closed and sealed. The seal number should be recorded in the shipping documents.

Make a list of the products and take photographs so you can prove that the goods were correctly packed. In the case of fresh products, keep a good portion under the same management conditions so you can monitor them and have a point of comparison in the event of a claim.

Finally, always be alert to when products cross borders and maintain constant communication with customs authorities to ensure that everything it is in good order.

THE COSTS OF LOGISTICS

In order to fairly determine the profits from the shipment, you must take into account the cost of all the logistics involved in exporting the goods. It is not enough to consider the cost of the goods and the cost of shipping to the final destination; you must also consider a number of variables that can influence the success of the undertaking, both in terms of service to the buyer and your own profit margins. To this end, you must first define the cost of the logistics.

The principal logistic costs to be considered are:

- Packing.
- Special permits and licenses.
- Merchandise insurance.
- Export documentation.
- Loading.
- Internal transport to port of departure.
- Customs procedures for exiting the country.
- Port of departure fees (usually included in international shipping costs).
- International shipping.
- Customs clearance duties.
- Special permits and licenses in importing country.
- Customs procedures for entering the importing country.
- Port of destination fees.

- Storage (if applicable).
- Transport inside the importing country.
- Unloading.

Once you have determined the costs and studied the competition in the destination market, proceed to define prices in accordance with INCOTERM.

RELATED ACTIVITIES

■ CUSTOMS

Customs authorities control the flow of goods into and out of a country, enforce customs regulations, ensure that operations are legal and in order, collect the corresponding duties, and enforce export standards and requirements.

Exporters need to be familiar with the documents that accompany a shipment. The following is a non-exhaustive list:

- Customs declaration
- Transportation document. Can be a “bill of lading” in the case of sea shipping, or an “air waybill” or “consignment note” for land or air transportation
- Commercial invoice
- Packing list
- Tariff classification
- Certificate of origin
- Certificate of quality
- Sanitary certificate
- Phytosanitary certificate
- Animal health certificate

Sometimes additional documents are requested, such as the exporter’s license, the insurance policy, or the value-added certificate.

To facilitate customs clearance, it is recommended that you work with a customs agency, who serves as a link between export companies, government institutions responsible for exports, and the modes of transport.

Customs agencies provide services ranging from a simple transaction, such as preparing an export document, to coordinating everything involved in dispatching the goods, delivery to the ship, truck, airplane, etc.

■ *INSURANCE*

Regardless of the method of transportation, shippers should insure goods against all types of risk, from warehouse to warehouse. Even when the INCOTERM negotiated does not include insurance, goods should be insured with coverage up to delivery to the buyer.

To determine what type of insurance to buy, you should meet with an insurance company and together analyze possible risks to the cargo. Normally, two types of policies are used:

- **Voyage policy:** insures a specific, single cargo shipment; does not cover future shipments.
- **Open cargo policy:** covers a number of shipments and can be written to cover all cargos shipped; used when there is a steady flow of international shipments.

Although insurance helps protect the shipper's interests, there are some damages that are not covered by insurers, including: wear and tear, spillage, delays at the market destination, wars or similar risks, strikes, riots, disturbances, terrorist acts, among other things.

TIMETABLE OF SHIPPING LOGISTICS

To monitor shipping logistics and ensure that all is proceeding in good order, it is very useful to have a timetable of shipping logistics.

Below is a five-stage timetable that specifies, for each stage, the timeframe and the steps to be followed to assure a satisfactory outcome. While this monitoring system is based on proposed or "ideal" dates, it also takes into account the actual dates each step is completed. It enables an objective look at the strengths and weaknesses of export management.

Timetable of shipping logistics⁴

Overview

Exporter:	Payment policy:	INCOTERM:
Client:	Amount:	Invoice number:
Po No. :	Destination:	Date:
Products (HTS)	Delivery date:	

Stage 1. Carrier

Delivery date agreed with client		Destination and route	Date product ready for shipment		Select mode of transport (3 weeks prior to shipping)		Select broker at destination (3 weeks prior to shipping)	
<i>Proposed date</i>	<i>Actual date</i>		<i>Proposed date</i>	<i>Actual date</i>	<i>Proposed date</i>	<i>Actual date</i>	<i>Proposed date</i>	<i>Actual date</i>

Stage 2. Arrangements

Send power of attorney (POA)		Reserve space on mode of transport		Customs documentation		Prepare shipping order		Apply for insurance policy	
<i>Proposed date</i>	<i>Actual date</i>	(2 weeks prior to shipping)	<i>Fecha real</i>	(2 weeks prior to shipping)	<i>Fecha real</i>	(1 week prior to shipping)	<i>Fecha real</i>	(1 week prior to shipping)	<i>Fecha real</i>

⁴ Prepared by Connie Cruz.

Stage 3. Documentation

Prepare shipping document (3 days prior to shipping)		Prepare invoice and packing list (3 days prior to shipping)		Export request, if applicable (3 days prior to shipping)		Prepare customs declaration, transportation, certificate of origin (3 days prior to shipping)		Send original documentation to carrier (transportation office)		Deliver documentation with shipment	DISPATCH THE ORDER
<i>Proposed date</i>	<i>Actual date</i>	<i>Proposed date</i>	<i>Actual date</i>	<i>Proposed date</i>	<i>Actual date</i>	<i>Proposed date</i>	<i>Actual date</i>	<i>Proposed date</i>	<i>Actual date</i>	<i>Proposed date</i>	<i>Actual date</i>

Stage 4. Monitor the order

Send documents to external broker for "pre-clearance" at destination (same day as shipment)		Monitor the shipment A. First destination (carrier)		Monitor the shipment B. Customs clearance at destination (customs agent)		Monitor the shipment C. Product collected (carrier)		Monitor the shipment D. Product delivered (carrier)	
<i>Proposed date</i>	<i>Actual date</i>	<i>Proposed date</i>	<i>Actual date</i>	<i>Proposed date</i>	<i>Actual date</i>	<i>Proposed date</i>	<i>Actual date</i>	<i>Proposed date</i>	<i>Actual date</i>

Stage 5. Confirmation of delivery

Request proof of delivery (logistics coordinator)		Receive proof of delivery (logistics coordinator)	
<i>Proposed date</i>	<i>Actual date</i>	<i>Proposed date</i>	<i>Actual date</i>

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ANNEXES

ANNEX 1. *Checklist for the planning of transport packages* ⁶

1. Transportation requirements

- i. Are the climatic conditions throughout the transportation cycle known?
- ii. Has the package been constructed to protect its contents against climatic hazards, such as climate, humidity, changes of temperature, etc.?
- iii. Are the handling methods, number of reloadings, equipment used, etc., through the transportation cycle known?
- iv. Has the package been constructed to withstand shocks during transport and during storage?
- v. Has the package been constructed to offer protection against pilferage?
- vi. Can the package used for the domestic market also be used for export?
- vii. Can the same export package be used for all export destinations and ways of transportation?
- viii. Have all different ways of transportation (sea, air, road, rail) and their technical and economic effects on the construction of the transport package been studied?
- ix. Have the effects of palletizing (use of pallets) and containerization on the construction (design) and the costs of packaging been studied?
- x. Have the standards, laws, and regulations affecting transport packages in the target markets been observed?

6 Prepared by the International Trade Centre UNCTAD/WTO, and published in Note No. 17 “Export Packaging”

2. Product requirements

- i. Is the product designed to be easily be packed for transport?
- ii. Are changes in product design possible to adapt it to the transport package?
- iii. In order to keep its properties, does the product need extra protection needs in the form of:
 - Anti-corrosive agents?
 - Protection against contamination?
 - Shock-absorbing materials?
 - Protection against rodents, insects, mould, etc.?

3. Distribution requirements

- i. What type of transport packages do your competitors use and why?
- ii. Is there any particular trend to be observed that will entail changes in the near future?
- iii. Have the importers'/wholesalers'/retailers' opinions been ascertained on:
 - Quality standards?
 - Package sizes and weights?
 - Markings?
 - Closure methods?

4. Types of transport packages for export

- i. Have currently used transport packages been studied for possible improvements in quality and structural design?
- ii. Have alternatives been studied, e.g., the following different types of transport packages:

- Bulk containers of various materials?
 - Wooden crates and boxes?
 - Plywood and particle board boxes?
 - Wirebound boxes?
 - Corrugated and solid fiberboard boxes?
 - Plastic and steel drums?
 - Fiber drums?
 - Expanded or rigid plastic containers?
 - Paper, plastic and textile bags?
 - Bales with different wrapping materials?
 - Different materials for cushioning against shock during transport, closures, prevention of corrosion, shrink or stretch film for unitizing, etc.?
- iii. Have these types of transport packages and raw materials been thoroughly studied with respect to:
- Economy of specifications, e.g., minimum waste of materials?
 - Domestic availability?
 - Possible substitutes and their adaptation to export requirements?
 - Necessity to import high quality high-quality raw materials or ready-made packages?
 - Possibilities for savings in freight costs through reduced package volumes/weights

5. *Marking of transport packages*

- i. Have the international ISO pictorial markings for the handling of goods been used?
- ii. Are eventual additional verbal handling instructions expressed in the proper language/languages?
- iii. Are transport packages and freight containers marked according to the requirements of the port and customs authorities in the respective importing countries, such as:
- Port of destination?
 - Transit instructions?
 - Name and address of consignee?

- Country of origin?
- Name and address of sender?
- Case dimensions?
- Case serial numbers; total number of cases?
- Number of import license, etc.?

Annex 2. Photographs of different types of containers, by type of material



Frozen fruit packed in plastic bag



Tamarind sauce in glass bottles



Coffee packaged in aluminum bag with valve



Heart of palm tin cans



Vegetables in plastic bag



Tomatoes in plastic boxes

Annex 3. Photographs of most commonly used cases for shipping fruits and vegetables



One piece box made of waxed corrugated cardboard



Corrugated cardboard tray



Cap of a telescopic box made of corrugated cardboard



Base of a telescopic box made of corrugated cardboard



Wood and paper box without lid



Wooden box with lid

Annex 4. *Materials used to increase protection in fruit and vegetable shipments.*



Melons protected with paper



Ice-covered broccoli to prolong its shelf life



Guava protected with foam mesh and plastic wrap



Cauliflower protected with plastic wrap



Tomatoes in plastic box and cardboard packaging



Grapefruit in mesh and cardboard tray

Annex 5. Photographs of a pallet with the ISPM 15 seal of compliance, of different sorage patterns on pallets, and of containers loaded with and without pallets.



Pallet stamped with ISPM 15 compliance seal



Pallet with strapped cardboard boxes



Banana boxes stowed in vertical pattern



Boxes stowed in crisscross pattern collapsed by the weight on



Pallets with boxes of coffee stowed with film wrap, strips and corners for optimization of container



Boxes of processed products sent without pallet resulting in reduced use of space



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