Response

Assessment and Planning

Introduction

An accurate assessment depends on thorough planning, design and preparation. Under normal circumstances, the means of collecting the necessary data and information should be established as part of an organisation's pre-disaster planning. Planning and assessment are therefore very complementary.

Assessments enable logisticians to understand the impact of a disaster on the environment and how the impact affects the population, and how the logistics services are to be provided.

The findings from logistics assessments are critical in enabling appropriate decision making, planning and organisation for effective disaster response.

To effectively support a response to the needs in an emergency, it is very important to include a logistics assessment during the general needs assessment exercise. Having a logistics staff on the program needs assessment team ensures that the needs are properly understood by logisticians and therefore adequately provisioned for.

Definition

An emergency logistics assessment is the process of gathering, analysing and disseminating logistics related data and information in relation to the impact of a disaster. It determines the extent of the impact (through a situational assessment) and the logistical needs (through a capacity assessment). Assessments should be continuous in nature and enable organisations to monitor changes as a response or intervention evolves.

Purpose

- Isolates the most affected areas – enable positioning of hubs, etc;
- identifies impact on infrastructure, etc;
- identifies most urgent needs - prioritisation;
- defines level of response depending on complexity;
- highlights special concerns;
- identifies any other assessments that need to be done; and

- provides baseline data that is used to benchmark and monitor.

Elements of an Assessment

- Preparedness planning
- Survey and data collection
- Analysis and interpretation
- Forecasting
- Reporting

- Monitoring and evaluation

Scope

The scope of an emergency assessment will be different depending on the circumstances and may vary from emergency to emergency or depend on the nature or scale of the disaster. This not-with-standing, there is some basic information that is important to the logistics function. That is, the number of affected population, distribution plans and nature of supplies required. For planning purposes, additional information on the following would be useful to have:

Tools and Templates

- Logistics Cluster Capacity Assessment reports (LCA) to check airfield, rail, seaport-river port, vehicle needs assessment, road assessment. Logistics Capacity Assessment Template.
- UNICEF Supply/Logistics Assessment Checklists on airfield, rail, seaport, river port, vehicle needs assessment, road assessment.
- WFP/Geographical Information Systems - Spatial Data Infrastructure (SDI) on aerodromes, aerodromes' runways, bridge, port, railways' obstacles bridges, road obstacles bridges, water ways' obstacles bridges, stations, warehouses.
- UNICEF Logistics Quick Assessment Forms

Assessment methods

- surveys
- questionnaires
- interviews
- check-lists

Key considerations:

- numbers of affected population
- distribution plans
- materials required (commodities and supplies)
- electric power, hydro facilities
- water/sewage
- civil aviation, airports, alternative aircraft
- seaports
- railroads
- roads and bridges
- local trucking capacity
- transfer points
- communications
- coordination capacity
- warehousing

Planning an Assessment

“A quick response to obviously urgent needs must never be delayed because a comprehensive assessment has not yet been completed” (UNHCR hand book for emergencies). But it is importance to conduct an assessment at the earliest opportunity. The assessment outcomes facilitate planning and create a base for informed decision making. Planning an assessment involves:

- setting the objectives of the assessment;
- establishing terms of reference for the Logisticians;
- selecting team members;
- identifying and/or preparing the assessment tools;
- mobilising resources to facilitate the assessment - staff, vehicles, cameras;
- agreeing on reporting format; and
- identifying users of the assessment information, for budgeting purposes, for the programme staff, donors, and for internal logistics needs to facilitate planning.

Assessment Process

Identify information needs and sources

Based on nature of the response intervention:

- seek reliable sources from a range of stakeholders; including the logistics clusters, if established, Inter-agency groups, other humanitarian entities, etc;
- verify information from alternatives sources.

Collect data

- Identify baseline data if available and build on existing collection system.

Analyse and interpret data

- Evaluate against a baseline
- cross-check and compare reports from different sources, if possible;
- update information continuously as needs change; and
- report conclusions to relevant sectors who draw on the logistics services.

Provide logistics input to design/modification of disaster response

- Align objectives to program needs;
- identify and allocate resources; and
- plan and Develop monitoring and evaluation process.

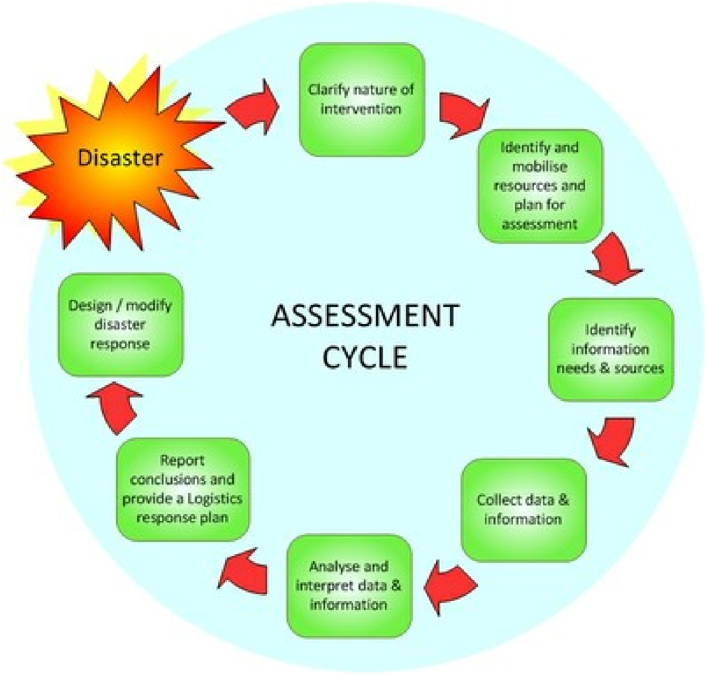

Diagram 1 - adapted from UNDMTP/Disaster Assessment (1994)] - Revised

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Factors to Consider when Initiating an Assessment

- Analyse existing data. Rapidly collate and analyse already-available information. Anticipate the likely impact of the disaster and determine the areas on which information gathering should focus.
- Prioritise the areas to be visited. Decide where to go in order to get a valid overview of the situation on the ground as well as details of the likely bottlenecks.

Considerations for post disaster logistics assessments

- Sensitivity to local culture and customs.
- Identify local capacities including government.
- Consider the requirements of all sectors activated and the response of other agencies to avoid duplication.
- Share information to enable rapid response and effective coordination.
- Take account of the responsibilities, response and legal requirements of national and local authorities.
- Use standardised assessment procedures.
- Identify a way of ensuring that there is a continuous re-assessment to facilitate relevant action for the changing context and needs.
- Coordinate and work with others. Form multi-disciplinary teams with government and other humanitarian organisations whenever possible. Coordinate efforts to get information from as many localities as possible as quickly as possible. Agree common definitions, methods and data collection formats, if possible, so that information from different teams will be comparable.
- Define terms of reference and specific information needs. Define the purpose and scope of each assessment mission clearly, and specify appropriate report headings.

- Avoid duplication. To speed up the assessment, avoid reporting on data or information that is already available.
- Include a status report on some of the critical factors required to enable a successful response:
  - financial resources available and any restrictions or provisions pegged to it.
  - staffing - both in numbers and skills;
  - ability to collaborate with other stakeholders also conducting assessments; and
  - complexities or challenges arising due to the nature of the emergency whether a slow on-set, quick on-set or complex emergency. This determines speed of response required and therefore the type of assessment or response that will be done.
- Select sources of information carefully to ensure that they are reliable and up-to-date.
- Consider the accuracy: the likely margin of error in the data and its significance for the conclusions being drawn or the calculations being made. Specify ranges rather than absolute figures if data is only approximate. Be sure to highlight any information/data that may misrepresent a situation.
- Be cautious about generalising: the situation and needs may vary considerably over short distances within the affected area and different locations.
- Minimising bias: be sensitive to possible biases in people's perceptions and reports (including those of the assessment team). Information for emergency assessments must come from different sources to provide a relatively accurate assessment of the situation.

Logistics Emergency Response Based on the Emergency Assessments

Note that in emergency situations, processes are intentionally shortened to speed up and facilitate immediate response to needs. As organisations respond to the initial critical emergency needs, they should conduct a logistics assessment as early as possible, before initiating and implementing a long term logistics response intervention. See Assessment Cycle above.

Inability to accurately assess the impact of a disaster, the resulting needs, and the local response capacities, would result in inadequate assistance, poor utilisation of resources and a poorly structured response.

Ideally, planning a logistics emergency response should consist of the following stages: assessing the situation, identifying the objectives, evaluating available resources, identifying intervention alternatives and implementing response plan based on the objectives and alternatives.

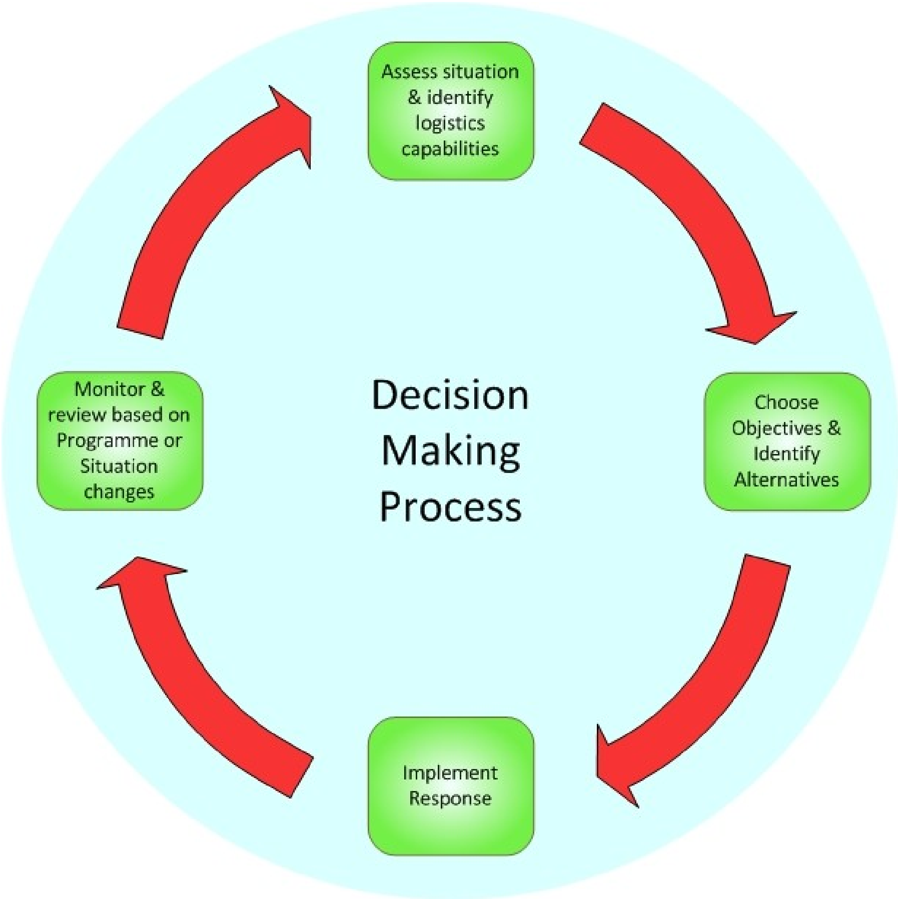

Diagram 2: Emergency Response Decision Making Process – Revised

To download the diagram, 'right click' on it and then choose 'Save Image As' from the menu OR go to Annexes.

As the diagram above implies, disaster assessment should be an ongoing and repetitive process. It is clear that effective logistics interventions are time-critical and rely greatly on resources already present in the affected area or pre-positioned in easily accessible locations. Though most of these can be pre-planned, a quick on-set emergency can disrupt any logistics plans previously put in place. In the immediate aftermath of a disaster, there would not be sufficient time for extensive or detailed assessments or the organisation of large-scale external support. Accurate and credible logistics information advising decision-makers what is or is not feasible and providing alternatives would help reduce the overall complexity of a logistics response.

Basic Principles of Assessment

- Use multiple sources and methods. In order to achieve an adequate and accurate understanding quickly and economically.
  - Use both qualitative and quantitative methods and information.
  - Use both secondary data (existing reports) and primary data (new information specifically gathered for the assessment).
  - Compare (triangulate) information from the different sources to get as complete and balanced a picture as possible.
- Seek participation and collaboration. As much as possible, involve other entities in the process of gathering the information: e.g. state of roads from program staff visiting field sites, Inter-agency groups,

government bodies and logistics clusters where applicable. Get consensus on:

  - What are the risks?
  - What are the assessment objectives?
- Ensure transparency and provide feedback with conclusions and recommendations.
- Reference the sources of information in all documentation.

Once the assessments are complete, organisations move into the planning phase and develop a response plan on how to meet the needs of the affected communities. Based on recommendations made after the assessment, the organisations are able to make critical decisions.

Planning Process

Planning is largely a decision making process that involves choosing among alternatives. The seven basic steps of planning are:

- problem identification – Is it flooding, drought, conflict or a complex disaster?
- data or information gathering – community needs, response team needs such as relief items, vehicles, environmental assessment;
- choosing among alternative solutions;
- evaluating the alternatives and deciding;
- implementing the solution;
- following up implementation and taking action where changes are required; and
- exit strategy.

A planning check-list in an emergency setting could include, setting of objectives, developing policies or adopting existing ones to cover procurement, warehousing, disposal/reverse logistics and also resources required such as vehicles, radios, computers, office space, storage space and staffing, as well as others.

Integrated Planning

Logistics is a service provider. Logistics planning, therefore, is not a stand alone activity. The active engagement of programme managers, partners, suppliers, shippers and logistics staff at all levels is vital for good results.
The involvement of logistics in programme planning inevitably results in the delivery of quality services that contribute to well coordinated, effective and efficient interventions. For instance, a sound and well thought out procurement plan is fundamental to the success or failure of any operation. Being pro-active with integrated planning and effectively advocating for the inclusion of logistics planning at every level can contribute immeasurably to the effectiveness of an emergency intervention.

Planning Cycle

A response can only be successful if program needs are fully understood and addressed. The key to this is an integrated planning process across functions "...if I do not understand your needs I cannot possibly fulfil them...". And from a program's perspective of logistics "…if I do not understand [the constraints/what is

possible] I cannot plan…"
Planning is a collaborative process, end to end from identifying needs and forecasting future needs right through to identifying and planning supply.

To download the diagram, 'right click' on it and then choose 'Save Image As' from the menu OR go to Annexes.

Factors to consider in the development of a good logistics plan

- Financial resources availability.
- Staff availability:
  - staffing: schedules for local recruitment; HR considerations;
  - training: schedule for induction and any specialised training.
- Information management tools:
  - all the necessary information for planning, managing and reporting. Existing contingency plans, outputs from Rapid Assessments, Logistics Capacity Assessments.
- External infrastructure available:
  - partners, agencies
- Stocks and movements:
  - movement schedule to meet programme requirements;
  - pre-positioning of material and operational stock requirements;
  - warehouse planning – table showing location of storage facilities, capacities, planned throughput, planned stock levels; and
  - warehouse facilities and management.

- Transport Information available on LCAs:
    - port operations, including handling equipment/operations;
    - airport operations, including handling equipment/operations;
    - table showing routes, modes, travel time, capacity, planned throughput, notes (actions to reduce bottlenecks and improve efficiency);
    - road transport: use and management of commercial and government and other relief fleets;
    - water transport; and
    - fuel and maintenance for transport units.
- Distribution, monitoring and evaluation:
    - plan and resources for implementation of distribution - guidelines;
    - plan and resources for implementing monitoring of supply chain performance; and
    - plan and resources for evaluation of supply chain.
- Security arrangements.
- Exit strategy: planning for exit should start from the beginning of the programme/project and be considered in the design by programs. Some projects come to a designed or planned end. Others go through a transition to another type of programme or project -emergency to development or rehabilitation phase. Irrespective of the change, each function must have an exit strategy to support the end or transition of the project without adversely affecting the communities.

Point to note: *Always keep the plan under constant review and communicate changes that become necessary to meet the needs of the operation.*

Conclusion

The assessment process stems across preparedness activities and the pre-disaster warning phase through the emergency phase and even into rehabilitation and recovery of the community. As the needs of the community change through these phases, the objectives of the ongoing assessment change as well. Assessment is a continuous process throughout sudden onset disasters, slow onset disasters and is evident throughout the disaster cycle. Assessments are generally only effective if there is a system available to record, collate the data and disseminate its implications. A pre-established assessment plan is critical, and a coherent system for continuously feeding assessment data into the planning process is equally essential.

Additional Information

Logistics Capacity Assessments

Logistics Capacity Assessments (LCAs) exist for many countries and can be found at http://www.logcluster.org/tools/lca. These LCAs are regularly updated and provide a useful tool to establish the logistics infrastructure before the disaster occurred.

Emergency Assessment

Emergency Assessment templates can be found on the Logistics Cluster web site under Mapcenter/Tools/UN Spatial Data Infrastructure (http://www.logcluster.org/tools/mapcentre/unsdi/.)

These templates, when used in conjunction with an LCA can be used to rapidly indicate the post-disaster logistics infrastructure, and establish possible logistics bottlenecks and areas of conflict.

IFRC Disaster Emergency Needs Assessment, adapted from: Sphere Humanitarian Charter: Common Standard 2

WFP Emergency Field Operations Pocketbook pg. 16-66 and 26-29

UNHCR Handbook for Emergencies pg.41

UNICEF Emergency Field Handbook pg. 10-14

Institute of Disaster Management (TECHNIKON SA)

UNDMTP (1994) Disaster Assessment

USAID (2005) Field operations Guide v4

ADPC (2000) Post Disaster Damage Assessment and Needs Analysis

Concern Logistics Manual (Dec 2004) pg. 81-88

WHO Logistics Guide to Emergency Supply Management Chapter 3, pg.17-21

WHO Assessment of Logistics & Supply Needs

IOM Emergency Operations Manual pg. 5-19

Links

www.reliefweb.int

www.humanitarianinfo.org/

www.alertnet.org

www.logcluster.org

Procurement

Introduction

Procurement is a key activity in the supply chain. It can significantly influence the overall success of an emergency response depending on how it is managed. In humanitarian supply chains, procurement represents a very large proportion of the total spend and should be managed effectively to achieve optimum value. Procurement works like a pivot in the internal supply chain process turning around requests into actual products/commodities or services to fulfil the needs. It serves three levels of users:

1. The internal customer.
2. Programs in response to emergencies and ongoing programs.
3. Prepositioning of stocks, for both internal customers and program needs.

In collaboration with the warehouse function, products/commodities are mobilised and delivered.

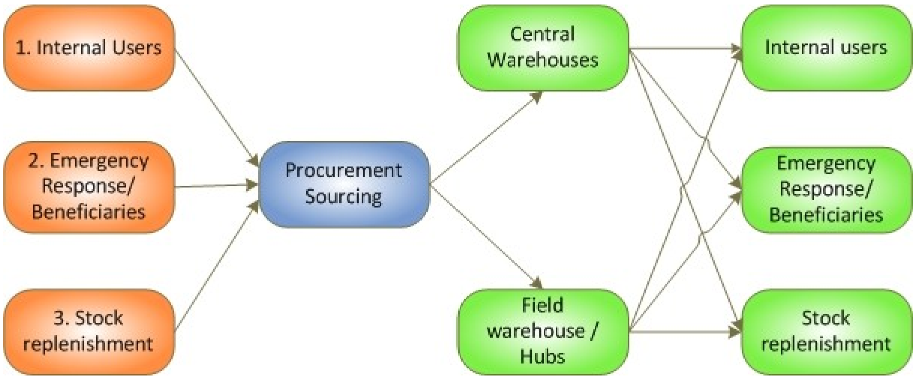

Diagram 1: The role of procurement

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Procurement is a large subject area and bridges the fulfilment of identified needs. The objective of this topic is to highlight the key areas, provide tools, templates and hyperlinks to additional information such as donor guidelines should that be required.

Note: It is NOT the intention to recommend process in this chapter. Process, in the context of procurement, is organisation specific and based on organisational policies and donor requirements. The intention here is to provide industry best practice that can be replicated or used to complement what is already in existence or adopted in totality where no guidelines exist.

Definition

Procurement is the process of identifying and obtaining goods and services. It includes sourcing, purchasing and covers all activities from identifying potential suppliers through to delivery from supplier to the users or beneficiary;

Purchasing is the specific function associated with the actual buying of goods and services from suppliers; and

Sourcing is simply: “Identifying and working with appropriate suppliers”.

Source: Mangan, J., Lalwani, C. and Butcher, T. 2008, "*Global Logistics and Supply Chain Management*", Hoboken, NJ, USA, John Wiley and Sons, Inc.

Procurement in the Humanitarian Context

The three important principles of humanitarian logistics procurement are:

- transparency – all phases in the procurement process are fair and accurately documented;
- accountability – accountability to donors who may require certain rules to be followed when using the money they have provided;
- efficiency and cost effectiveness – meeting the six rights of supply; price, right time, right quantity, quality services, delivery to the required places and from the most cost effective source.

The principles and their importance stem from three key facts:

- that the resources utilised are usually funded by donor;
- that transparency contributes to the establishment of sound and reliable business relations with suppliers; and,
- that efficiency and cost effectiveness has a direct impact on operations and ultimately on beneficiaries.

The Procurement function must guard and mitigate against risk, understand the market, build relationships with suppliers, meet needs in a timely manner and constantly monitor performance to improve service provision. Hence the need for an organisation to have clearly defined policies that are well understood.

Procurement Objectives

The aim and objective of procurement is to carry out activities related to procurement in such a way that the goods and services so procured are of the right quality, from the right source, are at the right cost and can be delivered in the right quantities, to the right place, at the right time.

Meeting the following objectives of procurement enables the Logisticians to fulfil the “Six Rights”:

- buy quality materials, items and services economically from reliable sources;
- ensure timely delivery through the selection of capable and efficient suppliers;
- continuously locate, evaluate and develop economical and reliable supply sources;

- identify the most reliable sources of supply through either open tender, multi-stage tendering (pre-qualifying suppliers and retaining only those that are capable of meeting the organisation's requirements - strategic sourcing) and limited tendering. For more information, see Types of tender in the Annexes;

- investigate the availability of new materials and monitor trends in market prices;
- buy in accordance with organisations policies;
- estimate, position and monitor appropriate levels of stocks based on estimated needs, operational policy, objectives and priorities, estimated time for replenishment and availability of funds; and

- participate in planning and coordinating purchasing needs across all central procurement teams and the field in order to reduce administration and make the best use of money spent.

It is important to recognise that the ‘Six Rights’ are interrelated and may influence each other but do not carry the same weight depending on the situation. For example, in an emergency situation it may be possible to obtain the right quantity but not at the right price. There may be competition for certain goods, so to get the quantities required may mean paying a slightly higher price.

Procurement Policies

Procurement policies will vary from organisation to organisation but are the organisational rules and regulations governing the procurement function. The policies determine how different aspects of procurement will be carried out in the organisation and how people working in procurement should behave. In summary, they;

- provide general and specific guidelines for managing the buying of items and services;
- establish a purchasing criteria and decision making process, ensure that implementing staff are well trained;

- provide specific guidelines for establishing and managing relationships with external entities in relation to procurement;

- encourage and enhance internal control measures;
- act as a management tool for better decision-making and better stewardship of the resources entrusted to organisations by its donors.

Policy Inclusions

As a guide, a typical procurement policy should include, but not necessarily be limited to the following subjects:

- role of procurement in the organisation and its structure;
- procurement professional ethics;
- sourcing strategy;
- donor guidelines; special purchasing requirements on grants;

  - USAID guidelines: Grant Regulations Admin Requirements
  - ECHO guidelines: grant agreement, general conditions to grants agreements, agreement guidelines, framework partnership agreement, Annex 1: single form guidelines, single form for humanitarian aid action, Fact Sheets, financial guidelines, rules and procedures applicable within the framework - Annexe 4, New Consolidated Humanitarian Aid Regulation.

- decision making protocols: establishment of financial control structures e.g. expenditure limits and guidelines, approval/decision making levels, constitution of procurement committees, etc;
- when to buy locally or Internationally (procurement strategy);
- ethical practices:
  - conflict of interest
  - integrity
  - confidentiality

- declaration of Interests
- supplier relations and ethical practices

- special purchasing requirements on grants;
- purchasing requirements for items with special storage needs;
- pre-determined sources of supply. Development of suppliers' database including items specifications, price, availability, INCOterms, service, specific agreement if any, catalogues etc;
- exception to policies - especially in emergency situations; and

- reverse logistics – disposals, exit strategy, returns, etc. inclusion of return and replacement processes to be adopted for expired stock to vendors.

Procurement Process

Logistics staff participation in assessments provides logistics information and data that supports program/response implementation. This enables the logistics function to know and understand program or response needs. The organisation is then able to plan ahead for the provision of the goods and services. The assessment results feed into procurement plans. In an emergency situation, the participation of logisticians will inform management on the feasibility of a response to physical needs.

For emergency response purposes the procurement process can be wrapped into four clear steps:

- needs identification;
- specify;

- sourcing, awarding and placing orders;

- supplier management to facilitate timely delivery.

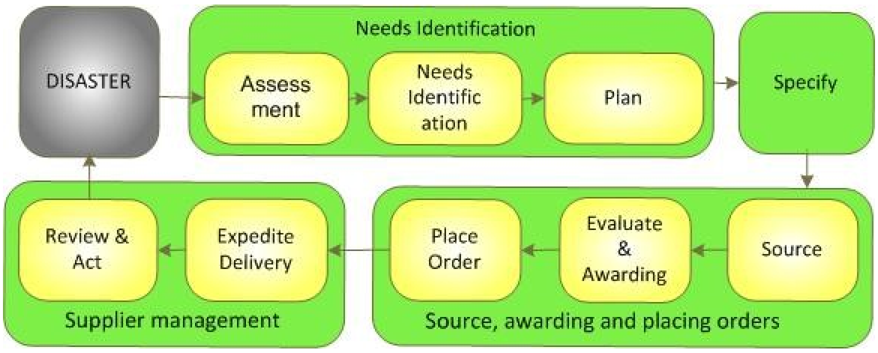

Diagram 2: Procurement Process

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Need

Requirements for goods and services originate from different users. In emergencies, the response teams in various sectors request for basic supplies to meet the needs of those affected. The needs range from blankets, mosquito nets, tents to food supplies, household items, etc.

The needs are communicated to procurement in the form of a “request”. These requests may be electronic, hard copy or verbal, and may be very specific where the users know exactly what they need in terms of specification, quantities, and delivery details. Or they may be less specific where the users are not able to provide exact information.

In emergencies the requests are sometimes verbal or done on email communication.

In whatever form, the needs must be clear, unambiguous and confirmed by the originator of the request. The specifications should contain the essential features or characteristics of the requirements but must not be over or understated or contain non-essential features that might limit the sources of supply or limit the number of potential suppliers. Assessments inform needs identification.

Plan

Once the needs have been identified and forwarded to Procurement in a request form (see different purchase order requisition templates in the Annexes), the procurement department should develop or communicate a plan on how to deliver the service or goods required. But the plan must be developed in collaboration with the other functions within the organisation, so that it is integrated into the organisation's strategy and therefore provided for adequately.

Specify

To be able to purchase the right goods or services, the specifications of what the user/beneficiary needs must be clear. These specifications are used to communicate to the supplier what is needed and what should be supplied. It is therefore important to have clear, precise and accurate specifications. Most organizations have standard specifications for the most regularly procured items and services such as medical and construction. One example is of Inter-Agency working groups who have developed standards to facilitate the establishment of common framework agreements. (See Plastic Sheeting and Blankets specifications)

The customers determine the specification. There is, however, an important role to be played by those responsible for purchasing the goods or services.

What makes a good specification?

Specification is a detailed description of the design, the service, or materials. It describes in detail the requirements to which the supplies or services must conform. The basic requirement of a good specification is to clearly identify the service or product to stakeholders. The specifications must be clear to all parties. That is the user, Procurement and the supplier.

Factors to consider in specifying a product:

- physical attributes
- technical specification

- intended use
- technical specifications

Care must be taken not to specify a specific product so as to limit competition.

Source

Method

Some of the methods of purchasing or obtaining goods and services for an emergency are:

- drawing from existing stocks within the organisation;
- cash purchases on approval;
- calling-offs from existing - supply/framework agreements/long term agreements;
- ordering from a sole/single source, multiple sources, supplier, alliances/partnerships; these could be local or international purchasing;
- purchasing from the open market on a quick request for quotation with request for short turn-around;
- in preparation for slow-on-set or for complex emergencies, purchase from the open market through an open invitation to tender;
- other agencies'/organisations' donations; and

- borrowing from stock held by other agencies/organisations in the UNHRD network.

Process

Sourcing is the process of identifying sources of supply that can meet the organisations immediate and future requirements for goods and services. In an emergency situation the immediate needs would be priority consideration. Under the circumstances, identifying sources of supply and accessing supplier capabilities will either be carried out as users' place their requests to Procurement or once a request has been received.

The sourcing process adopted will depend on the situation and on the time available to carry out sourcing.

In response to a slow onset emergency, stock-piling may take place before specific requests are made.

In a sudden on-set emergency the need to respond quickly to the emergency will mean there is no time to gather sourcing information and approve suppliers before customers start to place requisitions. The organisation would then call-off on existing stocks or purchase short term requirements off the local market for the initial days or order from existing agreements.

Some sources of supply information are:

- catalogues and brochures;
- trade directories;
- the internet, exhibitions, trade journals, government offices;

- other people involved in procurement;
- other organisations, other humanitarian organisations;
- supplier records, request for information/requests of expression of interest;
- existing approved supplier databases; and

- procurement agents.

Vendor performance

Vendor rating and supplier performance monitoring are applicable to all scenarios for quality service delivery. These aspects should be built into on-going business. For emergencies, performance monitoring is limited to delivery and quality of goods. Though vendor rating is applicable in emergencies, the criteria may vary from one that is used in the long term arrangements. For example, ability to deliver immediately may carry more weight than the price, provided the price variation is not too big.

Factors to consider in vendor rating:

- vendors' legal status;
- price and cost;
- quality of goods;
- service record;
- availability of goods;
- ability to deliver in time;
- good communication; and

- availability of a clearly identified focal point.

For more information, see Suppliers Confidential Business Questionnaire and Supplier Rating Tool in the Annexes.

Steps in the sourcing process

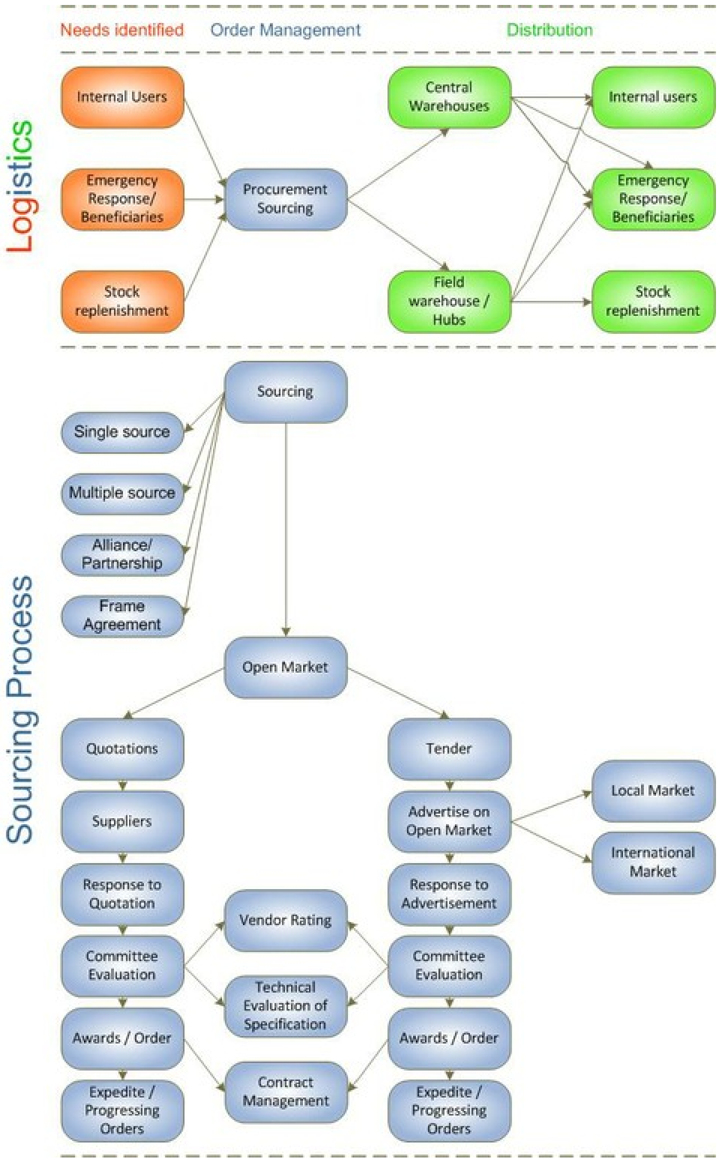

Diagram 3: Sourcing Process.

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Market Enquiry

The process of inviting and evaluating tenders or quotations will vary depending upon an organisation's own internal procedures. But the following are considered 'best practices'.

Inviting and receiving quotations

- A limited number of vendors are invited to bid for supply of products/services.
- Bids are returned within a specified deadline.
- Receiving sealed bids depending on the limits provided by the organisation.
- Use of locked box or lock fax machine for receipt of bids.

Inviting and receiving tenders

- Advertising in local and international channels.
- Setting deadline for response.
- Receiving sealed bids.
- Opening and registering receipt of the tenders.
- Use of locked box or lock fax machine for receipt of bids.

Documents used:

- invitation to tender forms;
- advertisements;
- Request for information (RFI)
- Request for quotation (RFQ)
- Request for proposal (RFP)
- Request for bid.
- Technical specification documents.

Evaluation and Awarding

The evaluation of tenders and awarding of contracts to suppliers is an important phase of the procurement process. It is this process that determines the actual quality, reliability, delivery, etc. of the goods and services. The procurement department coordinates the following:

- analysing and evaluating the bids against set criteria, specification requirements and presenting the analysis to an appointed committee; this process is applicable for both quotations and tenders;
- verification of supplier capability and quality control/assurance processes;
- reviewing product inspection results where necessary;
- verification of technical evaluation reports where applicable;
- negotiates with vendors where it is recommended by the committee; and
- places orders and expedites the delivery.

Some points to note:

- assess and consult on any big price variations;
- avoid potential conflict of interest, undue influence, price fixing and favouritism etc;
- ensure consultative decision making and sharing of responsibilities. The tender box should not be opened by one person only;
- the criteria used to evaluate bids should be tested and validated by the committee before reception of bids; and
- different steps of the process, results and choice should be documented (minutes, adjudication report…etc).

Placing Orders and Contracting

The next step in the process involves placing orders for the goods or services with the supplier, or establishing contracts which need to be sent to suppliers. In emergency situations the approval levels and limits are adjusted, based on an approved process, to speed up the process of acquiring goods and services. Under normal circumstances, the approval processes may be more elaborate. The orders establish contractual relationships between the organisation and the supplier. Depending on the organisations guiding policies, this contractual relationship can be represented in various forms (see attachments in Annexes):

- Purchase Orders 1, 2, 3
- Service Order
- Service Contract
- Frame agreement
- General Delivery Contract

Important features of a contract or agreement:

For information on international trade, see International Commercial Terms used in international contracts of sale: INCOTERMS 2000 , INCO terms explanation, INCOTERMS narrative, INCOTERMS practical application chart.

- cost
- specification/description
- quantity
- lead-time / delivery time
- approvals
- date of issue
- serial number
- terms and conditions (including penalties)
- INCOTERMS / place of delivery

See Contracting tips and basic inclusions, Standard conditions of contract and Purchase contract: an agreement between purchaser and supplier.

Progressing/Expediting

Once the order is placed and the supplier has confirmed receipt and agreed to the contract terms and conditions, the role and the amount of work that staff in procurement have to undertake will be affected by the performance of the suppliers. It is necessary therefore, for the procurement staff to monitor the progress of orders and the performance of the suppliers. Supplier performance will determine the amount of time and money that has to be spent in expediting orders and the managing of suppliers. To ensure an uninterrupted flow of goods and services, expediting should be a continuous process, especially in emergencies. The continuous monitoring enables the organisation to pick out break-down points in the system and quickly identify solutions.

Delivery and Return

Procurement only facilitates delivery through expediting for timely delivery and trouble-shooting returns. The physical receipt and inspection of goods takes place at the delivery point. Procurement only needs to know that delivery has taken place and that the supplier has delivered in accordance with the purchase order and complied with delivery contract requirements.

Whoever is responsible for accepting delivery and inspecting the goods should understand the procedure to follow in the event that there are any problems or discrepancies. For certain goods or commodities an independent inspection company may be used to check the quality of the goods.

Payment

When goods or services are received and accepted into stock, Procurement then facilitates payment of the supplier by providing necessary documentation to Finance.
Orders are normally generated in Procurement. As the goods are delivered in the warehouses and transported to final distribution points, additional documents are generated in the process to support transactions. All these documents are finally consolidated to support vendor payments. In the diagram below, the entities on the left generate the documents. On the right are examples of some of the documents used to support payment.

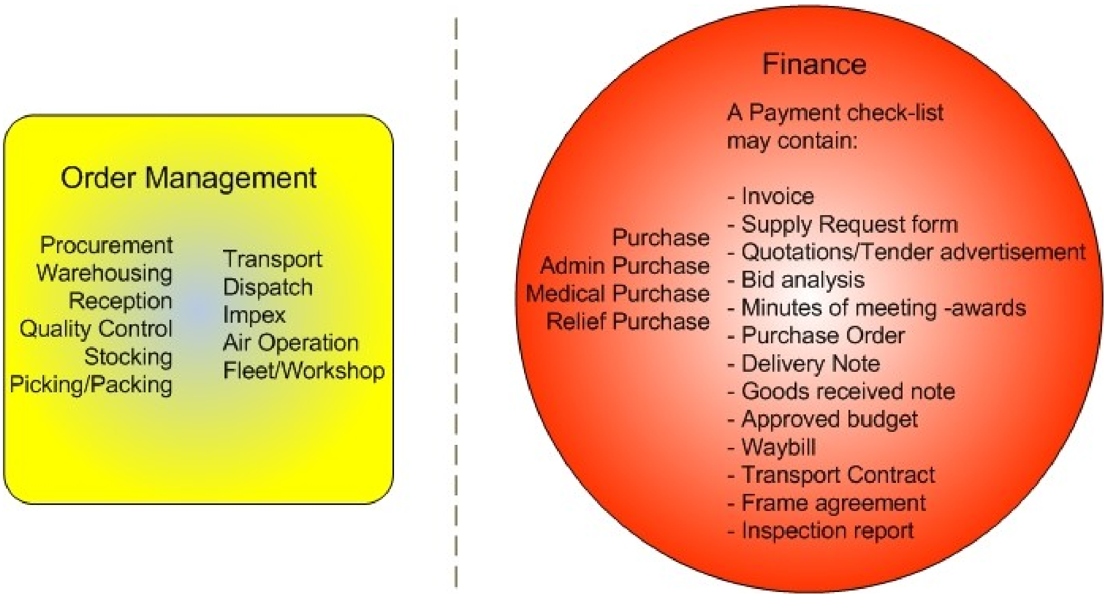


Diagram 4: Example of necessary documentation used to support payments.

To download the diagram, 'right click' on it and then choose 'Save Image As' from the menu or go to Annexes.

For samples, see the Annexes.

Review

It is very easy to forget the review stage, particularly when there is a lot of procurement activity taking place as in the case of an emergency. The review stage has got three main objectives:

- a review with the original user or beneficiary on whether the original needs they had have been met;
- a review of the performance of procurement in carrying out the procurement process; and
- a review of the supplier performance.

In emergency situations, the review step happens much later in the emergency. Emphasis during the emergency is focused on obtaining the goods and services and meeting the needs.

Procurement Tools and Documents

Different humanitarian organisations will have their own systems and documentation that they use during the procurement process. These are used to enable people to carry out the procurement process efficiently and consistently. Historically, the procurement process has been paper based and has required the use of a range of documents. In the initial days of an emergency, it is difficult to introduce a new system but easy to apply an existing one with minimum guidance to facilitate the speed of response.

Procurement System

In this context a standard procurement systems (SPS) is a software suite providing front office services to procurement professionals. It is intended to provide standard business processes and data management across a wide range of procurement communities. Procurement in emergencies is very complex, necessitating procurement of relief supplies from multiple worldwide sources. An SPS provides a paper-less transaction trail for better accountability, facilitates order tracking and reduces the opportunity for fraud. There are many SPS available on the open market, from which an organisation can select one that is suitable to their needs. There are also service providers on the open market who have the capability to develop an SPS specifically tailored to meet individual needs.

Conclusion

Procurement must be seamlessly integrated with the other aspects of Logistics and functions within the organisation, such as Warehousing, Distribution, Finance, HR, etc. An integrated approach to service delivery will no doubt contribute to the timely, efficient and effective delivery of humanitarian assistance. Clear communication lines, timely flow of documentation and constant feedback will facilitate the procurement process. The involvement of the Logistics function in assessments will enable Logistics to plan for the delivery of services, but for Logistics to succeed, the procurement plan must be well integrated and visible in the overall response plan. In emergency situations, easily accessible logistics preparedness and response guidelines will help to fast track the development of a response plan, tailored for a specific situation.

Additional Information

International Commercial Terms: Trade terms used in international contracts of sale: see *see INCOTERMS 2000 , INCO terms explanation, INCOTERMS narrative, INCO practical application chart.*

Concern Worldwide Commodity Distribution Manual
ECHO Procurement Guidelines
ICRC Logistics Field Manual
IFRC Logistics Manual
IOM Emergency Operations Manual
UNHCR Handbook for Emergencies
UNICEF Emergency Field Handbook
WFP NFI Procurement Manual
WFP Emergency Field Operations Handbook
World Vision International Procurement and Reference manual
WHO Logistical Manual
Rushton,A., Oxley,J., and Croucher,P., The Handbook of Logistics and Distribution Management (Second Edition), Kogan Page (1989,2000)
Mangan, J., Lalwani, C., and Butcher, T., Global Logistics and Supply Chain Management, John Wiley & Sons, Ltd
Fritz Institute Certification in Humanitarian Logistics Module
Tearfund Procurement

Transport

Definition

In the context of humanitarian organisations transport is defined as:

“The activities involved in moving supplies from point of origin to internal customers or beneficiaries”.

The aim of transport is to physically move supplies in a reliable and safe manner, on time, cost effectively and efficiently to its destination.

Policies

The rapid growth of technology and the changes in the delivery of humanitarian aid has done little to change the fact that relief supplies still have to be collected and delivered.

Historically, the transportation of supplies has been regarded as an ancillary function of little or no central importance. More recently, efficient transportation has been recognised as an essential determinant in providing consistent, quality service to beneficiaries. A good transport system fulfils three of the "rights" of supply. That is, getting the goods there at the right time, in the right condition and in a cost effective manner. Summarising this thinking into a series of actionable steps, and successfully implementing those steps, will ensure timely and effective delivery of humanitarian assistance. Goods will arrive as scheduled, at the right price, in maximised loads with no breakages or pilferage. A good transport system complements an efficient distribution system.

The Role of Transport

The role of transport is to facilitate the movement of goods. This may be from points of manufacture, storage or pre-positioning, to points of use; or between hubs and distribution points; or hubs to end use; or distribution points to end use; or return from end use back to hub and pre-positioning points or manufacturers. The source and destination may be in the same country, or one may be in a different country requiring international movement.

Transport in Emergencies

Transport management in emergencies is a complex task depending on the nature of the disaster. How it is structured is very dependent on the state of the infrastructure, security in the area of disaster, demand, nature of product etc. More and more, humanitarian organisations are beginning to tap into the joint transport services when they are offered by the Logistics Cluster during emergencies. The service is based on a collaborative approach and aims to leverage the advantages of centralised coordination and sharing of assets.

Operations - Transport Strategy

A transport strategy depends, not only on the needs within the organisation, but varies from organisation to organisation and from situation to situation. Some factors to consider when developing a transport strategy are:

- how to identify transport service providers;
- how to manage the function; i.e. whether to lease, outsource or manage own fleet;
- capacity of transport modes available;
- quantities requiring movement over a period of time;
- nature of goods/products/supplies to be transported;
- distances to be covered;
- environmental issues such as climate, government legislature, infrastructure, taxes etc;
- number of destinations, hubs and pre-positioning locations;
- origins and routes;
- available transport modes & their relative costs;
- human resources;
- terrain;
- funding;
- security; and

- circumstances – such as Nature of disaster.

The above factors would be valid for both emergency and non-emergency situations.

Managing transport providers

Occasionally the need arises, or the decision is taken to use external transport providers. In this event there has to be a structured approach to the selection (see contracting) and subsequent monitoring and control of the provider or providers selected. There are a number of important issues to be considered to ensure that a reputable provider, who will provide the required level of service, at an acceptable cost, is sourced.

Point to note

The selection process adopted for the acquisition of all services is covered by the organisation's approved procurement policy, processes and procedures.
Contracting should be done in a competitive manner, on market terms, and negotiations undertaken in an open and transparent fashion, thus ensuring cost effectiveness and equal opportunities for the appropriate commercial entities.

Criteria influencing transport service providers

The criteria for selection will vary from organisation to organisation. Some factors that may influence the selection of transport service providers are:

For information on International Trade, see International Commercial Terms used in international contracts of sale: INCOTERMS 2000 , INCO terms explanation, INCOTERMS narrative, INCOTERMS practical application chart.

- carrier characteristics and capacity;
- proven efficiency;
- timely delivery;
- known integrity, reputation and reliability;
- good relationships with others carriers;
- responsiveness to urgent needs of the organisation (if previously contracted);
- financial viability to cover costs of providing the service;
- adequate communication systems to facilitate tracking to the vehicle;
- assets to safeguard organisation cargo;
- ability to provide a multi-modal service, if need be; and

- presentation of timely reports and correct invoices.

Organising movement

There are two types of transport movement in an emergency:

1. Local transport movement

Local movements within a specific country will usually involve road transport. This may involve movement of bulk loads from ports, airports and railheads to warehouses and depots, bulk movements between facilities such as warehouses or depots, or delivery of smaller consignments from a local warehouse or depot to end users at a number of destinations in an area.

2. International movement

In normal circumstances the local environment will not always be able to provide all the products and services required to fulfil the needs identified in an emergency environment. logisticians therefore become responsible for sourcing externally and organising the transportation of relief supplies to affected locations. Often the relief supplies come from other countries and have to go through various processes before they are received. To ensure efficiency and to allow the logisticians to focus on their core job, the organisations seek service providers with expertise and capacity to handle certain aspects of the movement.

The common service providers are:

- freight forwarders;
- clearing agents;
- inspection services.

Criteria for selection of above service providers:

- licensed by the government to conduct customs clearance formalities and be up-to-date on changes in customs requirements;
- offer a wide variety of services, so that you do not need to contract many different companies for different services (e.g. sea and air freight, re-packaging of damaged materials, etc.);
- own or have access to a bonded warehouse to protect and control shipments in transit;
- own a trucking fleet for inland transport and have access to specialised vehicles when needed such as container trucks, low-bed trailers, tankers, etc;
- have trained, competent, experienced and trustworthy staff;
- have a proven record of reliability, accuracy, and timeliness, as verified by references from other groups that have used their services;
- are flexible in their availability at short notice, also outside of office hours and on public holidays;
- have an established reputation and have been in business for a number of years;
- have influence in the transport market, with port authorities, etc;
- are experienced in successfully handling duty exemption arrangements for humanitarian organisations;
- have an office in the port area or nearby;
- are experienced in verifying goods arriving in the port: discharge, storage and loading operations, checking weights and inspecting shipping packages for visible damage;
- are experienced in hiring porters and stevedores for cargo handling;
- have at least a country-wide, preferably a multi-country regional network; and
- use technology effectively, including a good telecommunications system and, preferably, a computerised tracking system that allows visibility of where shipments are at a given time;

Other related parties are:

- customs officials;
- port authorities;
- customs brokers; and

- stevedores;

Although it is advisable to use an intermediary such as a freight forwarder or clearing agent to handle international movements, it is still important to have a basic understanding of the roles of other third party service providers involved in international movement. It should be noted that these third parties may be private companies or in some cases state run organisations.

Planning and Scheduling Movement

Routine movements, taking place on a regular basis, need to be planned at the outset. Non-routine movements occurring on an ad hoc basis will have to be planned as and when the need arises.

Ideally movements should be planned and managed by a transport office. This office will be responsible for determining the appropriate routing for the goods, allocate resources (own or contracted) and inform the destination of estimated delivery time.
During the movement the transport officers will track the progress of the goods and update delivery times accordingly. They will manage the staff involved in the movement and deal with any issues that arise. They will also handle any problems that occur during the movement, liaising with contractors, freight forwarders and shippers as required. The transport office may actually produce the required documentation to cover transit, alternatively they will be responsible for collecting the required documents together for despatch.

Once movements have been planned and are initiated, it is important to maintain an information flow between all parties involved to ensure the safety and security of the goods and the adherence to service promise. In environments within which humanitarian aid organisations operate, many events can impact the efficient movement of goods. In natural disaster or conflict zones, the risk to the movement is potentially high. Having up-to-date information on the status of the movement allows problems to be quickly identified and dealt with.

See The Relief Item Tracking Application (RITA), a commodity tracking tool available on Logcluster website.

Planning Movements

Movements in a national context can usually be managed more closely than movements between or across countries. National movements can be usually planned and co-ordinated more easily.

International movements will often be managed by one or more third parties, working in different time zones and in different languages. Often, international movements are planned and managed by a freight forwarder or logistics service provider. They will work within the broad plan to meet the client requirements in terms of movement time and routing.

Planning sea movement

In planning movements by sea, port capability and the control of port activity needs to be understood in order to assess any possible constraints that could impede the movement of goods. The following factors will indicate the suitability of a port to handle the planned movements:

- the number, type and size of ships that can be handled at one time;
- typical vessel waiting and discharge times;
- availability of equipment to handle different types of consignment – for example, bulk, bagged, loose, containers etc., and its state of repair;
- availability of labour, working hours and typical discharge rates for both manually;
- unloaded cargo and containers;
- operational factors that may constrain activity such as the risk of congestion or the impact of the weather at certain times;
- port documentation requirements and the efficiency of procedures for clearing cargo; and
- storage facilities and infrastructure such as railways, roads;

Where the movement of goods is to an area under the control of the local public authority, a clear understanding of the requirements covering movement of goods must be gained from the appropriate authority prior to initiating any movement.

Route Planning and Scheduling

For effective route planning and scheduling, the transport officers need to be involved in the development of the distribution plan or at least be aware of it and understand it. Vehicle routing and scheduling process needs to fulfil the following objectives:

- maximising vehicle payload (by maximising vehicle fill out and back) and maximising vehicle utilisation (by maximising number of loaded journeys per vehicle);
- minimising distance (e.g. by minimising overlapping deliveries) and minimising time (e.g. by minimising non moving time); and
- meeting customer requirements, in terms of cost, service and time and meeting legal requirements, in terms of vehicle capacity and driver's hours.

See Route Planning Techniques.

The nature of the movement can be split into two basic types:

- primary movements are those that involve typically bulk movements between two specific locations. This may be, for example, between two warehouses in a network or from a port or railhead to a warehouse; and
- secondary distribution relates to movements that may involve multiple deliveries within a defined area, such as a regional or local warehouse to extended delivery points. In both cases, the emphasis is on achieving full utilisation of the resources used; filling the vehicle to capacity minimising the distance travelled and optimising the hours which the driver is being paid to work.

Mode of Transport

A mode of transport is the means by which goods and material are transferred from one point to another. The basic modes of transport are:

1. Air
2. Sea
3. Road
4. Rail

See below a mode comparison matrix for different modes.

MODE / CRITERIA	ROAD	RAIL	SEA	AIR
Relative speed	Moderate	Moderate	Slow	Very high
Reliability	Good	Good	Limited	Very good
Cost per tonne/km	Medium	Low/medium	Low/very low	High
Flexibility	High	Low	Low	Medium
Other considerations	Extensive network	Limited and fixed infrastructure	Restricted network	Limited network
	Short and medium distances e.g. Europe/Middle East. From a neighbouring country to operation site Internal transport; Short/medium distance	Large consignments. From port of discharge to inland operation site (warehouse). Ecological.	Large quantities; Less urgent; Pre positioning phase; Second phase; Long distance with no time constraint.	Emergency phase; Expensive goods; Fragile or perishable goods; Cold chain; No alternative option; Small shipments; e.g. diplomatic pouch; Long distance with time constraint.
Advantages	Relatively fast; No transhipment; Direct delivery; Flexible; Cost.	Economical; Large loading capacity; Range and speed (in most countries).	Economical; Large loading capacity; No restriction on loading capacity; Cheap.	Fast; Reliable; Limited losses; Direct; Easy tracking and trac-ing.
Disadvantages	Roads may be dangerous (land mines) or blocked (rainy season); Sometimes, driver's nationality or vehicle regis-tration not acceptable	Difficulty finding freight cars; Delays; Transhipment; Inflexible; Tracking.	Slow; Transhipments at ports; Use as a second means of transport for large volumes; Higher theft risk in the port; Not flexible.	Expensive; Restricted to journeys between airports; Restricted loading capacity (dangerous goods, size of shipment, weight, fuel, size of packages, etc.).

Table 1: Criteria of different modes of transport, from Fritz Institute

To download the table, 'right click' on it and then choose 'Save Image As' from the menu or go to Annexes and click on 'Comparison matrix for transport modes'

In emergencies, the criteria of speed and reliability must be examined when considering the choice of mode. Different modes have quite different characteristics and will meet the speed/reliability/cost criteria to varying degrees. The appropriate mode must be carefully selected if it is to match all the requirements. Multi-modal solutions may provide the most effective and efficient transport option.
Whilst the physical characteristics of certain goods and supplies may determine a specific mode of transport,

most goods will be capable of being moved by a variety of modes. Customer requirements and constraints on the organisation providing the transport must be considered. In humanitarian aid situations, it is often environmental factors, such as the destruction of roads and railways that have a significant impact on mode selection.
It is important to fully recognise the operational characteristics of the mode or modes that have been selected. It is also necessary to consider the type of vehicle or equipment that will be used within that mode.
Prior to making a decision on the mode of transport, it would be useful to create a matrix ranking of influential factors for choosing transport modes. Some factors to consider in the rating:

Mode Selection Criteria

Four key criteria:

- the speed which the mode exhibits;
- the reliability that the mode demonstrates in its ability to fulfil service requirements;
- the flexibility that the mode exhibits; and
- the comparative unit costs, which the modes incur.

Speed and reliability will have a major impact on the ability to deliver humanitarian aid effectively and efficiently to where it is needed.

Other considerations in the selection of a transport mode are:

- required delivery date;
- cost of transport service;
- reliability and service quality;
- shipment size;
- transit time;
- number of transhipment points;
- item type;
- possibility of damage; and
- range of services.

Matching Operational Factors to the Selection Criteria

It is important to use a structured approach to mode selection. It is important to understand the following points :

- opportunities and constraints in the choice of mode will be identified from careful analysis of all relevant operational factors;
- modes that realistically cannot be considered should be ruled out of the decision process immediately;
- geographical factors should be considered, as they may remove the opportunity to use a particular mode; and
- lack of appropriate infrastructure may also remove the opportunity to use a particular mode.

- Air Tranport

(see also Operational Environment)

In emergencies, and especially flooding and conflict situations where road access is difficult, air transport is often the alternative.

Air transport can be provided through:

- schedules air carriers using world airlines and other global logistics service providers or
- air charters; where it is possible to charter planes/helicopters or perhaps to have the use of military aircraft to allow a totally dedicated movement to take place. It is possible to move goods without being constrained by commercial timetables and specific airport locations. The charter may be totally ad hoc, that is, a 'one-off' charter to achieve a particular humanitarian objective. Alternatively it may be a regular event, monthly for example, in order to transport routine supplies or perhaps members of staff. Logisticians should all be familiar with their internal guidelines on the use of military assets.

Factors that influence the decision to charter and the nature of the aircraft chartered:

- availability of different types of aircraft;
- the nature, quantity, weight, size and volume of the cargo Institute All Rights Reserved;
- aircraft equipment available for handling at origin and destination;
- the distance to be travelled and possible constraints on certain airspace;
- ability of certain airports to handle particular types of aircraft regarding take off and landing;
- possible noise restrictions at certain airports;
- securing landing and over-flight permission.

Sending Goods by Air

The air waybill (AWB) is the most important document related to airfreight. Its completion is regulated by IATA definitions. Each AWB has a unique identifying number, the first part of which is the IATA airline code number. The AWB is the carrier's receipt by air, evidence of the contract of carriage and is usually non-negotiable. It is made out to a named consignee who is the only party to whom the carrier can deliver.
Packaging and labelling for air transport is an important consideration. Transport by all-freight aircraft will usually take place using some form of unit load device, so reducing the need for packaging. However, the method of loading and unloading and onward transit may still require a strong and durable packaging medium.

Ultimately it is the nature of the goods being transported that will determine the precise nature of the packaging.

- Road Transport

Use of organisation's own vehicles (own account)

If an organisation decides to acquire its own vehicles, there are a number of areas to be considered. The type of vehicle, in terms of the chassis-cab and the body type, needs to be determined. The nature of the operation may also require that mechanical handling aids need to be incorporated into the overall vehicle specification

Advantages

The advantages of owning vehicles include:

- vehicles can be built specifically to carry a particular product. Special equipment for materials handling can be attached;
- the driver can be specially trained and will fulfil the 'ambassador' role for the organisation;
- vehicles can carry the company livery, perhaps the aid organisations logo and, where appropriate, the Red Cross; and

- management retains total control over the vehicle and its operation.

A major disadvantage

Management of the transport function can occupy a great deal of management time, requires specific expertise and significant capital investment. In contrast, third party carriers can often provide more cost-effective transport facilities but careful consideration must be given to the level of service required.

Third party advantages and disadvantages

Even if an organisation owns its vehicles, there may well be occasions when a need arises for additional capacity, to meet peak activity or other short term needs. This can be met by the use of vehicles supplied by a commercial transport provider (third party).

The advantages of using third party transport include:

- organisations can use commercial providers to meet fluctuating demand requirements;
- variable loads and journeys can be catered for;
- the haulier may be able to offer a more cost-effective and a more efficient service; and

- responsibility for administration of vehicles and drivers is no longer the responsibility of the organisation, allowing staff to concentrate on more productive areas. There is no requirement for capital to be invested in transport.

Disadvantages
A measure of control is lost with third party operations. Performance feedback and communication with customers needs to remain a strong feature and be controlled by the contracting organisation.

Selecting vehicle types

It is important to be able to select the appropriate vehicle for the purpose required even if, at a later stage, it is necessary to revise this choice to reflect availability in the field.
See below a description of the main body types and combinations that are available.

Selecting the body type

The specification of the vehicle body will vary according to the goods or materials being carried and security. There are many variants of body type available; a description of the main body types is shown below.

Identifier Axles & Type	Max Gross Weight (Tonnes)	*Specimen Payload (Tonnes)	Typical Length (Metres)
2 axles 4 wheels	3.5	1.0	Various
2 axles 6 wheels	7.5	3.5	Various
2 axles 6 wheels	18.8	12.0	12.0
3 axles Rigid	26.0	18.0	12.0
4 axles Rigid	36.0	25.0	12.0
3 axles Artic	26.0	18.0	16.5
4 axles Articulated Tractor and Trailer	38.0	24.0	16.5
5 axles Articulated Tractor and Trailer	40.0	24.0	16.5
6 axles Articulated Tractor and Trailer	41.0	27.0	16.5
Vehicle and Drawbar Trailer	40.0	26.0	18.75

* Note that the specimen payload is the weight of goods that could be carried without exceeding the maximum gross vehicle weight. Where legislation does not specify a maximum gross weight, or local circumstances allow, this payload may be increased. For goods which have a high cubic measurement, but are light in weight, the capacity of the load carrying area may be filled before the maximum payload is reached.

Table 2: Selecting the body type.
To download the table, 'right click' on it and then choose 'Save Image As' from the menu or go to Annexes and click on 'Selecting Vehicles Types'.

Platforms

The simplest and cheapest body type is the platform or flat bed. It provides all round access to the load, but offers little security or protection from the weather. Loads also need to be restrained. This will generally involve roping and sheeting, which is a time consuming operation.

Van body

The van or box body reduces the payload of the vehicle, but provides protection for a perishable product and added security. Construction will depend upon the needs for insulation, waterproofing or strength. Access is usually provided by a rear door. Sometimes a door will be built into one, or both, of the body sides.

Curtain sided bodies

Curtain sided bodies overcome the disadvantages of access, since the curtains can be pulled back to reveal the full length of the platform. This improves the speed of loading as well as unloading. Advantages of load restraint and weather protection are maintained, while body weight is less than the box body. Other variants will replace the curtains with sliding panels.

Tankers

Tankers are designed to carry powders or liquids. They require a pumping mechanism and piping to discharge the load.

Bulk carriers

Bulk carriers are generally built as box bodies without the roof. They will require a tipping mechanism to allow the load to be discharged.

Drawbars

A rigid master truck with a drawbar trailer is the usual configuration. The bodies may be of the demountable type. Drawbars offer increased cubic capacity for bulky lighter loads.

Road transport documentation

Whether the vehicles being used are owned, hired or are managed by a third party, it is important to ensure that all local laws relating to the licensing, insurance and regulation of vehicles are being adhered to :

- normally a licence to operate the vehicle on a public highway is required;
- for larger trucks there may be an additional licence fee to be paid;
- vehicles should be insured to at least the minimum required by law; different organisations will have internal policies regarding the extent to which their own vehicles should be insured; and

- vehicles may also require documentation relating to the maximum permissible weights in terms of gross vehicle weight, axle weight and payload.

Transport contract and considerations for a transport contract (see Procurement Annexes).

Drivers are also required to hold the appropriate licence for the class of vehicle they are driving.

- Sea transport

Sea transport is convenient for bulky pre-planned consignments. In the early days of emergency situations, sea transport is not used to service immediate needs in rapid on-set disasters but more to pre-position or serve post disaster and longer term needs. The key document used in shipping is the bill of lading (B/L). Logisticians should familiarise themselves with it.

Bills of Lading

The B/L is the transport waybill for a sea freight consignment. It is usually issued in a set of three originals and several non-negotiable (N/N) copies. The B/L is signed on behalf of the ship owner by the person in command of a ship or the shipping agent, acknowledging the receipt on board the ship of certain specified goods for carriage. It stipulates the payment of freight and the delivery of goods at a designated place to the consignee therein named.

The B/L is the major shipping document and has three roles.

- It affirms the contract of carriage and sets out the terms thereof. It is evidence of the contract between the consignor and the shipping line, and on the reverse details the conditions of carriage.
- It is the carrier’s receipt for the carriage of goods by sea and is signed by the master or another duly authorised person on behalf of the ship owner, acknowledging receipt on board the ship of certain specified goods that he undertakes to deliver at a designated place.
- Possession of the original B/L gives the title to the goods being carried. It is a negotiable document of title to the goods. The consignor must make sure that at least one original B/L reaches the consignee in good time (since he will receive the goods only against presentation of at least one original B/L). The carrier usually establishes three original B/L, which are sent to the consignee under two separate registered mails (it is also possible to send one by ship's bag).

The B/L states to whom and on what terms the goods are to be delivered at destination. Without an original B/L the goods will not be released. The usual way to get the goods without the presentation of the original B/L is the establishment (by the consignee's bank) of a bank guarantee covering the value of the goods. Such guarantee can only be cancelled by remittance of the original B/L to the bank. It is sometimes possible, at the discretion of the carrier, for the consignee, holding a copy B/L to sign a Letter of Indemnity in return for delivery of cargo. On receipt of the B/L it should be passed to the party responsible for clearing the goods. Once the vessel has docked and the goods have been unloaded, the B/L and appropriate customs documents will be required to obtain release of the goods for onward transport.

Terms of the B/L

There are three different entries possible in the box headed “CONSIGNEE”:

- To bearer: this means that any person having possession of the B/L may collect the goods; such person is not required to disclose their identity or to explain how they came into possession of the B/L. The mere fact that they have possession of and present the B/L is sufficient. Issuing B/L "to bearer" is not common practice and carries significant risk.
- To order: this is the form of B/L used most frequently in commercial transactions. As long as the shipper holding the B/L has not endorsed it, he is entitled to dispose of the goods. By endorsing it, he transfers his rights to the endorsee, that is, the person to whom the B/L is assigned by endorsement. Title to the goods is thereby transferred to the new holder of the B/L who may in turn assign it by endorsement to somebody else.
- To a named party (straight B/L): in contradiction to a B/L "to order", the straight B/L (one in which it is stated that the goods are consigned to a specified person) does not entitle the shipper to dispose of the goods. That right is vested exclusively in the receiver who alone has the right to collect the goods, upon presentation of the B/L and proof of his identity.

The Straight B/L may be assigned by means of a document instrument in writing, evidencing the assignment, which the assignee must present to the master of the vessel together with the original B/L when he collects the goods.

On a straight B/L, the term "to the order of" printed on standard B/L must be crossed out, and the deletion initialled by both the shipper and the Master.

A Clean B/L is a B/L, which contains nothing in contradiction to qualify the receipt on board of the ship, the goods in "apparent good order and condition". Goods may sometimes be ‘received alongside’, which can result in a delay prior to the physical loading of the goods onto the vessel.

An Unclean B/L is a B/L containing notation that goods received by carrier were defective.

The Through B/L is issued when a shipper wishes the carrier or shipping line to arrange for transport to a destination beyond the port of discharge. The through B/L, in addition to the agreement to carry goods from port to port, includes a further journey (by sea or land) from the port of ship's destination to a distant place (for instance, a destination inland instead of a port). See INCOTERMS 2000 , INCO terms explanation, INCOTERMS narrative, INCOTERMS practical application chart.

- Rail transport

Rail transport is a safe land transportation system when compared to other forms of transportation. Rail transportation is capable of high levels of passenger and cargo utilization and energy efficiency, but is often less flexible and more capital-intensive than highway transportation is, when lower traffic levels are considered. Rail transport costs less than air or road transport. It is very suitable for the movement of large load sizes over longer distances, but it has the following disadvantages:

- it lacks the versatility and flexibility of motor carriers since it operates on fixed track facilities. It provides terminal to terminal, rather than point to point delivery services;

- though it offers an effective method of bulk haulage, it is slow.

Documentation for movement by rail is controlled through the rail waybill. The rail waybill is a non negotiable document. It contains the instructions to the railway company for handling, dispatching and delivering the consignment. No other document is required expect for international transport across borders, where enquiries should be made locally as to the proper documentation needed.

- Other modes of transport

Other modes of transport especially valid for emergency situations and remote under-developed areas are:

Animal

The goods being moved must be packaged in relation to the weight that the particular animal being used can carry. For information, the table below shows the animals used most frequently in such situations and their approximate work rates. These may vary locally because of climatic or other local conditions.

Barges and boats

Where road and rail transport is not possible due to lack of infrastructure it may be necessary to transport goods by river. This mode of transport also suits bulk shipments of commodities. This will often be done using motorised barges or similar vessels. Goods can be loaded and unloaded using jetties and quayside facilities. In some cases they may be unloaded from seagoing vessels direct for onward transit.
What size and type of barge (self-propelled or dumb) that may be required will be determined by availability. Barges are used frequently in the Rhine/Danube basin, the Mississippi basin and Mekong Delta and the coastal waters of south-east Asia. It provides a relatively cheap and simple means of transport which is not dependent on sophisticated port handling facilities. Barges have been adapted in the United States and Europe so that they form part of a multi-modal transport system where barges are integrated with road and rail movement. Also barges are part of the lighter aboard ship (LASH) / barge system and refers to the practice of loading barges (lighters) aboard a larger vessel for transport. It was developed in response to a need to transport lighters, a type of unpowered barge, between inland waterways separated by open seas. Lighters are typically towed or pushed around harbours, canals or rivers and cannot be relocated under their own power. The carrier ships are known variously as LASH carriers, barge carriers, kangaroo ships or lighter transport ships.

Administration - Safety and security of goods to be moved

Legislation and regulatory frameworks for transport usually include a specific requirement for vehicle safety. Most humanitarian organisations also lay down safety and security policies that need to be followed. Requirements will include the vehicle weight, the way it is loaded and how the load is distributed.

Drivers and operators of vehicles are responsible for using a vehicle on the road with a safe and secure load. Legislation will often state that, in transit, the drivers have full responsibility for the safety of their load, even if they did not load it personally. Even if, in some countries, the legislation is not implemented, respected or followed, every effort must be made to ensure that the organisation's drivers are following the legislation that has been laid down.

Avoiding in-transit theft

A thief intending to steal a loaded vehicle requires:

- knowledge of an attractive load;
- the opportunity to access it;
- time to steal it and to get away before detection;
- a market for the goods; and
- limited or negligible perception of risk.

Main sources of vehicle theft are from depots, from overnight parking areas and from the roadside. Theft can be committed by:

- stealing an unattended vehicle;
- hi-jacking the vehicle;
- threatening or bribing drivers.

Drivers are central to prevention of this type of loss, and their integrity is essential.

Consequently, careful recruitment and selection of drivers is critical. Training will impress upon them the need for care, and procedures to follow to avoid risk of theft. Driver identification cards can be used for added security and to avoid thieves gaining access to vehicles by misrepresentation when parked on third party premises. However, there is little to prevent deliberate collusion by drivers. Vigilance is essential and attention to any pattern of discrepancies on loads.

Insurance

Insurance is required for both the load and the vehicle. Insurance for the load may be covered by the overall shipping terms, if the road transport is performing an onward shipment for example. In other cases the load may be covered by a blanket insurance policy. It is advisable to confirm the insurance status and requirements with the sender/owner of the goods to be moved. Necessary precautions must be taken to avoid theft and loss.

The risk of using a transport provider in the required area must be assessed and the appropriate insurance taken out. In moving goods through the use of third party providers, as part of a humanitarian aid initiative, there will be potential risks attached in terms of theft or loss of the goods. It is necessary to understand the level of insurance that the provider will offer to cover the goods it carries on behalf of its clients. Often if any insurance cover is offered, it will be fairly nominal. It is important, therefore, to ensure that the goods that the third party provider is carrying are properly insured.

The cost of this may be influenced by the reputation of the haulier. In setting up contracts with providers, it is important that the situation on insurance be clarified and if appropriate, incorporated in the contract terms. If there is any doubt as to the cover provided, advice from the organisation's office handling insurance should be sought. If insurance costs differ for transportation provided by different hauliers, these should be included in the overall cost comparison matrix.

Things to look out for:

- type of insurance: Who and what is covered and to what extent;
- duration;
- scope: in-country coverage only? What happens when the vehicle crosses borders?
- how are high risk areas covered, if at all; and
- reimbursement process and how long it takes.

References

WFP manuals/guidelines

Customs

Introduction

In the humanitarian sector, particularly during emergencies, knowledge of import and export procedures is a key part of the supply chain process. The Customs Department in most countries administers the customs and excise laws of a country through an approved legislation.

The core business of the Customs Services involves enforcement of prohibitions and restrictions, collection and accounting of revenue, security and trade facilitation, and compilation of trade statistics for economic planning.

How well this aspect is managed will influence the effectiveness and timely response to needs, especially in a rapid on-set emergency. Understanding this aspect and knowing how to manage it, is essential in ensuring that goods can move efficiently and in a timely manner. Effectiveness of the emergency response often depends on customs. Understanding of the various customs management issues is essential.

To enable this process, it is important that staff carrying out importing and exporting activities understand the particular procedures, rules and regulations that need to be followed to facilitate the movement of goods in and out of specific countries.

Customs and Humanitarian Aid

Any goods coming in and going out of a country have to go through certain government control procedure and formalities. Humanitarian organisations are sometimes at an advantage during emergency responses since the United Nations often assumes the lead role in making appropriate arrangements with governments regarding quick access to emergency supplies. The logistics of emergency relief is contingent upon the above-mentioned arrangements and the Logistics Cluster plays a role in each of these. The Logistics Clusters on behalf of the UN Resident Coordinator (UNRC)/ UN Humanitarian Coordinator (UNHC) may try to leverage these advantages for all humanitarian organisations in an emergency.

Some of the problems encountered by humanitarian organisations during emergencies are:

- complicated customs procedures cause delays resulting in congestion at port of entry (airport, road borders, sea port) that affects turn-around time for feeder vessels and railway wagons, so affecting the flow of goods;
- complex and non-transparent administrative requirements, often pertaining to documentation; and
- high costs for processing trade information.

Import/Export General Procedure – How to prepare yourself in an emergency

- Receive information and description of disaster;
- liaise with programming team on assessment of needs;
- use assessment outcomes to determine needs;
- identify source of the supplies in collaboration with pre-positioning entities both in-house and external;
- clarify import/export regulations into and out of disaster area;
- apply for authorities and waivers for the exports and the imports;
- expedite exemptions: where exemptions are already given, immediately authorize shipment of consignments ensuring all the correct paperwork is in place and that the shipping instructions are appropriate;
- prepare for receipt, storage and inspection of the consignments in country;
- have all documentation ready before consignment arrives, along with truck transport;
- arrange for port clearance; and
- as soon as consignment arrives, arrange for inspection and clear the consignments through customs: for food aid ensure there is an independent party.

Scope

Role of Customs

Customs covers issues related to import and export. Import is the purchase and shipment of goods into a country, whereas export is the movement and shipment of goods out of the country.

In its efforts to achieve, respond effectively and efficiently to the aforementioned challenges and reduce the gap between reality and limited resources, the customs department has to strategically pursue the following:

- enhance staff professionalism, integrity and productivity;
- compilation of trade statistics.

The department collects and collates trade data on all imports and exports that the government uses for planning purposes.

- protects society and the environment using proactive enforcement approaches;

- prohibitions and restrictions are enforced through import and export controls.

The customs department is the only government agency mandated to take full control of trade imports and exports and in doing so it:

  - protects public safety, health and morality by barring international trade in illegal substances and materials e.g. narcotic substances, arms and ammunitions, endangered animal species, hazardous wastes, pornographic materials, and expired, counterfeit or sub-standard goods;
  - liaises with other law enforcement agencies nationally and internationally to prevent trans-border crimes e.g. movement of drugs, stolen motor vehicles and smuggled goods;
- enhances voluntary trader compliance through quality client service; and
- facilitates legitimate trade through improved and integrated processes applying modern technology.

Customs administrations all over the world apply almost the same procedures and processes, and speed of clearance depends largely on what controls are required by legislation and the degree to which information and communication technology is applied.

The Customs department is charged with the responsibility of facilitating international trade by providing expedited clearance of goods through simplified and harmonized customs procedures as envisaged under the Revised Kyoto Convention:

- support professionalism of customs agents and other trade chain participants;
- revenue collection and accounting.

The customs department collects the following types of duties:

- import duties - on imported goods which are dutiable as per the Import Duty Schedule published and revised periodically;
- export duties - on certain exports that may be spelled out in the Export Schedule.

The department also collects certain fees and levies upon importation, based on agency basis, such as:

- import declaration fees - on imported products;
- petroleum development levy - on petroleum products;
- foreign motor vehicle permit fee - on foreign motor vehicles;
- sugar levy - on sugar imports;
- horticultural crop development levy - on horticultural produce; and

- revenue stamps - for certain transaction documents which, by law, require affixing of stamps.

The specific activities by customs related to humanitarian organisations are:

- applying for duties and taxes exemption;
- requesting for customs clearance and customs clearance process.

Entities involved

Customs Services Department;

respective governmental authorities and departments such as the Ministries of Health, Agriculture, Ministry of Foreign Affairs, Ministry of Finance, Disaster Mitigation unit/office, Ministry of Communication, etc. depending on the nature of items/goods;

independent inspection company.

Point to note: the specific import-export procedure will vary from country to country. See Logistics Cluster web site: www.logcluster.org and select Customs Information Guide and training module.

Most countries have tried to enhance the capability of customs to perform its core functions by carrying out comprehensive business process improvement (BPI) and implementing full automation by way of electronic declaration of entries/importation transactions.

Customs General Process

It is important to understand customs procedures and the requirements for importation and clearance through customs.

To import any commodity from another country, an importer will have to enlist the services of a clearing agent/company, who is duly registered and licensed by the customs authorities to process the import documentation through customs. Normally the customs authorities would have a list of licensed clearing agents on their website database who are authorised to conduct the business of a customs agency.

Guidelines / Requirements

A thorough analysis and understanding of all customs guidelines and requirements including the necessary documentation will help logisticians to better facilitate import and export of goods.

Import documentation required:

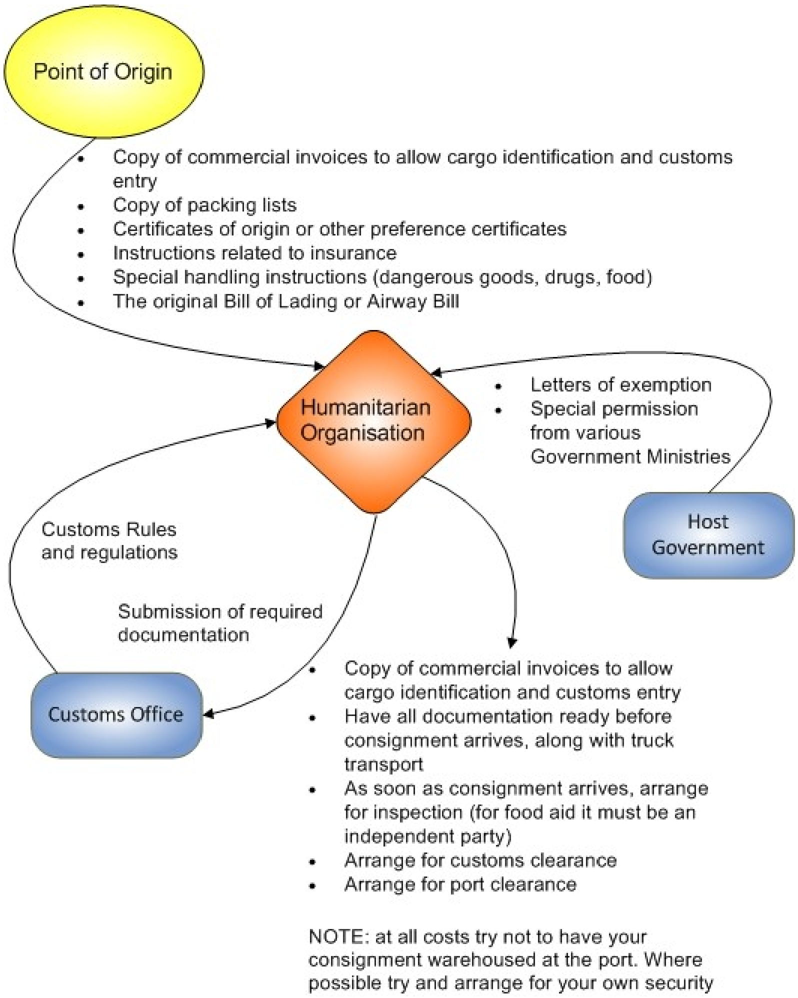


Diagram 1: Customs necessary documentation

To download the diagram, 'right click ' on it and then choose 'Save Image As' from the menu OR go to Annexes or Library.

Import documentation required

- Copy of commercial invoices to allow cargo identification and customs entry.
- Copy of packing list.
- Certificates of origin or other preference certificates
- Instructions related to insurance.
- Additional documentation occasionally requested for sometimes is:
  - details of any previous customs controls on goods being shipped;
  - special handling instructions (dangerous goods, drugs, food);
  - organisations letter about customs exemption;
  - the original Bill of Lading or Airway Bill;
  - special permission from various Government Ministries;
  - In Kosovo and Iraq and some other countries, the original Purchase Order has to be included.

Additional documentation sometimes requested are:

- details of any previous customs controls on goods being shipped;

- import document; the original bill of lading or Airway Bill (AWB and MAWB);
- in countries like In Kosovo and Iraq , the original Purchase Order is also required;
- certificate of analysis, declaration for dangerous goods.

Once a logistician has identified the needs/requirements and confirmed if they qualify for importation, knowledge of the following will speed up and facilitate the clearance process:

- international contracts of sale – INCOTERMS 2000 version - basis of customs valuations;
- sea-freight /airfreight/road-freight/rail freight /courier valuations;
- insurance cover;
- knowledge of the customs border stations/border points of entry and the systems in use for compliance;
- mandatory pre-importation documents-inspections/permits /exemptions, etc;

- mandatory cargo arrival importation documentation;
- customs clearance-entry and declaration of imports as per the customs tariff schedules in force.
- various customs provisions such as:
  - temporary importation for use and re-exportation at a later date;
  - provisional customs release-customs release cargo pending perfection of the documentation at a later pre defined date, e.g. pending exemption letter, certain permits, etc;
  - entry of export cargo;
  - entry of transit cargo, under security bonds;
  - entry of transhipment cargo under security bonds;
  - re-importation of cargo after temporary exportation for repair of maintenance;
  - seizure and destruction of prohibited cargo; and

  - customs penalties/fines for incorrect declaration by consignees or their appointed clearing agents.
- clearance with other authorities such as health, bureau of standards, border security agencies, and any other relevant government departmental requirements;
- obtain pre import documentation such as permits and licences in the country of importation;
- entry and computation of duty and taxes-customs will assess duty payable depending on the value of the item(s) and the duty rate applicable as per the country's tariff laying out the duty rates of imported items in force. Where importers qualify for exemption from duty/tax payments, official waivers should have been obtained and sent to the customs station of entry/where the importation is expected to arrive and enter. The exemptions can either be obtained under specific exemptions 'privileged persons and institutions or – general exemptions 'exempt goods'.
- the country's quality standards as set out by the national bureau of standards(or similar as this is country dependant) which importers have to comply with in entirety.

Computations

The import duty payable on the importation varies as per the following bands:

1. Import duty: a % of the CIF value of the vehicle.
2. Excise duty: a % of the (CIF value + import duty).

3. VAT: a % of the (CIF value + import duty + excise duty).
4. Import declaration fees: a % of the CIF value or a specific minimum amount whichever is higher, is payable.

Some gifts and donations to charitable organizations for their official use or for free distribution to poor and needy persons, or for use in medical treatment, educational, religious or rehabilitation work or other government approved projects, may be granted duty remission on application in writing to the Commissioner of Customs Services.

When goods arrive or are destined to arrive there is a specific process that the Logistician must go through. Some of the key aspects of the process are as follow:

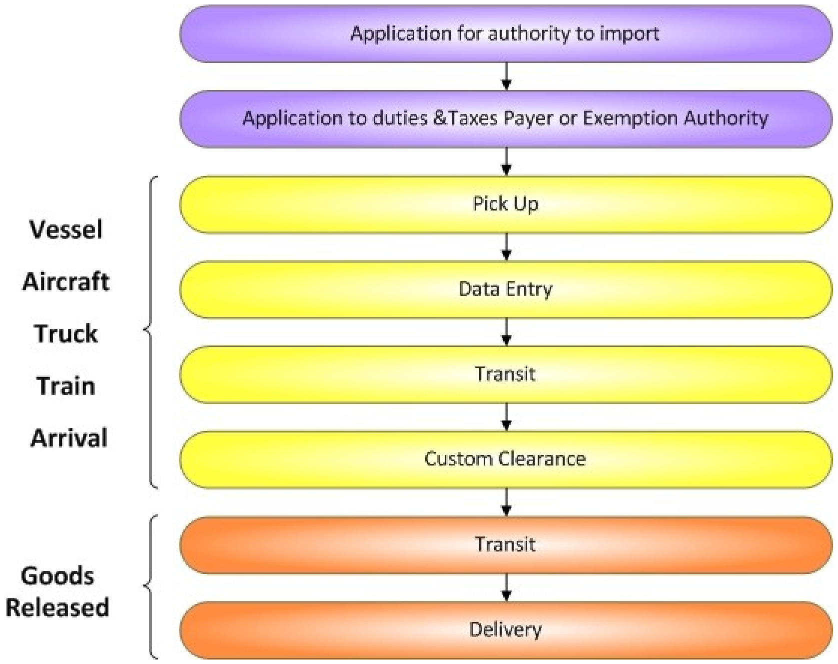


Diagram 2: Customs General Process

To download the diagram, 'right click' on it and then choose 'Save Image As' from the menu OR go to Annexes or Library.

In addition to specific country customs laws and regulations, some existing international legislature is also applicable. See some examples below:

Customs Clearance

The chart below shows the main steps in a customs clearance process. The consignee or clearing agent should verify the country specific requirements and tailor the flow to suit the specific country provisions.

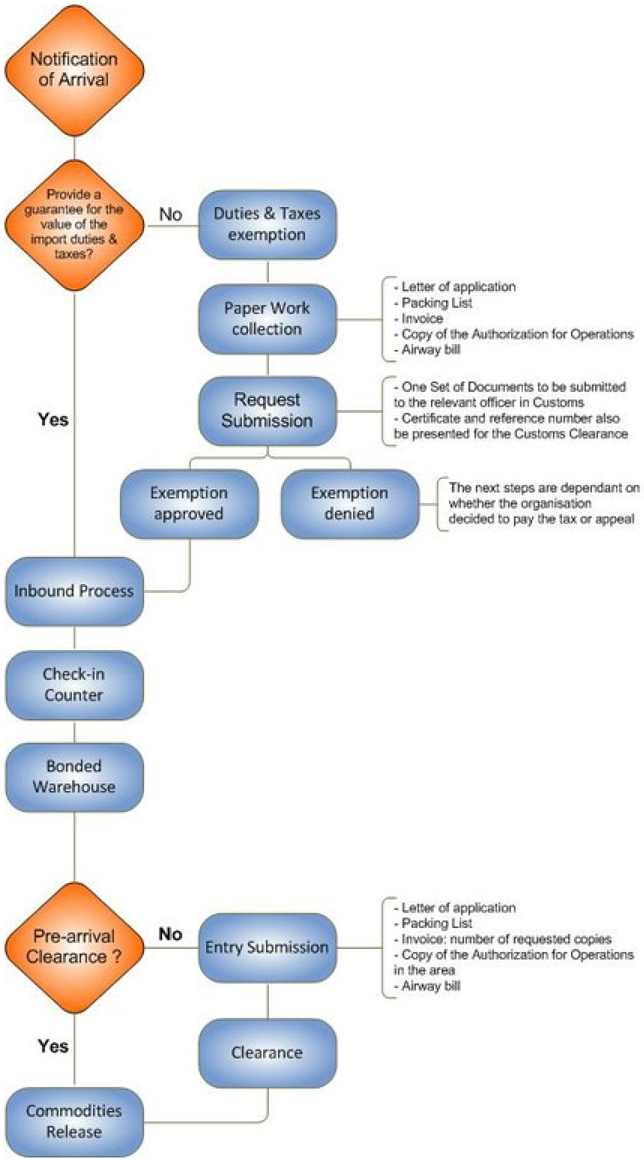


Diagram 3: Customs Clearance Process Flow

To download the diagram, 'right click' on it and then choose 'Save Image As' from the menu OR go to Annexes or Library.

What does it involve?

Control of goods:

- verification of documents, identifying the cargo, electronically or paper-based;
- the cargo goes through a physical inspection by the customs officers.

There is a common misconception that exempted goods/materials are free from customs formalities. As any other type of cargo, all the relevant operations must be carried out by the persons concerned and by customs in order to comply with the customs law. Every shipment must be documented, and in the case of the exempted goods/material, this includes an additional requirement, which is the certification or proof of its status as exempted.

If the importer (or the customs broker acting on his behalf) fails to get the paperwork (including the duties and taxes certificates) ready by the time customs clearance should begin (either before the arrival of the commodities, in the case of pre-arrival clearances, or after, upon arrival), the submission procedure will be

delayed and the customs release will just not happen in time or at all.
The consequences can be delays in the delivery to the beneficiaries or financial with costs such as storage fees accruing and demurrage. Within a short period of time, large amounts money accumulate and the receiver is held accountable.

Duties and Taxes Exemption

Ad-hoc customs related legislature

- The WCO (World Customs Organisation) is an intergovernmental organization comprising of 174 member states and deals with 98% of international trade.
- The Kyoto Convention or International Convention on the Simplification and Harmonization of Customs Procedures came into force in 1974 and is widely accepted (last amendment in 1999). Annex J, Chapter 5, specifically deals with relief consignments and provides the definition of relief consignments, highlights three operational standards and three recommended practices. For more information look at Appendix I: CCC on recommendations and Appendix II for Model Agreement
- The OCHA Model Agreement was approved by the Permanent Technical Committee in 1996 as a result of a project between OCHA and WCO. It outlines the recognized technical quality: clear definitions and simple clauses and sets up a general collaboration framework and very practical and useful specific conditions relating to:

  - duties, taxes or levies;
  - free status;
  - paperwork simplification;
  - inbound and export;
  - process facilitation;
  - pre-arrival clearance submission; and

  - customs clearance is the process of getting permission from the Customs Authorities to bring specific goods/material/products into a country.

At the on-set of an emergency, especially a rapid on-set emergency, there are ad-hoc pieces of legislation in the form of a decree issued by the relevant Ministers' Office. Because of their ad-hoc nature, these decrees would usually lack detailed instructions on the practical implementation. The absence of guidelines on how to apply the decree is due to the fact that most countries are not ready for emergencies in the specific area of customs. Only 14 countries have signed Annex J of Chapter 5 of the Revised Kyoto Convention (International Convention on the Simplification and Harmonization of Customs Procedures), a chapter specifically dealing with relief consignments. It is communally known as “Blank Waiver for Relief Consignments” and will last only for a limited period of time, covering the relief assistance phase.

Governments use and rely on the customs service to control the physical movement of goods, people and conveyances across country borders and frontiers. The customs departments do this by implementing and administrating a range of government policies.

The decision of exempting the goods imported into a territory for humanitarian purposes, from the payment of duties and other taxes, is entirely the decision of the country's authorities. Whether a specific donated item or commodities can be imported into a country without any taxes payment depends on the local government's decision about:

- national humanitarian aid import policy;
- goods qualified under that policy; and
- actors granted with tax-free status.

It is essential that donors and decision-making organizations at origin are aware about the implication of taxes on operating costs.

The customs department, relevant ministry or Ministry of Finance might not qualify every single entity as “of public interest” or “charitable” and grant the duty waiver privilege. Humanitarian organizations dealing with local counterparts, must make sure that the local counterpart receiving the goods:

- is a registered duty-free entity (request and paperwork done in advance);
- is the one taking care of the application and submission of the Exemption Certificates and obtaining documents for every shipment that will prove before the Customs Authorities that no Customs duty or tax is unpaid.

For that purpose, the local counterpart must have the capacity to know the procedures, focal points and regulations within their administration, in order to lodge the application correctly.

If they have not got this specific knowledge (what commodities are prohibited or restricted, quotas, etc.) or are just not familiarised with the requirements and paperwork, it is useful to ask advice at ministries, other NGOs already operating, consultancy firms, and tax experts. Certain items such as medicine and communications equipment may require specific certification and authorisation.

Emergencies and Non-Emergencies

Relief consignments are goods, such as vehicles or other means of transport, foodstuffs, medicines, clothing, blankets, tents, prefabricated houses, water purifying and water storage items, or other goods of prime necessity. They are forwarded as aid to those affected by disaster. In the case of an unforeseen sudden on-set emergency, the situation calls for immediate measures. Relief consignments are sent to the affected area to minimize adverse consequences of the emergency. Depending on the extent of the emergency the local authorities can declare a state of emergency and accept the aid provided by the international community initially in the form of relief consignments.
In these cases, the standard regulations will vary, as the authorities normally draft ad-hoc exceptional regulations for relief consignments being imported for an emergency. These regulations would be in force for as long as the relief operations last.

The supply chain may look as follows depending on the prevailing situation:

Non - Emergency and Others

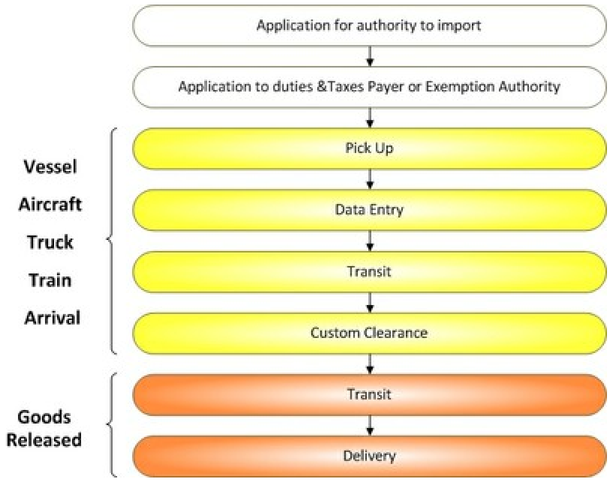


Diagram 4: Non-emergency supply chain

To download the diagram, 'right click' on it and then choose 'Save Image As' from the menu OR go to Annexes or Library.

Emergency

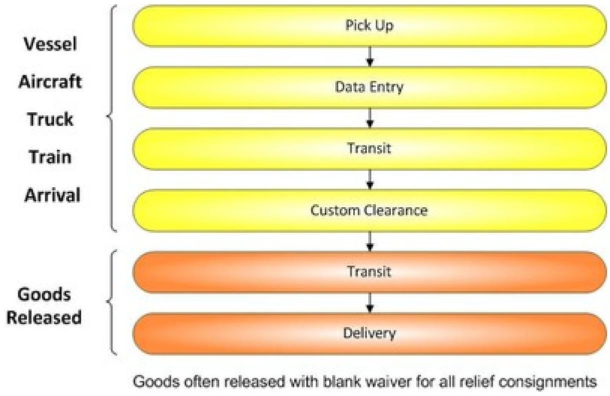


Diagram 5: Emergency supply chain

To download the diagram, 'right click' on it and then choose 'Save Image As' from the menu OR go to Annexes.

Inspection and Damage

There are three types of inspection:

- visual, looking for physical damage or defaults;
- quantitative, represented by shortfalls in quantity;
- qualitative, identified by divergence from specifications.

Note that all visible damage and shortfall must be clearly indicated on the shipping documents and claims lodged.

Methods of payment in import/export

Letters of credit (LC) is an undertaking by a bank to make a payment to a named beneficiary within a specified time, against the presentation of documents which comply strictly with the terms of the LC. The parties to a LC are usually a beneficiary who is to receive the money, the issuing bank of whom the applicant is a client, and the advising bank of whom the beneficiary is a client. Almost all LCs are irrevocable, they cannot be amended or cancelled without prior agreement of the beneficiary, the issuing bank and the confirming bank, if any. In executing a transaction, LCs incorporate functions common to Giros and Traveller's Cheques. Typically, the documents a beneficiary has to present in order to receive payment include a commercial invoice, bill of lading, and insurance documents. However, the list and form of documents is open to interpretation and negotiation and might contain requirements to present documents issued by a neutral third party evidencing the quality of the goods shipped, or their place of origin. An introduction to LCs can be obtained at www.sitpro.org.uk/trade/lettcred.html

Electronic funds transfer (EFT) refers to the computer-based systems used to perform financial transactions electronically. The term is used for a number of different concepts:

- cardholder-initiated transactions, where a card-holder makes use of a payment card;
- direct deposit payroll payments for a business to its employees, possibly via a payroll services company;
- direct debit payments from customer to business, where the transaction is initiated by the business with customer permission;
- electronic bill payment in online banking, which may be delivered by EFT or paper check;
- transactions involving stored value of electronic money, possibly in a private currency; and

- wire transfer via an international banking network (generally carries a higher fee).

Additional Information

- International Commercial Terms: Trade terms used in international contracts of sale: *see INCOTERMS 2000 , INCO terms explanation, INCOTERMS narrative, INCO practical application chart.*
- Generic Customs officer tasks– WFP*, see Terms of References topic in Preparedness section.*
- International Classification of Goods*, see the Classification registry of the UN statistics Division.* Standard International Trade Classification (SITC) is a classification of goods used to classify the exports and imports of a country to enable comparing different countries and years. The classification system is maintained by the UN. The SITC classification, currently at revision three is to be standard. The last revision, revision four, was made in 2006.
  The following excerpt was taken form the UN statistics Division, international trade statistics branch: " For compiling international trade statistics on all merchandise entering international trade, and to promote international comparability of international trade statistics. The commodity groupings of SITC reflect (a) the materials used in production, (b) the processing stage, (c) market practices and users of the products, (d) the importance of the commodities in terms of world trade, and (e) technological changes.
- Bonded Warehouses*:* these warehouses are used for storage of goods whose duty is unpaid and especially where the goods are destined to another country. Pre-positioned stocks are often held in bonded warehouses so that export is quick and goods can be stored for long periods.

- *Customs Procedures.*
- Bonds and guarantees in international trade (content under development).

- Counterfeit and sub-standard drugs (content under development).
- Find out more about the different regulatory systems by comparing countries in the *"Customs Information Guide (CIG)". Visit: http://www.logcluster.org/customs.*
- Training modules: *visit: http://www.logcluster.org/tools/customs/modules.*

Cold Chain

Introduction

Cold chain management includes all of the means used to ensure a constant temperature (between +2°C and +8°C) for a product that is not heat stable (such as vaccines, serums, tests, etc.), from the time it is manufactured until the time it is used.

It involves the equipment and people needed to keep vaccines at the correct temperature (between +2°C to +8°C) during transport and storage from the time they are manufactured up until they are administered.
The cold chain must never be broken. Vaccines are sensitive to heat and extreme cold and must be kept at the correct temperature at all times.
Health workers at all levels are often responsible for maintaining the cold chain while vaccines are stored in the vaccine stores at the province and county levels, or while they are being transported to township and villages, and while they are being used during immunization sessions or rounds. More and more often it is becoming the logistician's responsibility to manage the cold chain as a part of the supply chain.

The Logistics staff must be trained to both use and manage these materials. They must acquire knowledge about the cold chain, must develop thorough work techniques, specifically with respect to maintenance, and must be stable in order to ensure better follow-up. This includes having appropriate efficient logistics mechanisms to manage shipping, fuel, spare parts etc. Without training, the program will be seriously compromised and put at risk.

Definition

Cold Chain: a network of refrigerators, cold stores, freezers and cold boxes organised and maintained so that vaccines are kept at the right temperature to remain potent during vaccine transportation, storage and distribution from factory to the point of use.

(Taken from *Mid Level Management Course for EPI Managers, Module 8: Cold Chain Management, World Health Organisation, 2004*)

Evaluation of Existing Means

The system for guaranteeing vaccines quality is generally referred to as "cold chain". Cold chain management has two categories: managing equipment and managing people.

Evaluations of existing means revealed that some countries needed to improve their systems of vaccines management. Although there were many positive aspects to the functioning of the cold chain, the following weaknesses were observed:

- frequent breakdowns in cold chain (sometimes for a long time) because of the lack of fuel, spare parts and back-up energy source;
- lack of planning for maintenance and cold chain rehabilitation;
- incorrect use of the Vaccines Vial Monitor (VVM) as a management tool; and
- lack of planning for emergencies resulting in organisations not having effective cold chain systems during responses.

These problems slow down improvement in routine vaccination services and hinder efforts to eliminate and eradicate disease. To solve these problems, it is necessary to:

- identify problems in the cold chain and their causes;
- undertake specific actions to remove these causes; and
- strengthen management systems to prevent recurrence of the same or similar problems.

(Taken from *Mid Level Management Course for EPI Managers, Module 8: Cold Chain Management, World Health Organisation, 2004*)

Active Cold Chain (Materials for producing cold)

These include active thermal systems that do not use any phase change materials (PCM) such as water/ice or dry ice. These systems use mechanical or electric systems powered by an energy source, combined by thermostatic control to maintain proper product temperatures.
The equipment used in active cold chain is split into two categories as follows:

- compression refrigerators/freezers;
- absorption refrigerators/freezers.

Adapted from *Rushton, A. et.al.:* "*Handbook of Logistics & Distribution Management*", 1998, Kogan Page Limited, London.

Compression Equipment

These are the models most commonly used. They run solely on electricity (220V / 110V or on a battery). These models use little energy, require little maintenance, produce significant amounts of cold quickly and are easy to repair. They are equipped with a thermostat for setting the desired temperature. Some models require only eight hours of energy per day (“ice lined refrigerators”).

Solar models are of the compression type (source of energy: solar panels, battery). They are expensive and maintaining them requires specialized knowledge.

Note: These models may only be equipped with an HFC 134a coolant which is not harmful for the environment (the ozone layer). This is valid only for compression models since absorption models function with a water/ammonia/helium (or hydrogen*) mixture.

(*) Cannot be purchased locally given the risk that the hydrogen will explode.

Absorption models

The energy sources are: kerosene, gas, electricity (heating resistor). They use more energy and require more maintenance. They produce less cold and are slower. However, they are suitable for situations where electricity is not available or reliable.

Since the cooling circuit is closed, it is not possible to fill it with gas or repair it if there is a leak. However, these models are very reliable.

Models used to store vaccines are particularly well insulated and equipped with a temperature stabilizing device, except for the kerosene model which does not have a thermostat (the best known manufacturers are Sibir and Electrolux). They are used extensively for the Extended Vaccinations Programs (EVP).

Domestic absorption models are generally insulated less well and it is occasionally difficult to maintain a low temperature for storing vaccines, particularly when the external temperature is high (higher than 32°C).

The efficiency of the models that run on oil depends on the quality of the fuel. Decanting and filtering are often required. A kit is available to modify certain burners, in order to improve operating efficiency, despite oil of inferior quality.

Passive Cold Chain (Shipping/storage materials)

These include passive thermal systems that commonly use phase change materials (PCM) such as water/ice or dry ice. These shipping systems are the most basic and cost effective. Some of the basic systems in use are as follows:

- freezers for province, county and sometimes at the township level;
- refrigerators and, in some areas, the new water-jacket refrigerators for province, county and township levels.

Some villages do not have access to a refrigerator for vaccine storage and therefore use:

- cold/cool Boxes at all levels for transporting vaccines;
- vaccine carriers to store vaccines during the immunization session or round;
- isothermal packaging/control materials like paper to wrap the vaccines up when using a vaccine carrier;
- ice packs or ice, as a last resort, to keep the vaccines at a temperature between +2°C and 8°C;
- a thermometer to measure the temperature inside the vaccine refrigerator and cold boxes; and
- a chart to record the day and time of the temperature of the vaccine refrigerator. The chart should be used to record the temperature two times a day (morning and night).

See Equipments for visuals.

Logistics

A rapid logistics evaluation can determine the status of materials and vaccines management at field level, along with the status of the vaccine distribution strategy. Based on this information, and taking into account the geography of the country, Expanded Program on Immunization (EPI) managers can decide which option to use.

Whatever the chosen immunisation strategies, the cold chain structure is based on two options: fast cold chain (see active cold chain) and slow cold chain (see passive cold chain).

(Taken from Mid Level Management Course for EPI Managers, Module 8: Cold Chain Management, World Health Organisation, 2004.)

Example: See Logistics requirements for a vaccination site.

(Source: *Médecins Sans Frontières*)

Some of the logistics activities related to cold chain management are:

- shipping/customs clearance/storage;
- vaccine management;
- insulated shipping containers;
- shipping/storage material (see passive cold chain paragraph).

Shipping, Customs Clearance and Storage

Customs

Regarding the customs clearance of the vaccines, the same procedures as described in the Customs topic apply, but with additional specific requirements linked to vaccine management. Note that requirements vary from country to country.

The first step in the customs clearance process, is contacting the following entities to obtain or verify the import procedures:

- national regulatory authorities (NRA) or head of customs in the destination country. To be cleared, the vaccines must have received marketing authorisation and a release certificate from the national regulatory authority;
- WHO office: vaccines must meet WHO recommended norms and standards (pre-qualification process); and

- local Ministry of Health (MOH): depending on country specific requirements, the MOH may issue a letter approving the shipment.

As reference, usually the general steps are:

- submission of vaccine shipping documents (as soon as they are received) with a request to customs authority for the provisional clearance of shipment to the nominated C&F agent;
- C&F agent immediately processes the shipping documents as per established rules and regulations of government and contacts customs and airlines to coordinate the arrival, transport, checking and safe storage of the vaccines;
- continuous contact is maintained well in advance with the concerned airlines to get accurate and updated information of the flight arrivals of the shipments;
- once the flight arrives, immediate action is taken to release and take delivery of the vaccine shipment and to safely transport the vaccines to the cold storage locations;
- C&F agent checks the cold-chain monitor(s) and other mechanism (if necessary) to identify and reconfirm that the vaccines arrived in good condition before removing the shipment from the airport;
- irrespective of the condition of the vaccines at the time of clearance, the C&F agent clears the vaccines and delivers as per regular procedures;
- the C&F agent informs the concerned official(s) in a timely manner and arranges for the cold room and the required staff to be ready and available to receive/store the vaccines;
- there should be a system in place to arrange to open the cold room and liaise/contact with the store keeper/cold room staff at any time (24-hours/day, including weekends and holidays);
- in the event of emergencies or unplanned shipments, if the cold room is inaccessible, the C&F agent is expected to arrange safe and appropriate storage of vaccines at the airport cold room or alternative location, ensuring proper temperature for storage;
- under no circumstances can any vaccine be left unattended, or outside of the cold room in an open space;
- unannounced shipments are cleared in time, like all other shipments;
- a reliable transport system including a refrigerated/insulated van should be made available at all times for effective transportation and delivery of the vaccines; and

- in emergencies, the use of charter flights is very common. There are separate rules, regulations, systems and procedures for clearance of charter flights with vaccines including obtaining special permission for landing, fly over etc. and various No objection certificates (NOCs) from Ministry of Civil Aviation, etc (Reference “UNICEF”).

Shipping

This involves:

- Cool Box – Vaccine Carrier
- Isothermal Packaging
- Control Materials
- Monitoring Means

All shipping documents for vaccine shipments should be sent in advance of arrival of shipment. The number of days will be determined by the destination country rules. This requirement has been established to facilitate the pre-customs formalities for clearance of vaccines to ensure prompt clearance of the heat or cold sensitive items upon arrival. Some countries have an exceptional early release procedure pending document processing during emergencies.

Documents that accompany shipments

The following original documents must accompany the consignment when it is shipped, and a copy of these must also be placed in the box numbered “one”:

- airway bill;
- supplier’s invoice;
- packing list;
- lot release certificate issued by the national regulatory authority of the country of manufacture for each lot of vaccine supplied; and
- any other documents, certificates or instructions specified in the individual contract.

The shipping carton containing the documents should be clearly labelled with the words “Containing vaccine shipping documentation”.

Due to the sensitive nature of vaccines, shipments are handled with utmost diligence and special care. Vaccines are mostly transported by air.

The following information shall be stated on the airway bill:

- consignee’s name, address and telephone number;
- purchase order reference;
- consignee’s requisition reference;
- type of vaccine and quantity;
- instructions to: “Telephone consignee upon arrival (repeat telephone number)”; and
- handling information: “Medicines – Vaccine – For human use – Highly perishable – Not to be delayed."

For all vaccines other than oral polio vaccine (OPV), the following instruction should be stated in the AWB: “Throughout shipment, pending reshipment and prior to collection by the consignee, the vaccine must be stored at +2°C to +8°C (i.e., +35°F to +50°F)”. For OPV, the following instruction should be stated in the AWB: “Throughout shipment, pending reshipment and prior to collection by the consignee, the vaccine must be stored at -15°C to -25°C (i.e., +5°F to -13°F).”

Airlines web online tracking is checked before the arrival of every vaccines shipment to see if there is any change in schedule. Constant touch with airlines and customs and forwarding agents is maintained.

Storage

After arrival vaccines are cleared and immediately offloaded from the aircraft and directly loaded onto trucks for further transportation to the cold storage facility. Delivery of vaccines at the cold storage is strictly monitored to ensure maintenance of the cold chain in an appropriate manner. Some countries have special requirements for vaccines. There is therefore no standard clearing process but generally the following will apply.

Vaccine management

- The vaccines must be kept at the correct temperature when being transported.
- Maintenance of the cold chain requires vaccines and diluents to be:
  - collected from an airport as soon as they arrive;
  - transported at the correct temperature from the airport and from one store to another;
  - stored at the correct temperature in stores at the provincial, county, city, township or village health centres;
  - transported at the correct temperature to outreach sites; and
  - kept cold during immunization sessions or rounds.

The figure below illustrates the cold chain from manufacturer to end user (child to be vaccinated), including all steps along the chain, in order to ensure a proper cold chain.

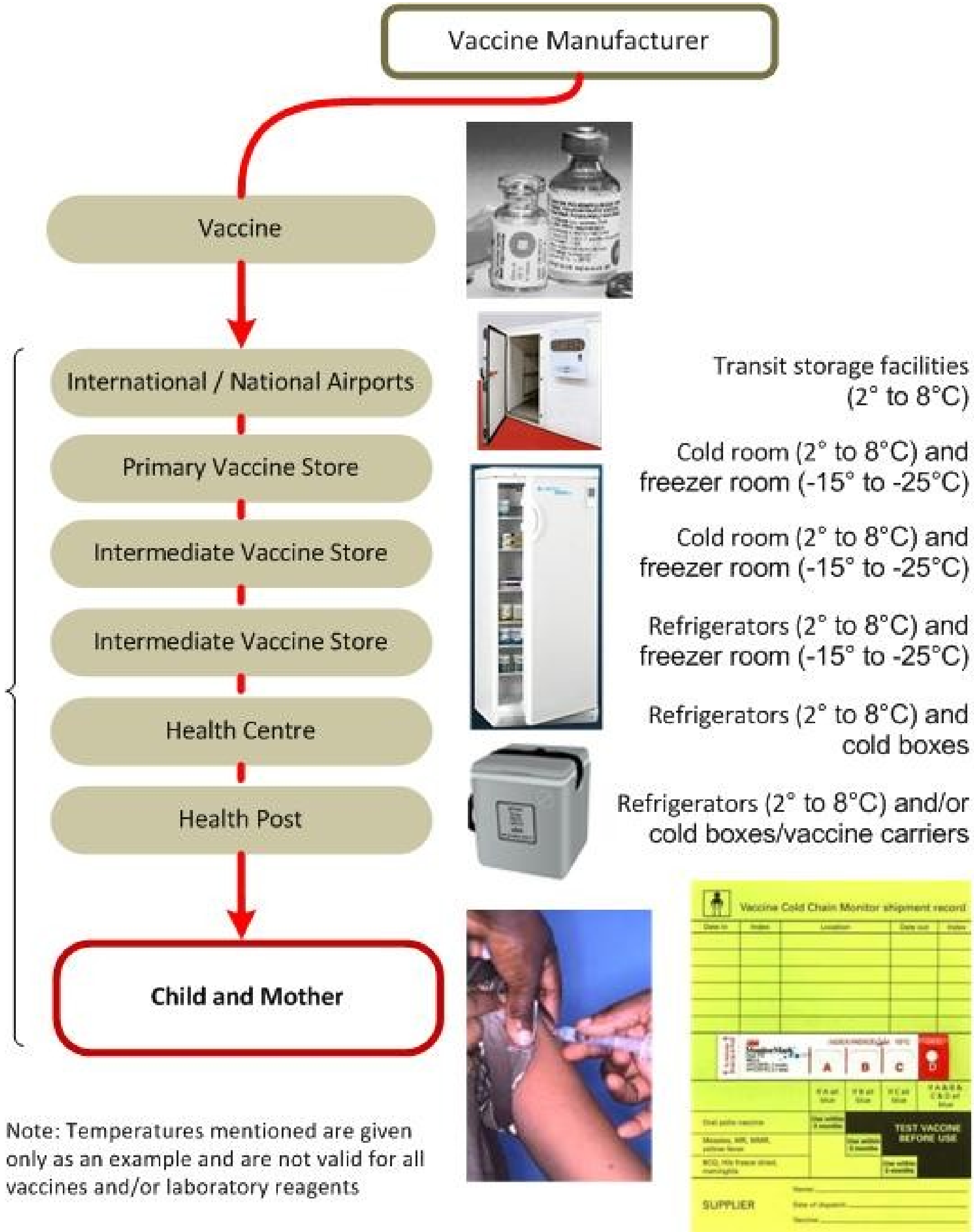


Diagram 1: Cold chain

To download the diagram, 'right click' on it and then choose 'Save Image As' from the menu OR go to Annexes.

Insulated shipping containers

Insulated shipping containers are a type of packaging used to ship temperature sensitive products such as foods, pharmaceuticals, and chemicals. They are used as part of a cold chain to help maintain product quality or condition.

An insulated shipping container might be constructed of:

- a vacuum flask similar to a "thermos" bottle;
- fabricated thermal blankets or liners;
- molded expanded polystyrene foam, similar to a cooler;

- other molded foams such as polyurethane, etc;
- sheets of foamed plastics;
- reflective materials;

- bubble wrap or other gas filled panels; and

- other packaging materials and structures.

Some are designed for single use while others are returnable for reuse. Some empty containers are sent to the shipper disassembled or “knocked down”, assembled and used, then knocked down again for easier return shipment.
Insulated shipping containers are part of a comprehensive cold chain which controls and documents the temperature of a product through its entire distribution cycle. The containers may be used with a refrigerant or coolant such as:

- dry ice
- gel packs (often formulated for specific temperature ranges)

Some products (such as frozen meat) have sufficient thermal mass to contribute to the temperature control, etc
A temperature data logger is often enclosed to monitor the temperature inside the container for its entire shipment.
Labels and appropriate documentation (internal and external) are usually required.
Personnel throughout the cold chain need to be aware of the special handling and documentation required for some controlled shipments. With some regulated products, complete documentation is required.

Installation, Care and Maintenance

Installation – Points to note

Respecting certain parameters concerning position helps the refrigerator function well:

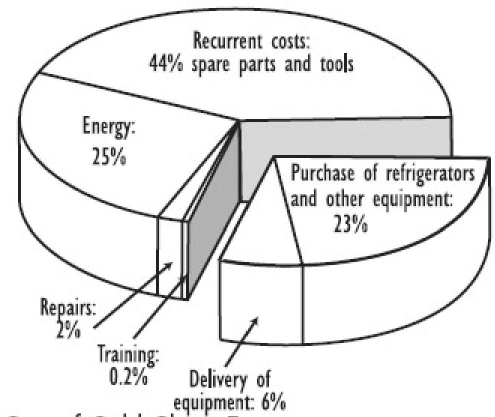
- out of the sun and away from any source of heat;
- in a well aerated area, cool if possible, but not ventilated (risk that the flame will be blown out in the case of a model running on oil or gas);
- with a space of 30 to 40 cm around the equipment in order to allow air to circulate and facilitate maintenance;
- placed on wedges for protection against humidity; and

- installed horizontally (absorption models) to ensure good circulation of the cooling gas. Use a plumb line or an air bubble level.

Care/Maintenance – Points to note

- Maintenance is essential for ensuring that the equipment runs well, but having trained, conscientious and stable staff is the best guarantee of this.
- A minimum amount of spare parts (glass, wicks, etc.) must be available. In the case of maintenance and small repairs, the staff must be specially trained; in the case of major repairs, a refrigeration technician is required.
- Storage: specific rules apply depending on the type of equipment (chest or front opening) and the products to be stored in it.

To simplify maintenance and repair, cold chain equipment managers and donors are advised to procure the same types and models of equipment. The costs of spare parts, tools, repairs, and fuel to run the equipment must not be overlooked during budget preparation. As the pie chart shows, these costs are much more significant over a ten-year period than the initial cost to purchase cold chain equipment.



Cost of Cold Chain Equipment over a 10-year Period

Diagram 2: Cost of cold chain equipment

Distribution

From a logistics point of view, the same principles of distribution apply as in general logistics distribution. These principles are covered in the Distribution topic with the exception of the use of specialised carriers and containers as discussed in this topic. The distribution of cold chain should be built into the organizational distribution plan to maximize on the limited transport facilities available during emergencies.

The logistician must pay attention to the following in relation to cold chain:

Vaccine Arrival

Every international shipment of vaccines from a manufacturer should include a blank vaccine arrival report (VAR) form, as shown on the following page. When the shipment arrives, the individual responsible for monitoring vaccine arrivals and storage fills in the VAR and gives a copy to the local office of the procuring agency. The report documents the condition of the shipment and the quantities received, and it confirms that all other necessary documentation is included. If problems occur, the VAR can be the basis for initiating corrective action or making claims.
Vaccine Arrival Report (WHO/UNICEF)

The logistics function must avoid:

- shipment of vaccines by way of airports that lack cold rooms;
- consignments to the wrong party;
- shipment of the wrong vial sizes;
- shipment of the wrong quantity of vaccines and diluents;
- shipment of vaccines that are due to expire soon;
- arrival of vaccines on weekends or holidays;
- shipment of vaccines without:
  - advance notification
  - sufficient icepacks
  - cold chain monitors
  - documentation needed for customs clearance

(Taken from Immunization Essentials – A Practical Field Guide, USAID, 2003)

The organisation of supply within a country is an integral part of the overall cold chain system, and should be properly planned and executed. There are two types of supply procedures:

- vaccines and other supplies to be collected by lower level institutions; and
- supplies to be delivered to the lower level institutions.

See Organisation of Vaccine supply for details.

Temperature Control

Some vaccines are very resistant to heat and are shipped from the manufacturer without insulation. They are, however, damaged by temperatures above +48°C. A special device is therefore used to monitor temperatures during shipment. One indicator is included with each shipment of minimum doses. The shipping indicator should be kept with vaccines if they have to be stored outside the cold chain.
In cold climates, vaccines should be protected from freezing during transport. They should therefore be packed with a cold-chain monitor and Freeze Watch TM, according to the procedures. To avoid damage to the vaccines the staff must know how temperatures are monitored and understand how to interpret temperature readings (indexes).
See some Tools for Monitoring Temperature.

Example: Table 2: Recommended temperature ranges

Vaccines	Stages of the cold chain	Maximum temperatures	Minimum temperatures
OPV, BCG, measles, yellow fever	All	+ 8°C	-20°C
Hepatitis B, DTP	All	+ 8°C	+ 2°C
DT, TT	Transport	+ 40°C	+ 2°C

DT, TT	Storage	+ 8°C	+ 2°C
Diluent	Transport	Ambient	+ 2°C
Diluent	Storage	Ambient	+ 2°C
Diluent	Point of Use	+ 8°C	+ 2°C

To retain maximum potency a vaccine should be kept in its safe temperature range.

Quality Control Tools:

Vaccine Arrival Report (WHO/UNICEF)
How to choose appropriate Cold Chain Transport (UNICEF)
Choosing a suitable source of energy (WHO)
Estimating required cold chain capacity (WHO)
Tasks for Cold Chain Officers and Supervisors (WHO)
Some tools for monitoring temperature (USAID)
Refrigerator Temperature Monitoring Chart (WHO)

Human Resources

See Tasks of Reference for Cold Chain Officers and Supervisors. Also available in "TOR" topic under "Preparedness" section.

Conclusion

Trained and experienced logisticians are critical to the effective management of cold chain. Because of the perishable nature of the product, good knowledge of cold chain, close monitoring, timely movement and appropriate storage is highly recommended to minimise risk exposure, avoid wastage and therefore be cost effective and reach the aim of properly vaccine the target population.

Reference

Mid Level Management Course for EPI Managers, Module 8: "Cold Chain Management", World Health Organisation, 2004.
Medecins Sans Frontieres - *CEFORLOG.*
*"Handbook of Logistics & Distribution Management", A. Rushton et.al.,*1998, Kogan Page Limited, London.

"Immunization Essentials – A Practical Field Guide", USAID, 2003.

Warehousing and Inventory Management

Definition

A simple definition of a warehouse is:

‘A warehouse is a planned space for the storage and handling of goods and material.’

(Fritz Institute)

In general, warehouses are focal points for product and information flow between sources of supply and beneficiaries. However, in humanitarian supply chains, warehouses vary greatly in terms of their role and their characteristics.

Global Warehouses

The global warehousing concept has gained popularity over the last decade as stock pre-positioning becomes one of the strategies for ensuring a timely response to emergencies. They are usually purpose built or purpose designed facilities operated by permanent staff that has been trained in all the skills necessary to run an efficient facility or utilising 3PL staff and facilities. For such operations, organisations use, information systems that are computer based, with sophisticated software to help in the planning and management of the warehouse. The operating situation is relatively stable and management attention is focused on the efficient and cost effective running of the warehouse operation. Numerous organizations have centralized pre-positioning units strategically located globally. Some of these offer extended services to other humanitarian organizations on a cost plus operating charges basis. The United Nations Humanitarian Response Depot (UNHRD) Network.

Field Warehouses

They are usually temporary in nature. They may be housed in a building which was not designed to be used as a warehouse or in a temporary building/structure, in mobile units such as rub halls, Wiikhalls and sometimes are little more than a tent in a field. The initial staff may be a casual workforce that has never worked in a warehouse before and the inventory system is more likely to be paper based. Often the situation is initially chaotic, sometimes dangerous coupled with a humanitarian need which may be very urgent. The management style must therefore be practical and action oriented with a focus on making the humanitarian goods available as quickly and efficiently as possible, but yet at the same time accountable.

Policies and Procedures

Policies

The policies contain hard and fast rules and regulations that define the general conduct of the warehouse operation. Examples of the types of policies that organisations will define are as follows:

- organisational specific warehouse management policy and procedures guideline outline
- health and safety
- human resources management
- security
- pest control
- warehouse maintenance and cleaning
- quality control

- record keeping and reporting
- reverse logistics – Return of goods and exit strategy in the event of downscaling or shutting down operations

- disposal of obsolete and damaged goods.

Procedures

The procedures' document defines step by step how the activities in the warehouse should be carried out and clearly defines the processes to be adopted. These can be adopted as ‘best practice’.

The procedures provide visibility of the operations for managers and donors.

However, in creating such procedures, care must be taken to avoid constraining the use of local initiative which might be required to deal with local conditions. Procedures should be considered as streamlining the business processes and providing checks and balances. They provide guidance to warehouse managers and must have some level of flexibility to cater for unique situations, than to be rigidly adhered to. This can be achieved by limiting the level of detail that the procedures document defines, allowing more flexibility and/or by arranging ‘dispensations’ to allow departure from the procedures in order to optimise local performance, especially in emergencies.

The procedures will normally provide the step by step guidance on how to manage each aspect of warehousing and may cover:

- receiving and issuing of supplies;
- quality control or verification;
- storage of goods;
- how to control stock movement (stock control);
- documentation flow;
- how to detect and deal with stock losses;
- how rejected material will be managed; and

- how to deal with unwanted material, obsolete and scrap, disposal.

See also a Warehouse Rental Contract sample.

Types of Warehouse Space

- Commercial: in rented building used for business.
- Government or state: such as at the ports or harbours. This is common in emergency situations.
- Transit: for temporary storage of goods destined for different locations and need storage for a very short time.
- Bonded warehouses: for storage of goods whose duty is unpaid and especially where the goods are destined to another country. Pre-positioned stock is often held in bonded warehouses so that export is quick and can be stored for long periods sometime.

- Open storage: not ideal for perishable products but in emergencies, sometimes the only alternative.
- Space that is owned and managed by the organisation.
- Pre-fabricated warehouses where there are no permanent structures available. This is common practice in emergencies.

Basic Principles of Warehouse and Inventory Management

- Planning inbound receipt procedures.
- Storage formalities e.g:
  - location management
  - inventory control
  - occupational health and safety
- Outbound delivery procedures.

See Inventory Management Guidelines and refer to the Annexes for different samples: Perpetual Inventory form, Stock Count Report form, In/Out Stock Report form.

How to Select and Set-Up a Warehouse

Determining Needs

In determining needs, one should look beyond the basic need of a warehouse to store things. Whilst, this is correct there are also other considerations.

- the volume of goods;
- speed of through-put required;
- as a transit point;
- breaking bulk location;
- an area for sorting and consolidating different goods;
- to enhance the speed of the response;
- to protect and account for inventor; and
- as a buffer in the event of a break-down or delay in the supply pipeline.

Determining Storage Requirements

Selecting a Suitable Location

There are a range of factors to consider when deciding on the location of a new warehouse facility and these may vary depending on whether you are selecting a location for a temporary building or selecting from one of a number of existing buildings.

These may include:

- proximity to ports of entry and beneficiaries

- existing buildings
- security
- the context
- site condition
- access
- services
- land size available
- purpose of warehouse
- previous use of the facility
- floor weight
- access to labour

Warehouse Selection

Factors to consider:

- nature and characteristics of goods to be stored;
- nature of handling equipment available;
- duration of storage needed i.e. short term or long term;
- the need for other activities, e.g. repackaging, labelling, kitting, etc;
- access and parking for vehicles;
- number of loading docks required; and

- secure compound.

Warehouse Preparation Planning

Space layout

The areas that should be planned are both the general storage areas and the areas for goods receipt, consignment picking and goods dispatch. It is also desirable that space should be set aside for the following activities:

- equipment maintenance and parking;
- charging of equipment batteries such as pallet trucks;
- refuelling of trucks;
- an area for garbage disposal e.g. empty packaging;
- a quarantine area for keeping rejected goods, goods to be sent back or destroyed;
- an employee rest area;
- washroom; and
- an administration office.

Planning

It is worth keeping these requirements in mind during the planning of the main operating areas. Planning consideration needs to be given to the following:

- allocate space for each type of product and locating number;
- allow sufficient space for easy access to the stacks for inspecting, loading and unloading. Stacks should be one meter from the walls and another meter between stacks;
- sizing the goods receipt and despatch area;
- allow space for storage of cleaning materials and supplies;
- allocate areas for damaged items by consignment number;
- allow sufficient space to repackage damaged items and place it in separate stacks;
- sufficient free space is needed to operate a warehouse effectively. When planning the size of a warehouse consider:
    - planning on having about 70-80% utilisation of available space, whilst considering:
    - throughput rate
    - number of sku's
    - handling characteristics of items, etc.

See Stacking guide in the Annexes.

How to calculate warehouse storage space.

Special storage needs

Some relief items require special attention in terms of the type and security of the storage area. For example:

- Medical supplies and drug shipments can contain a large number of small, highly-valued and, often, restricted items, many with a limited shelf-life. Thus, a secure area is required, as well as judicious attention to expiry dates.
- Hazardous products such as fuels, compressed gases, insecticides, alcohol, ether and other flammable, toxic or corrosive substances must be stored separately, preferably in a cool, secure shed in the compound but outside the main warehouse.
- Antibiotics and vaccines may require temperature-controlled cold storage arrangements, with sufficient capacity and a reliable, as well as a back-up, power source.
- With combustible items, such as alcohol and ether, specific attention is required when storing and handling. Inventory management techniques need to be implemented to prevent wasteful surpluses and to ensure proper stock rotation to avoid costly losses due to expired goods. Procedures for controlling, preserving and releasing medical supplies and drugs should be established in consultation with the medical experts.

Space utilisation and handling

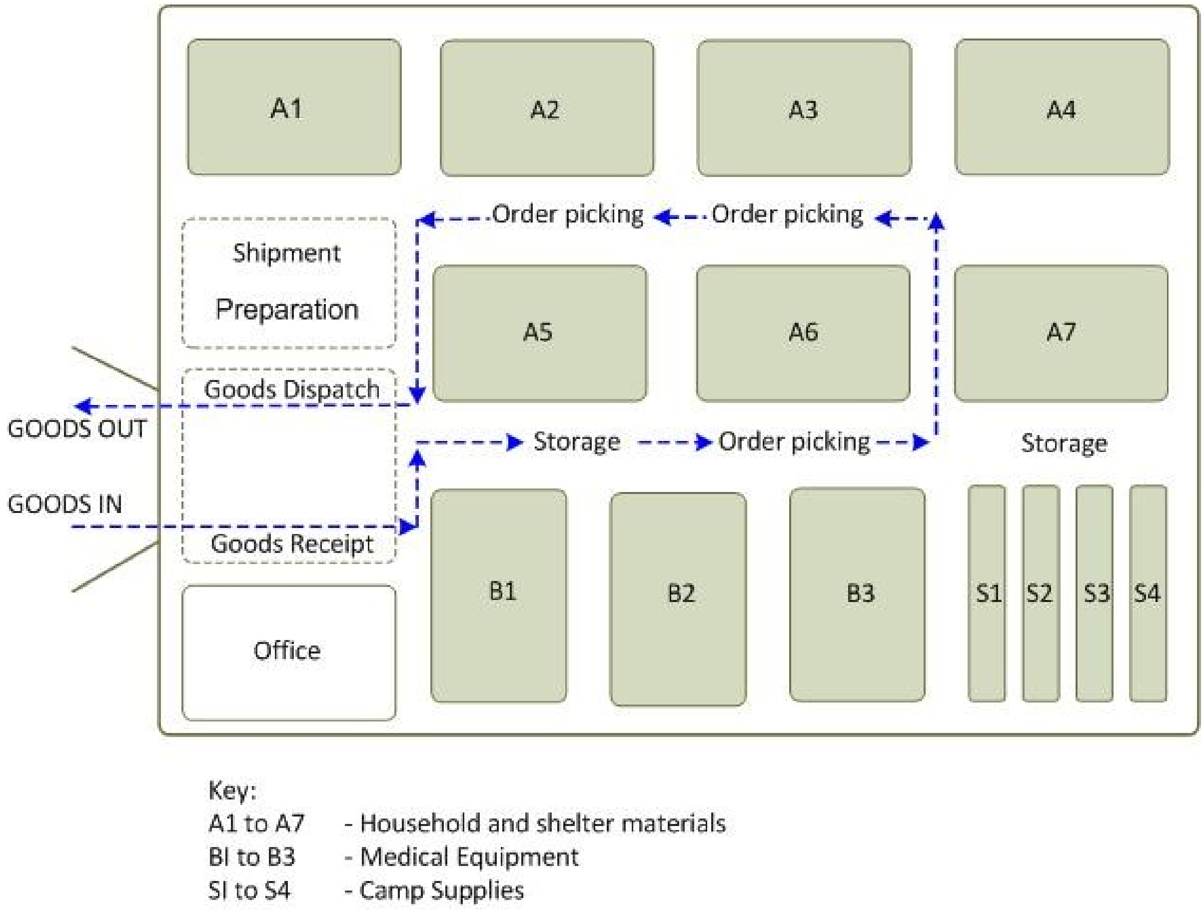


Diagram 1: Space utilisation

To download the diagram, 'right click' on it and then choose 'Save Image As' from the menu

As shown above, the warehouse operation is composed of four key work activities:

- goods receipt
- storage
- picking
- goods dispatch

To estimate the resource requirement for the whole warehouse, one should start by estimating the requirements for each of the key work activities in turn and the level of demand. Then, the resource requirements for all activities should be combined together, taking into account the way that the activities are phased during the working day, in order to make an estimate of the total resources required.

Aspects to consider when managing Warehouse Operations

- planning the workload
- allocating resources
- space utilization & handling, (see the diagram above):

- receiving goods;
- storing goods.
- assembling consignments
- despatching consignments
- disposal of goods
- pest control
- security
- inventory management
- handling and stacking techniques
- occupational health and safety

Managing Inventory Levels

It has been established that the role of inventory management is to ensure that stock is available to meet the needs of the beneficiaries as and when required.

Inventory represents a large cost to the humanitarian supply chain. This is made up of the cost of the inventory itself, plus the cost of transporting the goods, cost of managing the goods (labor, fumigation, repackaging, etc) and keeping the goods in warehouses. The inventory manager's job is to make inventory available at the lowest possible cost.

In order to achieve this, the inventory manager must ensure a balance between supply and demand by establishing minimum holding stocks to cover lead-times. To achieve this, the inventory manager must constantly liaise with the programs to keep abreast of changing needs and priorities. The warehouse must always have sufficient stocks to cover the lead-time for replacement stocks to avoid stock-outs.

Inventory Control

There are two methods of inventory control that are applicable to emergency situations:

1. reorder level policy
2. reorder cycle policy.

Both are applicable to humanitarian situations and have associated pros and cons. Note that EOQ in practice only works in a fairly stable environment where demand variability and replenishment lead-time are reasonably stable and predictable. This is not the case in an emergency. Economic order quantity is applicable in more stable environments such as refugee camps and perhaps later in a relief/recovery phase.

Inventory management in an emergency is more ‘project based’, matching supply with demand in a rapidly changing environment. This requires building a supply chain that has a high level of flexibility and adaptability, with rapid identification of need and rapid fulfilment of that need through the supply chain.
In managing this sort of system, inventory should be considered in relatively small quantities (inventory packages of associated relief items) that are attached (pegged) to an identified need then moved (and tracked) through from source to the identified need (the user).
Optimisation comes from having logistics systems that can configure, procure and consolidate these packages quickly and at least cost and a distribution chain that is flexible and can adapt to changing requirements quickly and at least cost.

Information systems that facilitate transparency of the supply chains inventory levels and location + peg supply to demand provide the visibility necessary to facilitate good planning and decisions that maximise service and reduce cost.

Stock control and movements

The warehouse/inventory manager is responsible for monitoring the movement of goods as they are transported from the supplier and for the control of stock movement in the warehouse facility.
The vital stock control measurements include:

- establish levels of operating stocks based on consumption/rate of usage. The stock levels shall be reviewed from time to time depending on current needs. (See “Inventory control above);
- ensure that weekly and monthly stock balances reports of each stock item and the total value are prepared;
- maintain monthly stock usage report of each item kept in the store and the overall in the usage trend in last six months;
- review and report on six monthly basis slow moving items indicating the last movement date the unit value and total value and liaise with user department;
- establish quantity, lead -time and availability of each item supplied on the market;

- keep a record of all non- stock items received from suppliers, returned to suppliers and issued out to users.

See monthly inventory report and stock report.

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Monitoring Goods in Transit

- order lead time
- tracking orders for goods
- controlling stock movements:
    - establishing minimum stock levels and monitoring the same;
    - goods receipt quality inspections;
    - physical stock control in the warehouse;
    - controlling Specialised Items; and

    - releasing stock from storage and goods despatch.

To facilitate and account for movement of stocks the following documents could be used:

- delivery notes or waybill samples 1 and 2 or packing list samples 1 and 2;

- goods received notes, see several samples 1, 2, 3, and 4;
- stock card;

- bin card; and
- consignment notes.

See in the Annexes the warehouse flow chart.

Stock Records - Documentation

- stock identification
- stack cards, see samples 1 and 2
- bin cards
- stock Checks: see inventory section for different samples or in the Annexes
- stock loss reporting
- reporting of stock levels.

Resource Requirements

In addition to the work methods, equipment and space requirements it is essential that the warehouse is adequately resourced. This is done by planning or estimating the requirements for people and equipment in order to operate the warehouse facility.
There is a trade-off to be made between the people and handling equipment requirements for any given workload.
In global warehouse operations, which are run like commercial operations, the focus is on minimising the cost of running the operation. In this situation, it is often better to invest in handling equipment and reduce the dependence on people resources.
However, in field operations, many humanitarian organisations prefer to hire local labor which provides employment instead of relying on handling equipment.
The requirement for the total amount of resources required will be determined by the amount of goods flowing into and out of the warehouse, as shown in the diagram below.

Basic Warehouse Equipment

Various types of equipment are required to ensure the smooth execution of work in a warehouse. All equipment should be properly stored when not in use and a regular maintenance schedule posted.
Warehouse staff should be trained in standard daily maintenance practices and the correct use of equipment.
Where necessary, they should be equipped with personal safety equipment such as work gloves, work boots, goggles, etc.

Required equipment may include:

- sufficient quantities of standard forms, calculators and stationery to keep proper storage records;
- small tools for opening cases, such as hammers, pliers, crowbars, steel cutters;
- tools and materials for store repair and simple maintenance;
- supplies for reconditioning damaged packaging, such as bags, needles, twine, oil containers, stitching machine, strapping machine, adhesive tape and small containers or cartons;

- a sampling spear for inspecting foodstuffs;
- scales for weighing goods;
- standard wooden pallets in sufficient numbers – ideally international;
- standardization organization’s “Euro” type (120 × 80cm);
- two-wheel hand trolleys for moving supplies within the warehouse;
- a pallet-jack to move pallets;
- a forklift where pallets are to be loaded and offloaded from trucks;
- brooms, dust pans, brushes, shovels, sieves, refuse bins for cleaning and disposing of collected waste;
- first aid kits, flashlights, fire extinguishers and other fire-fighting equipment both inside and outside the warehouse;
- weighing scales; and

- ladders.

Care of Warehouse equipment

Warehouse equipment is maintained to prevent accidents and breakdowns from occurring.
Maintenance activities consist of inspections, regular servicing and monitoring performance for failure trends, as this will enable symptoms to be recognised before failure occurs.
Equipment maintenance has a strong health and safety bias. Often health and safety legislation will impose on management an obligation for safe systems of work. Ensuring safe policies and procedures of work will require an examination of men, machinery, methods, materials and environmental aspects.
Some areas to pay attention to:

- planned maintenance
- maintain equipment
- maintain building
- completion of maintenance records

Legal Considerations

Leasing Temporary Warehouses/Contracting.

The common practice in emergencies is to lease or rent, not purchase warehouses. In this situation, there is often a shortage of suitable buildings or locations for warehouse space and this can often cause the costs to increase significantly. Therefore, it is often necessary to utilise temporary warehouse space for as short a time a possible.
Care must be taken with the drawing up of the lease agreement (See Warehouse Rental Contract sample) with the owner. The following items are basic inclusions and in a lease agreement:

- the cost for the lease;
- the duration of the lease agreement;

- exit clause: the period of notice required for terminating or extending the lease period. Confirmation of the existence of property insurance, covering third-party, fire, water damage, window breakage, etc;
- details of any security arrangements;
- a detailed inventory of any equipment, fixtures and fitting included with the building and detailed description of their condition;
- confirmation of either sole tenancy or details of other tenants;
- information about the ground or floor strength per square metre;
- the weight capacity of any equipment such as forklifts, racks and shelves;
- in situations where neutrality is important, care must be taken to establish the actual owner of the building, which might be different from the 'lessor' of the building e.g. the military, religious groups or government;
- *force majeure;*
- indemnity; and

- insurance.

Conclusion

The warehouse is a key component of the supply chain in emergencies. It buffers uncertainties and breakdowns that may occur in the supply chain. When properly managed and appropriately stocked a warehouse provides a consistent supply of material when it is needed.

References

Catholic Relief Services
Care International
IFRC
ICRC Logistics Field Manual:
Fritz Institute Certificate in Humanitarian Logistics Module Warehousing & Inventory Management
WFP Emergency Field Logistics Manual
World Vision International Food Programming
WFP Warehouse Manual

Additional Information

- *Fritz Institute Certificate in Humanitarian Logistics Warehousing and Inventory Module*
- *ICRC Logistics Field Manual – Chapter 6 Warehouse Management pp 285-362*
- *UNICEF Emergency Field Handbook p 380*
- *CILT (UK) Certificate – Distance Learning Materials – Warehousing*
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Fleet Management

Introduction

Fleet management is the function that oversees, coordinates and facilitates various transport and transport related activities. For the purpose of this document it will cover vehicles involved in the movement of goods; the management of light vehicle fleets used in the transportation of people and light cargo; possibly motorbikes and other equipment such as generators and warehouse handling equipment. Fleet management underpins and supports transport related activities through the management of the assets that are used.

Effective fleet management aims at reducing and minimizing overall costs through maximum, cost effective utilization of resources such as vehicles, fuel, spare parts, etc.

The administration and financial management of fleet is very organisational specific. It largely depends on donor requirements and organisational policies. At a glance, some vehicles are restricted to specific projects, others are utilised in pools to serve all projects, some are strictly organisational driver driven and others self-staff driven and coordinated in pools based on administration policies related to pooling. The custodian of the fleet management function is also very much dependant on organizational policies and structures.

Policy

A vehicle policy will provide specific guidelines for the management and use of vehicles and other mobile assets. Policies are designed to facilitate and encourage accountability, monitoring of usage and costs, provide internal control and to serve as a management tool for better decision

A basic vehicle policy would have the following inclusions amongst others:

- introduction
- purpose
- scope
- objectives
- planning, approval and budget process
- procurement
- approved types for vehicles
- ordering of vehicles process
- assignment of vehicles
- personal use of vehicles by staff

- management of vehicles:
  - control of fuel, maintenance/repairs of vehicles
  - vehicle insurance scheme
  - vehicle replacement

    - sale of vehicles
- guidelines for drivers:
    - assignment of Motorcycles
    - security
    - environment
    - reports
    - revisions
- conclusion

In an emergency situation, and especially in a rapid onset one, the Logistician may seek management authorisation to activate approved emergency processes and procedures. These provide guidance on the use of vehicles. They focus more on the operational aspects. Such a policy could include the following:

- purpose
- objectives
- assignment of Vehicles
- personal use of vehicles by staff

- management of vehicles:
    - control of fuel

    - maintenance/repairs of vehicles
    - vehicle insurance scheme
    - vehicle replacement
- guidelines for drivers:
    - assignment of motorcycles
    - security
    - reports
    - revisions
- conclusion

Aspects of Fleet Management

- Identifying needs
- Acquisition Process
- Insurance
- Vehicle leasing (Internal & external)
- Vehicle Management
    - Fleet management systems
    - Vehicle maintenance and up-keep
- Vehicle usage
    - Vehicle disposal
- Health, Safety & Security
    - Complying with Legislature and security requirements

- Drivers

- Identifying needs

Identification of fleet needs is dependent on the nature of emergency and operations, and the size and area of operation - urban operations could utilise smaller saloon cars whereas remote field operation may require larger four-wheel drive vehicles for extreme terrain. Vehicle selection criteria are guided by:

- donor criteria applicable to the purchase;
- uniformity of fleet;
- the appropriate vehicle type for local fuel availability;
- the purpose of the vehicle (cargo or passenger);
- the terrain in which the vehicle will operate;
- global acquisition cost;
- availability of local dealers;
- local availability of spare parts for the intended vehicle;
- warranties; and
- local availability of competent mechanics.

Depending on the level of emergency the criteria may vary.

- Acquisition Process

The general criteria for selection of a vehicle would be in conformity with the standard recommended vehicles.

- The standard tender process is adopted for vehicles, as for all other goods and services, bulk items and items bought on a regular basis. In some cases, the process may result in outsourcing of some aspects of the vehicle management or leasing of vehicles (See Procurement topic).
- For small daily purchases such as spark plugs, filters etc, petty cash/float may be used by the fleet manager.

- Insurance

Careful consideration should be given to the form of insurance selected for the vehicles belonging to the organisation. The minimum requirements of the law must always be complied with; this is usually at least third party cover.

To ensure compliance with the vehicle insurance requirements, all personnel using operation vehicles under the responsibility of the organisation must be fully conversant with accident and incident reporting procedures for vehicles and personal injury.

Personnel requirements: the insurance cover for personnel will depend on the type of policy the organisation takes to cover its vehicles: third party, third party fire and theft, comprehensive or liability insurance.

Rent or outsource: insurance coverage for leased or outsourced vehicles will be dependent upon what the organisation negotiates with the service provider. The organisation will either adopt the service providers insurance as-is or adopt it with amendments. An alternative is to completely outsource the fleet management, but again the type of insurance will be dependent upon what is negotiated with the service provider.

- Vehicle leasing (internal and external)

“A vehicle or asset lease is a contract by which one party lets vehicles or assets to another party for a specified period of time”.
Or
“A lease is a written agreement by which one party agrees to let another party have the use of specified assets for a period of time for a fixed amount of money”.

In an external leasing option, the ownership could:

- remain with the leasing company or entity, but the rights for use are passed on to the lessee for the period of the lease;
- in other cases, at the expiry of the lease, the ownership is transferred to the lessee; and
- the ownership remains with the lessee, but management of some aspects such as maintenance, could remain with the leasing company depending on negotiations.

However Internal leasing is different. The organisation itself owns the vehicles which are centrally managed and issued to programs on a cost recovery basis. Organisations therefore budget for leasing costs only.

Features of an external leasing agreement:

- Lease agreement is drawn up between (ORGANISATION XYZ) and the leasing company clearly specifying the terms of agreement.
- In some cases the lessee may pay a monthly bill irrespective of mileage covered or a fixed amount with additional costs per kilometre outside of a specified range.
- Depending on nature of agreement the lessor may be responsible for:
  - repair and maintenance at agreed intervals;
  - insurance;
  - in some cases the vehicle may come with a driver.
- The lessee is responsible for:
  - provision of competent drivers;
  - monthly payment; and
  - managing routing of vehicle.
- The lessee’s drivers will be responsible for good driving.

The contents of the agreement will depend largely on the negotiating power of the lessee.

Advantages of leasing

- Routine repair or maintenance costs are built into leasing costs.
- No overheads in garage set-up and maintenance.
- No high initial purchase items in lessee's books.
- The lessor bears most of the risk.

  The organisation is able to focus on core business.

Disadvantages of leasing

- The organisation losses control of some aspects of its fleet management.
- Discontinuation of services by the service provider can cause huge disruptions in the day-to-day operations.
- If the leasing contract is cancelled for any reason, the organisation may have to make heavy investments in vehicle purchases or temporary hire to ensure business continuity.
- The organisation would not be able to build up any institutional capacity in fleet management.

Outsourcing

The nature of the contract is dependent on the ownership status which could be:

- an external company is contracted to supply and manage the vehicles;
- an external company supplies the vehicles but the management remains with the organisation; and
- the vehicles are owned by the organisation and an external company undertakes the management of the fleet.

The preferred options are dependent on the organisations approved procurement or sourcing policies and operational needs. Contracting, sourcing and leasing are done in strict adherence with the organisations approved procurement policy. (See Agreement for leased transport fleet sample and refer also to the Procurement section)

In emergency situations outsourcing and external leasing are common practices. In a rapid on-set emergency, it takes time to ship-in or purchase vehicles for use in the response. Organisations are sometimes left with the option of outsourcing or leasing vehicles or trucks from the local market. In the initial days of the emergency, this can prove to be an expensive option. In emergency situations, there are usually very many organisations and very few assets. The high demand may cause price increases.

- Vehicle Management

The location of the vehicle management function within organizations' structures varies from organisation to organisation. The management may be located within administration, transport function or have an independent fleet manager. For the purpose of the Logistics Operations Guide the manager will be referred to as the fleet manager (FM).

Vehicles are expensive but critical to an organisations' operation. They facilitate the movement of personnel and the delivery of relief supplies to beneficiaries. Vehicle management is also one of the aspects of supply management that can be easily abused if not properly managed. If properly managed this aspect would ensure:

- availability of vehicles as and when required;
- cost efficiency;
- programme or response continuity;
- staff safety;
- safety on the roads;
- vehicle safety;
- vehicle security; and
- performance management.

To achieve the above, some of the measures taken by the FM are:

- every vehicle carries a logbook;
- logbooks are checked on a weekly basis;
- vehicles are logged out and signed for before every trip. A vehicle allocation chart is recommended;
- the driver records all fuel and maintenance costs in the log book or fuel request and purchase voucher, indicating the reading on the odometer at the time of the expense;
- fuel can be purchased from a central petrol station and a receipt issued. Where there is no appointed petrol station, the vehicle fuel request form is completed and approved before funds are released for fuelling. Should the driver have to purchase fuel from their own funds or petty cash, the amount spent on the purchase will be reimbursed;
- all vehicle keys are surrendered at the end of the day;
- drivers adhere to the carrying capacity as provided by the traffic law;
- no unauthorized staff member is allowed to drive (ORGANISATION XYZ) vehicles. Vehicles will be assigned at the discretion of the approving officer; and
- all new staff (those who have a driving license but have not driven for a specified period), will not be allowed to drive the organisation's vehicles unless accompanied by a qualified driver or have been re-tested by the registered automobile association and authorized to drive.

Fleet management systems

In recent times, to address problems in fleet management and the ever expanding need to monitor usage of vehicles, commercial organisations have designed automated control systems and other approaches to vehicle management. Simple management systems can be designed in-house for internal use to provide a good analysis of the vehicles and driver performance.

Vehicle management systems are structured in a way that enables the capturing of information on various aspects of fleet usage, maintenance and operations. For example:

- distances travelled;
- destinations reached;
- distance travelled by vehicle showing official and private mileage;
- fuel consumption;
- repair and maintenance per vehicle;
- rate of consumption of spare parts; and
- servicing planned and completed.

The reports can be produced on a weekly, monthly or bi-monthly basis, depending on the needs of the organisation. Weekly reports may comprise a summary weekly refuelling by vehicle – which may highlight any exceptions to targets set per vehicle, whereas monthly reports may comprise:

- summary refuelling by vehicle and average fuel consumption;
- summary mileage per vehicle;
- repairs or maintenance; and
- any accidents.

Vehicle maintenance and up-keep

Maintenance
Vehicles are regularly maintained for optimum performance, and kept in good repair. In emergency situations the Logistician is sometimes tasked with the responsibility of managing the vehicle fleet. To streamline vehicle management the FM should put in place a simple process. Such a process could entail the following:

Maintenance Options
There are three main options;

1. "In house maintenance" – performed using the facilities and staff of the organisation.
2. "Outsourced maintenance" – under taken by an outside contractor.
3. "Contract hire" - undertaken by an outside contractor as part of a vehicle operating system.

It will be necessary to review the operational requirements and match the most suitable form of maintenance to the individual operation.

Whichever mix is selected, it must be preventative and must be under the control of a competent manager; if it is not, the condition of the vehicles may quickly decline and running costs may increase.

Maintenance Planning

Whichever maintenance options is followed, vehicle maintenance schedules must be drawn up together with, and published by the FM as part of the vehicle planning.
All members of the management team must make a commitment to respecting the scheduled dates for maintenance.
A master vehicle inspection and servicing schedule should be drawn up for one year – a wall chart is recommended. This chart can also be used to show road tax renewal, annual inspection dates, etc.
Vehicle servicing is a compromise between inadequate attention, resulting in progressive deterioration in condition and the ensuing serious consequences, and too much attention, which is costly and unnecessary.
The person responsible for the condition of the vehicles must decide the scope of the servicing work required and how often this should be carried out; taking into account the manufacturer's guidelines and kilometres travelled and in which type of environment the vehicle has been used.

Preventative maintenance

This is done on a ongoing basis. This type of maintenance addresses the basic things that could cause a problem in vehicles if they are not properly maintained. The Logistician or FM develops an inspection check-list to be used by all drivers as a guide.
Each day, the first driver to use a vehicle will inspect the vehicle using the check-list.

Routine maintenance

This type of maintenance is done on a monthly basis. It may cover the following:

- the vehicle supervisor should periodically organise a test drive each vehicle and report on its condition and also ensure that normal/regular service has been done for all vehicles;
- tyres: any abnormal wearing should be reported to the FM; and
- cleaning of the engine at least once a month.

In emergency situations, in the absence of local facilities, the organisation would have to undertake its own maintenance and ensure that:

- an experienced mechanic is hired;
- a secure workshop area is identified or set up;
- the necessary tool and equipment are available;
- there is continuous performance monitoring and a system for measuring & monitoring:
  - fleet performance;
  - costs and performance.

Selection of Garage

Based on the organization's needs, the criteria for selection of the right garage is set with the input of the Logistics officer and the FM, keeping in mind the organisations approved procurement procedures. For example the minimum requirements may include:

- number of qualified technical staff and details of qualifications;

- list of minimum equipment;

- services offered;
- accessibility/location;
- credit facilities;
- satisfactory References;
- financial stability;
- repair/service costs;
- spare parts available;

Basic spare parts in a workshop

Should the organisation decide to manage its vehicle maintenance in-house, certain fast moving spares are recommended for stocking. This reduces vehicle down-time.
The number of vehicles owned by the organisation will determine the purchase of these parts and equipment.

Maintenance Documentation

- Vehicle maintenance summary: whoever maintains the vehicles must make a detailed written servicing record report, listing the work done, parts and fluids used and costs incurred on each job. The FM must keep this on the individual vehicle file.
- Workshop job cards: when the written order is received, the workshop raises a workshop 'job card' for each vehicle entering for inspection, service or defect rectification. Work should not be carried out without a job card; each card should include the following information:
  - details of all work required to be carried out;
  - actual work carried out;
  - name of staff and hours worked;
  - details of spare parts and materials used; and

  - space for the cost of the work.

Once all relevant information has been taken from the job cards they should then be filed with the vehicle files.

- Vehicle Files and documentation: general vehicle correspondence files should be maintained for each vehicle. This file should contain the following documents to facilitate tracking of expenditure and maintenance:
  - copies of purchase request;
  - copy of internal service request;

  - copy of local purchase order;
  - invoice;
  - all important documentations (bill of lading, etc);

- insurance papers;
- copies of all repair bills;
- job order;
- accident report; and
- fuel log-in sheets.

- Vehicle usage

This aspect of vehicle management is very sensitive and also the most abused. It is therefore necessary to have a clearly defined policy regarding vehicle usage and staff benefits. Understandably, most organisations do not have the capacity to assign a driver for each vehicle that they own. Under these circumstances, staff may be authorised to self drive, after testing. The vehicles would in most cases be pooled and rotated based on needs, except where a specific donor requirement conditions ties a vehicle to a specific project. For practical reasons, light vehicles are utilised for office operations and within urban settings and heavy vehicles for field based operations.

See Vehicle Usage Policy for some basic inclusions and Vehicle Related Documents for more details.

Vehicle disposal

Running old vehicles may lead to high costs of maintenance and uneconomical fuel consumption. To avoid this, organisations should have approved and clearly stipulated policies and procedures on how and when to replace and dispose of vehicles/assets (See sample on Disposal of Assets policy). The need to dispose may arise due to any of the following reasons:

- as a result of extensive unrepairable damage, or cost-prohibitive repairs;
- when the vehicle attains the stipulated mileage or years for disposal;
- when the vehicle is no longer economically sustainable;
- when the vehicle is no-longer required; and
- when programs downscale or shut down.

The disposal procedure applied for vehicles will apply for all other assets such as:

- generators
- boats/canoes/barges
- motorcycles
- fork lift trucks

- Health, Safety & Security

Vehicle safety is one of the key roles of the FM. It leads to staff safety and enhances road safety. WHO estimates 1.2 million people died and 50 million were injured in road crashes in 2002.

Vehicle safety hints.

Complying with legislature and security requirements

Legislature and security requirements are country specific and may relate to:

- driving authorisation documents;
- type of vehicle allowed;
- size of vehicles;
- communication equipments fitted into vehicles;
- duties and taxes;
- return of vehicles - some countries do not allow the re-export of vehicles;
- safety requirements; and
- vehicle jurisdiction - some vehicle cannot operate outside a specified area.

The key to successful observance of health and safety is the development of an organisational culture of awareness of, and compliance with health and safety issues. To ensure that this is possible the Health & Safety policy document must be practical and be incorporated within day to day tasks. Some organisations manage their own routine minor repairs and service workshops. Some basic health and safety measures for workshops would be:

- clear environments around work stations;
- completed risk assessments and action taken where risks are highlighted, i.e. warning tape on raised flooring;
- inductions;
- practice drills for fire evacuation; and
- availability of and mandatory use of safety equipment such a goggles, boots, gloves, etc.

Health & Safety Specifics in Fleet Management

There are five areas specific to transport management where local health and safety procedures will probably need to be agreed and documented by the fleet technical staff:

1. Fuel stores
2. Safe operation of vehicles
3. Accident and incident procedures for vehicles
4. Vehicle workshops

5. Security of vehicle assets

Drivers

As part of fleet management it is necessary to divide drivers into categories based on skills and competence. Constant evaluation of their skills, regular training and refresher courses will improve driver and vehicle performance, reduce number of accidents and reduce maintenance costs.
Each organization has the responsibility of identifying relevant training and courses available. These could be included in organizational capacity building programs for drivers.

Conclusion

Fleet management in organisations is expensive. Vehicles are valuable assets and critical for business continuity. They therefore require adequate attention.

References

Oxfam (pg 91-105)
MC (pg 73-95)
Fritz Institute (pg 1-75)
ICRC (pg 431-558)
World Vision International Policies
TransAid (pg 1-14)

Additional information on Asset Management:
IMC (pg 128-156)
Oxfam (pg 106-113)

Distribution

Introduction

The distribution chain or channel represents the movement of a product or service from the point of purchase to the time it is handed over to the final user/consumer. This may entail a chain of intermediaries passing the product down the chain within the organisation before it finally reaches the consumer or end-user. Or it could be direct from the point of purchase to the end user. Each of the elements in these chains will have its own specific needs, which the producer must take into account, along with those of the all-important end user. Reliability of the distribution chain is critical.
In the humanitarian context, distribution is viewed from three perspectives:

- movement of goods from the point of purchase or transfer of ownership (vendor to humanitarian organisation) to the point of final use. This is common in sudden on-set emergencies where goods are often taken straight to end user. The internal distribution occurs at the point the commodity or goods are being handed over to the beneficiary;

- movement of goods from one location within the organisation to another location within the same organisation. For example, from hub to hub, or hub to end user point; this is common when resources are being mobilised to strategic locations for onward movement to point of use as in the case of preparedness for an anticipated emergency; or;
- the point at which the goods are handed over by the organisation to beneficiaries or partner organisation. For example, WFP food distribution direct to beneficiaries or partner agency conducting the distribution exercise.

Some of the distribution activities embrace, materials handling, storage and warehousing, packaging, transportation etc. Distribution is sometimes referred to as the “final mile” and is a critical part of the supply chain. This is where the risk of loss and insecurity tends to be high, where communication is the most sporadic, where monitoring is most difficult, where costs require close monitoring, and where the organisation sometimes has less direct control and but can integrate with the programme the most closely. This topic is intended to help develop an understanding of distribution and provides information that embraces all three perspectives above.

Distribution Plan

The distribution plan is normally part of general supply planning, but in this case the assumption is that the organisation that you represent will be responsible for major portions of the distribution network. With this in mind, care needs to be exercised in formulating the distribution plan. In these guidelines an extended-delivery point (EDP) refers to the point at which your organisation actually physically hands over supplies to a counterpart (an NGO, an individual, or even the beneficiaries themselves).
The final over-all distribution plan should be easy to read and focused around a distribution table or spreadsheet representing the needs. A successful delivery function can only exist with collaborative planning across functions and entities.
There are three levels of a distribution plan.

- The country plan will show the total for the country. The country may be divided into product destinations (whether provincial, regional or your organisation’s office responsible areas).
- The secondary level may take into consideration one province and split it into various EDP’s that the organisation will hand over to.
- At the tertiary level the plan is drawn up by the counterpart, the entity on the ground facilitating distribution. This lists the names of the beneficiaries, or schools, or health posts that the items are destined for. This list reconciles the planned quantities with real beneficiaries, so that for each province, there is a plan one level down.

Elements of Distribution & Cost Implications

Each step adds to the cost, and all add to total overhead.

Characteristics of direct deliveries from a single point

- Reduces number of storage facilities.
- All deliveries to individual EDP’s are managed from a single point. But can be overwhelming if there are too many EDPs.
- Only one transport contract needed from the main warehousing point.

- High risk of less than truck loads going, especially when delivering to isolated areas.
- Higher risk of errors when loading/ unloading, e.g. items ending up in the wrong place.
- Bulk goods need to be broken down into distribution-ready packages at the main warehouse. Breaking bulk earlier means that overall transport costs will increase exponentially with the number of EDP’s directly served. This might be offset by the saving in warehouse structure.

This model is recommended for smaller distribution operations, where the number of EDP’s is easy to handle, and where the geographical area is not large.

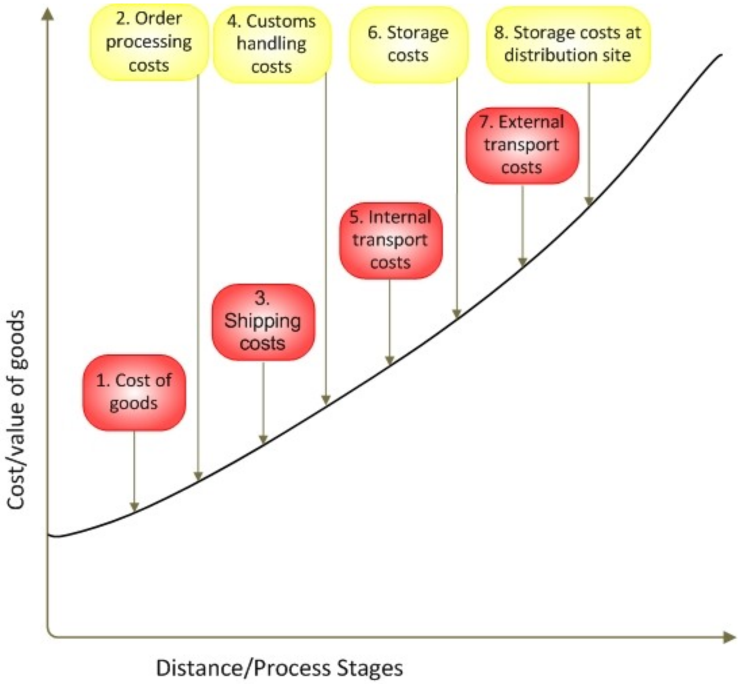

Diagram 1: Distribution and Cost Implications, adapted from UNICEF In-Country Logistics Guide 2006

To download the diagram, 'right click' on it and then choose 'Save Image As' from the menu OR go to Annexes.

Distribution, in addition to representing the highest value of the goods, also represents the most vulnerable point. This vulnerability may be due to lack of security, a difficult environment and lack of adequate monitoring. It is the most likely area for supplies to be diverted from the end user, and the most distant area from your organisation’s oversight.
A good distribution plan is therefore not simply a document that indicates what has to go where and when, but a key document that allocates supplies, outlines the responsibility points for supplies, and serves as the main justification for related expenditure, e.g. transport, warehousing. One of the main functions of distribution is to ensure economic operations for goods to reach the end point at the right price.

See the Logistics Preparedness and Response Check list in Annexes.

Network Design

Direct Delivery

The Characteristics of supplier distribution model

- Key Elements of Distribution
- At what point should handover occur?

- Final design of distribution plan
- End user distribution
- What happens and how does a humanitarian organisation need to intervene in order to assist?
- Kitting & packaging
- Characteristics of hub-and-spoke

When goods are delivered to a secondary point from a central point it is referred to as direct drop. Very often, goods need to be dropped by the same truck in different or multiple locations. The multiple locations are lumped together in clusters. This can be illustrated thus:

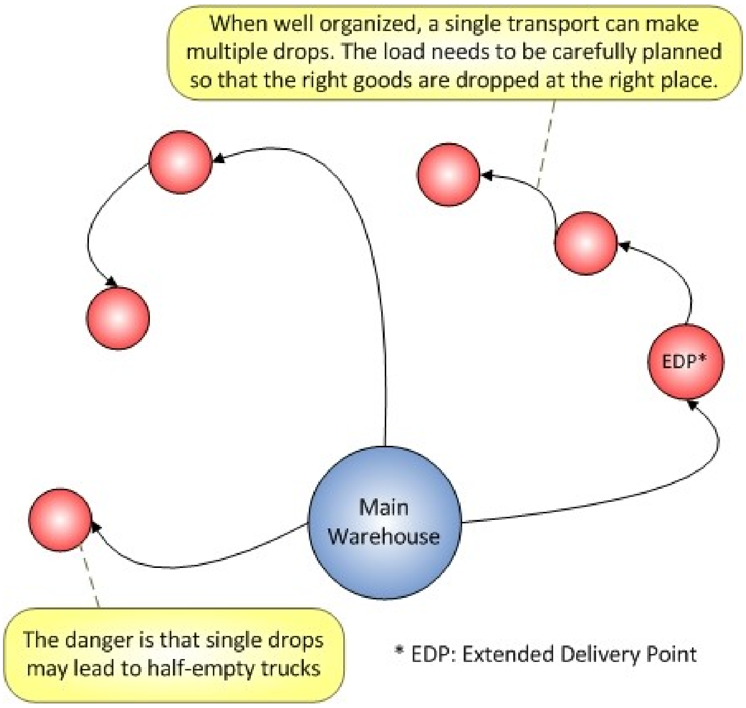

Diagram 2 - Direct Delivery, adapted from UNICEF In-Country Logistics Guide 2006

To download the diagram, 'right click' on it and then choose 'Save Image As' from the menu OR go to Annexes or Library.

Distribution Centre Network

This is sometimes referred to as the ‘Hub-and-Spoke’ model. The warehouses are in hubs, transport from the warehouses is represented by the spokes. At the end of each spoke is the EDP. This can be illustrated as follows:

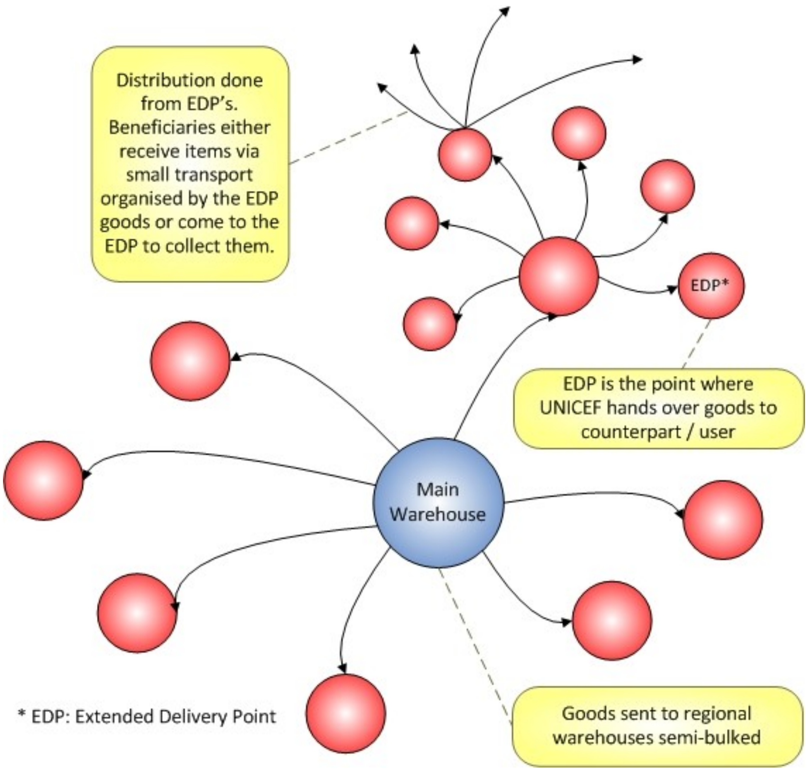

Diagram 3 - Distribution Centre Network, adapted from UNICEF In-Country Logistics Guide 2006.

To download the diagram, 'right click' on it and then choose 'Save Image As' from the menu OR go to Annexes.

Supplier Milk Run

The Supplier Milk Run sometimes referred to as the direct delivery from supplier's model. In this process the EDP's receive supplies directly from suppliers.

This is pictures below:

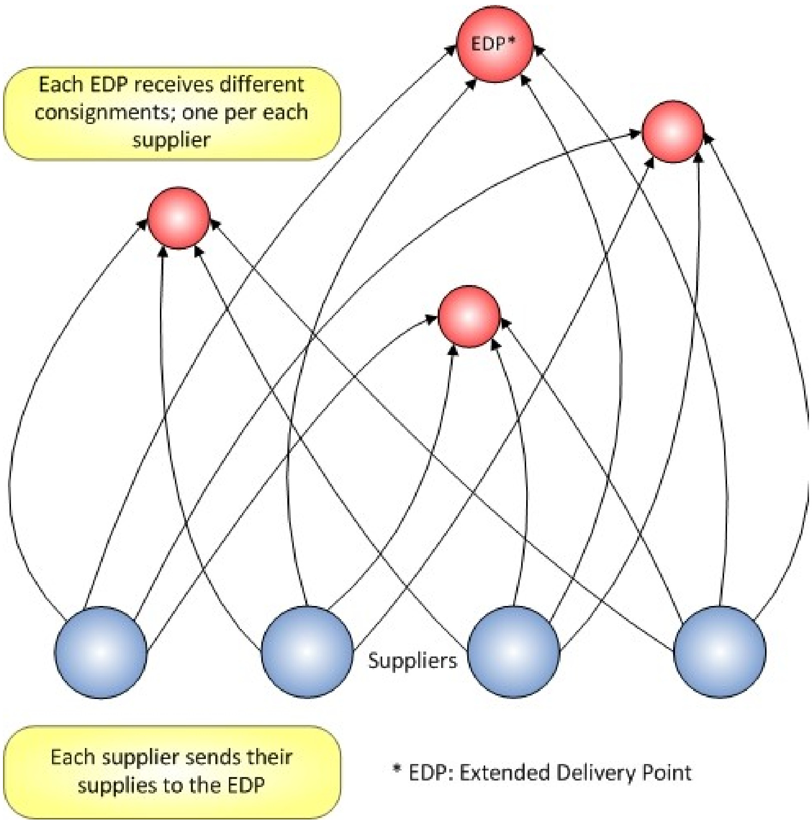

Diagram 4: The Supplier Milk Run, adapted from UNICEF In-Country Logistics Guide 2006.

To download the diagram, 'right click' on it and then choose 'Save Image As' from the menu OR go to Annexes.

Choosing a Network Configuration

Site Selection

The number and location of distribution sites must be a compromise between the limitations and costs of the transport system and minimizing the distance which beneficiaries need to travel. Distributions should be carried out in established community centres (at local markets or meeting places), so that people either live close by, or are in the habit of travelling to that place. Consider the distance that people will have to travel to distribution points, and the routes they need to take.
When choosing specific locations, consider the following factors:

- provision of shade, water and latrines for beneficiaries while queuing;
- local transport and road system – whether access for vehicles carrying goods is likely to be blocked by beneficiaries travelling to the distribution point;
- secure location for the beneficiaries;

- evacuation route for staff, in case of security problems;
- proximity to military or security establishments, or other sensitive areas; and

- organizing the distribution site from a logisticians perspective:

- ensure that the quantity of goods available on the day is enough to supply the needs of all those eligible. A perceived shortage could cause tension or a disturbance. Work with programs according to quantities in their distribution plans;
- the distribution must be carried out in an efficient and organized manner. Try to minimize the amount of time which beneficiaries will need to spend queuing – consider what the cost of that time will be to the beneficiaries;
- a distribution site should be divided into a registration area, where beneficiaries report and are checked against names on a list. This is for ease of accounting for supplies issued out;
- the actual distribution zone should be adjacent to the registration site but with controlled access, so that only registered people line up for distribution. This may well require a substantial crowd control element as well as barriers (make use of ropes, trucks, available walls, insides of buildings);
- where possible, have the labour force that unloaded the trucks to double as security, to prevent unauthorized access and possible swarming and looting of the goods. An incentive may need to be given for this work;
- spend time at the beginning organizing your site;and
- spend time days in advance to streamline and verify your beneficiary list. Ensure that enquiries are directed at registration staff, not at distributors. Tension will occur when there are people not on the list, or if the list is done poorly, or when there is a delay in the smooth flow of people through the distribution site.

Advance work minimizes this tension and is the cornerstone of successful distribution. It is amateur distribution that results in the TV images of people rushing the open backs of trucks and being thrown goods.

Information on direct distribution adapted from *Oxfam guidelines*.

Distribution Staff

The relationship between beneficiaries and distribution staff is a potential source of tension, corruption and abuse. Staff should be selected objectively and should be clear about the standards expected of them. Distribution staff must be subject to stringent monitoring. They should sign for receipt of the goods to be distributed, and should be held accountable for any losses. If tokens are being used, then the quantity of tokens received by staff should be monitored to check that it corresponds to the amount of food distributed. The token system is a distribution method where beneficiaries in a list are registered, the name crossed off, and a token issued. The goods are exchanged for this token.
Staff may find themselves in a position which could give them the potential for sexual exploitation of beneficiaries. Any sexual relationship between a member staff and a member of the beneficiary population is considered by the UN to be an abuse of power.
Make sure that all staff understands clearly that sexual coercion or exploitation will result in immediate dismissal.

Quality Control Monitoring

There are three major elements of monitoring, in terms of distribution and providing added value in terms of programme success. These are:

Supply tracking

There are a number of supply tracking programmes in use across the humanitarian community, along with the paper-based system included in this guide here, is an essential element for:

- donor reporting;
- programme management, enabling programme staff to check progress of supplies;
- logistics management, enabling logistics staff to manage the supply chain and coordinate activities more effectively; and
- accountability, a system for leaving an audit trail.

Performance measurement

Both in terms of logistics performance against logistics targets, and as a measure of logistics contribution to programme success, the basic performance measures for logistics are:

- speed or timeliness measures
- cost measures
- compliance measures
- quality measures

Measures require clear information, which should not be too difficult to acquire. Clear responsibilities for obtaining and holding data must be assigned and the logistics system must be designed in such a way as to enable data to be created. Measures should reflect the strategy of the logistics organization, and the goals of the programme. Some examples of measures are given below.

- reliability of delivery (items delivered against items committed to be delivered);
- inventory accuracy (number of errors in records as a percentage of total);
- vehicle utilization (number of full loads as a percentage of total loads);
- logistics cost (as a percentage of total value of program materials (PGMs) handled by logistics); and
- quality of delivery (loads with loss/damage as a percentage of total loads delivered).

Different measures target activities that have been assigned the most importance by both logistics and programme sections. If cost is the overriding factor due to budget cuts, focus on cost. If quality of delivery has become the biggest issue, focus on quality measures. Be prepared to review your measure annually, and to readjust them to focus on the changing strategic priorities of the programme.

End user monitoring

Aiming to improve programme/supply planning for the next distribution cycle by providing feedback on quality, efficiency and impact of supply component of programmes. This is done by doing the following:

- assess quality, effectiveness and appropriateness of supplies;

- assess timeliness of delivery;
- assess whether and how supplies are being used;
- assess durability and suitability of the supplies;
- determine the impact of a product on their users;
- determine whether an input should continue, be amended or stopped; and

- check logistics chain (breaks, lead time).

Most of these activities are programme follow-up responsibilities. However, logistics staff can assist in providing up-to-date distribution information, and submitting relevant performance measures (such as reporting supplies easily damaged during transit). Carefully ascertaining product suitability and the impact on the product users requires choosing a number of strategic products and then making investigations within the beneficiary community, while ensuring that a wide sample coverage is used. It is a good idea to focus on products that have a high value, are appearing in markets on a regular basis, or are new products (or new suppliers providing a similar product). These evaluations should be designed and executed with programme sections, but can be initiated and driven by supply/logistics staff.

Reference

UNICEF In-Country Logistics Guide2006

Monitoring and Evaluation

Introduction

The Logistics function in humanitarian organisations is made up of people, processes and systems working together to support efficient and effective delivery of services. Controls are normally put in place to monitor weaknesses, poor designs in projects and improper implementation of programs. Based on continuous monitoring, these weaknesses or shortfalls against targets or objectives set can be corrected or revised in order to continually improve performance, thus reducing the risk of exposure and strengthening the response to needs.

Monitoring and evaluation are integral parts of management and provide a link between planning and implementation. While monitoring focuses on the activities and outputs, evaluation focuses on the outcome and goals.

Monitoring is initiated at the beginning of a programme, project or emergency response and built into the design, assessment and planning phases of the logistics aspect. It focuses on inputs and outputs and basically tracks and assesses implementation of the logistics aspect of the programme, project or emergency response. It is the continuous process of gathering logistics and programme information to measure against pre-set key performance indicators (KPI's), benchmarks or previously base-lined indicators that are aligned to the goals and objectives of the program.

Evaluation, like monitoring, is a continuous process. The evaluation of the quality of the output should be undertaken in such a way that shortcomings can be identified and corrected. Evaluation should also feed into the planning process continuously so that the planned method of the intervention can be modified to take into account the realities and conditions on the ground. Evaluation provides a tool for management to ensure that focus is maintained.

Definition

For logisticians, monitoring and evaluation may be defined as follows:

Monitoring: to review on a continuous basis the degree to which the logistics activity is completed and if targets are being met. This allows corrective actions to be taken.

Evaluation: to analyse progress towards meeting established objectives and goals. It is done on an ad hoc, monthly, quarterly or yearly basis. Evaluation provides feedback on whether plans have been met and the reasons for success or failure. It should also provide direction for future plans.

Together monitoring and evaluation provide the basis for performance management. Also key to performance management is aligning performance metrics to the goals and objectives of the program.

Without alignment, monitoring and evaluation is ineffective as the direction in which the program is heading is unknown and therefore M&E is unfocused and potentially disruptive to the program.

Without alignment you do not know what to monitor or how to evaluate it.

Objectives

Monitoring and evaluation has several purposes:

- to provide information to users on the service level they can expect;
- make an objective evaluation of services and activities;
- identify problems in the supply chain;
- determine what measures are needed for improving services;
- understand the need to increase or decrease resources;
- objective measurement for calculating reorder levels;
- define parameters for the periodic review system calculations;
- evaluate performance of individual staff members;
- motivate logisticians.

Quantitative and qualitative measures can be monitored for the entire supply chain, from the manufacturer to the beneficiary, as well as for individual parts of the supply chain. Every link in the supply chain should be seen as a service receiver (from suppliers) as well as a service provider (to users). The management of stocks and the quality of services received will affect the quality of services provided. It is important to make this distinction when there is a requirement to improve service provided to the final user or consumer.

Customer

For the purpose of this document, a customer is the final user or the identified final beneficiary of the logistics service. There are two sets of customers: internal and external customers. The internal customer is the user or beneficiary department within the same organisation and the external customer are the beneficiaries in the communities that we serve.

The Monitoring and Evaluation of Services

There are two main points to consider when monitoring and evaluating order management:

- the services provided to customers (quality of service to customers, customer perception of service);
- the services received from suppliers (including upstream logistics centres).

Services provided to customers

This point can be looked at from the perspective of the order management team providing services to customers/users/beneficiaries, as well as the customer's perspective of the effectiveness of services received from the Order Management team. The quality of service provided to customers needs to be measured and monitored as a basis for management and planning. The most used indicator in this regard is the percentage of orders delivered in full, on time and error free (DIFOT).

On-time	Orders received on or before the date requested
In-full	Orders are complete in quantity
Error-free	Orders are complete with proper documentation, labelling, and without damage to items or packaging

The imperative for getting it right

While suitable performance measures provide the foundation for informed decision-making, improper performance measures can distort the conclusions drawn and badly impact efficiency by effectively disguising critical issues and warning signs. 'Good' performance measures have several distinguishing characteristics:

- they are directly related to objectives and strategies;
- they must be understandable but not under-determining;
- they must be meaningful;
- they vary between locations and customer segments; and
- they provide fast feedback.

Additional key indicators:

- information available for customers (items, lead times, order status, etc.);
- response time (order acknowledgement, queries, etc.);
- number of claims and items returned;
- number of stock-outs;
- number of back-ordered lines; and
- average backorder time.

Customer perception of service

Logisticians have priorities in their day-to-day work, however it is important to keep in mind the objective: to provide excellent service to the customer, with consideration to their objectives.

An important aspect of measuring the customer's view of the services provided is through a customer satisfaction survey. This is done in the form of a questionnaire. Indicators that are quantitative and objective monitor "hard facts" such as inventory availability and lead times. The purpose of requesting feedback from customers is to gather subjective information that cannot be measured. Customers are asked to rate the importance and quality of services received to determine their perception of logistics services (qualitative analysis).

The Customer Satisfaction Survey Questionnaire

A useful tool that can be used by the logistician is the Customer Satisfaction Survey Questionnaire. It can be used to:

- assess satisfaction of customers with logistics services;
- determine services which are of the greatest importance to the customer;
- identify services which are not considered necessary by customers and may potentially waste logistics resources which can be more useful elsewhere;
- detect changes in the service needs of customers, programs, or overall situation changes;
- as a monitoring tool after implementing measures to improve customer service to evaluate their success;
- debrief all staff, and headquarters, on the performance of the logistics department, and
- to be effective, this survey should be carried out on a regular basis.

Services received from suppliers (including upstream logistics centres)

The same measures can be used as for the "service provided". The main difference being that the Logistician becomes a customer of logistics services.
The number of "stock on order" items and "stock-outs" are crucial indicators as they relate to issues that have an impact on the services provided by order management.
Additional key indicators are:

- order status information (initial acknowledgement, regularity, frequency);
- technical support (product information, quotations, repairs);
- stock availability;
- document quality;
- quality of items;
- quality of packaging (damages during transport);
- treatment of claims (response time).

Delivery Performance

Monitoring Performance

Performance measures provide a management framework, facilitate communication, direct behaviours within the organisation, foster improvement and assess positioning and operational capacity.

There are a great number of indicators for measuring the quality of services along the supply chain. These include time, scope, service and cost. No single indicator allows measuring all aspects of supply chain management. They should be interpreted and used in combination.

Performance of the supply chain should be measured regularly, consistently and systematically rather than waiting until services have deteriorated below acceptable levels. Monitoring should be a key element of running a logistics service.

Actual performance should be compared with the goals and objectives established for the program, which defines the level of service logistics tries to achieve.

Some aspects to monitor in logistics

Supply chain response/lead time

Lead time is the time between placing an order and receiving the goods or service. Delivery too early or too late may also incur unnecessary costs. Delivery too early can mean goods have to be stored until needed and will incur costs whilst being stored in warehouses. Delivery too late can mean the costs of setting up facilities, for example feeding stations and having people ready to distribute goods, is wasted because the goods have not been delivered. It can cause the organisation to incur additional transport costs, for example, aircraft/helicopters have to be used to move the goods more quickly along the next part of the supply chain. In disaster/emergency relief situations, timing of delivery can have a serious impact on the relief operation and on the beneficiaries.

Information on status of orders

The internal performance of the logistics function is dependent on the efficiency and effectiveness of each of the logistics components. For example, one performance indicator for procurement, would be its ability to disseminate information on the number of orders issued. This will enable the warehouse to provision for storage space. Unexpected deliveries can disrupt operations and put the stock at risk of being stolen when left in the open.

Efficiency

The measurement of efficiency is sometimes relative and dependant on what an entity defines as efficiency. In this context, efficiency is the satisfactory delivery of a logistics service that enables the end user to fulfil the intended purpose of the request. A good example is the request for malaria prevention medication ordered to be pre-positioned before a malaria season. A late delivery would mean higher incidents of malaria and an increase in the request for malaria treatment rather than malaria prevention drug.

Total supply chain costs

The total cost concept focuses on reducing the total cost of logistics rather than the cost of each activity. An organisation should monitor the cost reduction across the board and evaluate the impact on each of the logistics components. For example, purchasing in bulk may reduce the cost of the product but at the same time increase the stock holding costs.

Inventory costs

Inventory carrying costs include:

- inventory service costs - insurance and taxes;
- storage space costs - leasing costs or land rates;
- inventory risk costs - these are costs related to pilferage, the risk of goods being kept so long that they become obsolete, the risk of damage, etc; and
- carrying costs - the cost of storing - labour, depreciation and other overheads.

Inventory value

The concept of value has shifted. In recent years the concept of value has become accepted as the difference between the value a customer attributes to a product or service and the cost of acquiring value. Excessive stock holding is not only a risk in emergencies in the event of an evacuation but also not cost effective when millions are tied up in dormant stocks that may not all be utilised within reasonable time, or used at all due to rapidly changing needs. Monitoring and collaborating closely with programs on distribution rates would help in balancing the benefits.

Order management costs

Order management costs include those for issuing and closing orders, the related handling costs, and the associated communications costs. It would be prudent to benchmark these and keep them under close monitoring to ensure that service delivery is cost effective.

Cost of waste

The cost of waste covers the cost of disposing of packaging and damaged or unserviceable equipment. Waste disposal costs have sharply increased due to environmental impacts. This aspect is covered under Reverse Logistics.

Reporting performance

Customers provide feedback on the performance of procurement. This feedback should be both qualitative and quantitative. Qualitative - how they felt about the service they were given and how helpful people in logistics were. Quantitative - is objective and measurable. This can be achieved by setting and agreeing service standards with customers, for example the time it will take for a requisition to be processed. The customer can provide how well this was met.

Information and data can be recorded and kept within logistics. The analysis of the information will provide feedback on performance. It is possible to measure performance in carrying out the logistics process particularly if there are standards set.

For example:

- documents sent to accounts in time;
- goods delivered on the specified date or within the specified period of time;

- number of times a vendor has delivered the correct goods or how many times goods have been rejected; and
- number of requests rejected by procurement due to poor specifications.

In an emergency situation performance monitoring is a very important aspect and should be instantaneous with immediate remedial measures taken. The reporting back should be more structured and targeted to get immediate attention and action taken.

Some of the key indicators would be:

- on time delivery;
- delivery of exact specification requested;
- reliable transport services; and
- delivery of exact quantities requested.

Key Performance Indicators management tools

Key Performance Indicators (KPIs) can be defined as specific metrics used to monitor performance on an ongoing basis.
KPIs can only be useful if the metrics selected are targeted to achieving the organisations logistics objectives. Some examples of KPIs are:

- percentage of Items returned/rejected;
- total dollar value of damaged/lost goods;
- percentage of on-time deliveries;
- inventory levels vs. forecasted need; and
- field distribution performance.

See a sample of Transporter performance table.

Cost and performance

We use the term right cost rather than right price, as the price on its own does not reflect how much particular goods or services will cost the organisation. The aim of logistics should be to look at the total cost of obtaining the goods or services and any ongoing costs of operation or maintenance. What may seem a good initial purchase price may become a poor total cost because the supplier may add extra costs for packing or transporting the goods. For other items, such as vehicles, a good initial purchase price may become a poor total cost with expensive operating or maintenance costs.

What is the right cost for particular goods or services?

This is not an easy question to answer, as there will be a lot of different factors and constraints that will affect the initial purchase price and the total cost. The aim should be to achieve the best value for money given the different factors and constraints. Some aspects to consider:

- actual market price;
- other delivery conditions; and
- source of product and extended distribution costs.

The "best price" will therefore be the most cost effective price that will ensure the goods or services are delivered in time, at the right location, in the right condition, in the right quantity and meets the stakeholders (donors/internal user/beneficiaries/public) service expectations.

Conclusion

Monitoring and evaluation are key cross-cutting components of an effective logistics process. Together they provide the management tools necessary to measure the ability of an organisation to provide the right products or service, at the right place at the right time for the right price against consistent targets set by the organisation. They provide the means to identify problems so that they can be corrected.

Quality Control

Introduction

Quality Control (QC) is an aspect of logistics management that is rarely applied, partially applied or completely ignored. More so in emergencies where speed of delivery over-shadows aspects or activities that would otherwise provide checks and balances in a sector that already has so much at stake.

For the purpose of the LOG, simple aspects of QC are highlighted to provide basic knowledge that can be applied in emergency situations. In an emergency situation, it is not practical to initiate complex, involving quality control processes. Some organisations are likely to already have institutional specific QC processes in place.

Why quality management is important in humanitarian activities and humanitarian logistics:

- the need to demonstrate its ability to consistently provide product/services that meets user, donor and applicable statutory and regulatory requirements;
- the aim to enhance user satisfaction through the effective application of the system, including processes for continual improvement of the system and the assurance of conformity to user and applicable statutory and regulatory requirements; and
- to support the achievement of sustained success by a quality management approach.

These systems assist in ensuring professional and high quality service delivery, leading to improved outcomes/less suffering for beneficiaries.

Definition

Quality Control (QC)

1. The operational techniques and activities that sustain the product or service quality to specified requirements.

2. The use of such techniques and activities.

3. Operations intended for the assessment of the quality of products at any stage of processing or distribution .

4. Part of quality assurance intended to verify that components and systems correspond to predetermined requirements.

Quality Assurance

“Planned and systematic action that is necessary to provide adequate confidence that a product or service will satisfy given requirements for quality.” (*IFRC*)

Quality Improvement:

It can be distinguished from QC in that quality improvement is the purposeful change of a process to improve the reliability of achieving an outcome.

In the humanitarian context it is sometimes defined as:

"the minimum level of performance that fulfils a requirement." (*Concern*)

Or

"…..the compliance with the technical specifications initially elaborated during the needs assessment." (*Action Contre la Faim*)

QC is therefore the process of ensuring that products/services required are received as is prescribed, in a timely, cost effective and efficient manner, through the application of well established systems and procedures. A QC system will therefore also measure whether standard operating procedures are in place, that they operated effectively and were strictly adhered to.

Some terminologies that are commonly used in relation to quality are: performance, compliance, standards, specification and conformity.

Logistics QC (LQC) is by no means a measure of quantitative throughput or output. Nor is it intended to set-up competition between different operating logistics functions, but a mechanism that ensures that needs are satisfactorily met.

Inevitably, at the onset of an emergency, some systems may not function well. Certain operational procedures may be absent. Clearly, LQC has implications for efficiency, cost effectiveness and output. Where all standard logistics procedures are shown to be operating correctly, there is less likelihood of waste or delay. LQC allows the logistics officer to quickly identify areas for immediate attention. The periodic running of LQC will allow the Logistics officer to maintain his/her operation efficiently and to avoid the erosion of standards.

Nature of quality control

QC is cross cutting through the entire logistics function. It enhances efficiency, effectiveness, and differentiation throughout. There are three related areas of focus for value creation:
Goals. Objectives must be set for achieving internal and external user satisfaction. This involves finding out exactly how 'users' perceive the services rendered by the logistics function as a whole.
Responsibilities. Determine and assign responsibility for systems and processes that are necessary for creating and sustaining user satisfaction. In many instances, this responsibility spans traditional functional boundaries and may even require re-engineering of some processes.
Benefits. User needs and expectations must be incorporated into the process of logistics delivery, transforming basic functions into benefits that yield value.
QC, when used in conjunction with monitoring and evaluation, leads to a formalisation of the quality process.

Quality Control Tools

- Check-lists
- Questionnaires
- Inspection procedures. These can be internal or through outsourced companies such as SGS (www.sgs.com), Bureau of Veritas (www.bureauveritas.com), Cotecna (www.cotecna.com), etc. The inspection may be based on:
  - chemical Composition;
  - physical attributes; and
  - standard operating procedures adopted.

Formulation of a QC Process

The evolution of a QC process, is a movement through four distinct phases with notable characteristics:
1. **Quality Control (QC)**. Quality control entails the basic procedural and statistical management of quality:

- defect-free services;
- management-driven.

2. **Quality Assurance (QA).** A greater emphasis on achieving user/user satisfaction through user/user-driven quality characterises. This is the shift from QC to QA:

- 100% satisfied user/user;
- user-driven.

3. **Total Quality Management (TQM)**. All stake holders, i.e. management, suppliers, users/users and employees all aligned and working together towards a common goal and ensuring quality service provision. It would cover monitoring of all aspects of management, staff, users/users satisfaction, systems implementation, adherence to processes and procedures and supplier performance. The above characterise the evolution to TQM.

- Significant gain for all stakeholders.
- Common goals.

4. **User Value.** User value reflects the need to do things that create the best competitive net value for the eser.

Quality Control Cycle

Systems and processes are a part of QC. QC is used in developing systems that ensure that goods and services delivered meet or exceed user expectations. It not only verifies the delivery of good quality but also identifies gaps and failures that need to be addressed.

Diagram 1: Quality Control cycle
To download the diagram, 'right click' on it and then choose 'Save Image As' from the menu or go to the Annexes.

Management system

Management system refers to what the organization does to manage its processes, or activities, so that its products or services meet the objectives it has set itself, such as:

- satisfying the customer's quality requirements;
- complying with regulations, and

- meeting environmental objectives.

Management system standards

Management system standards provide a model to follow in setting up and operating a management system. This model incorporates the features on which experts in the field have reached a consensus as being the international state of the art.

Implementing a Quality Control System

Application in Humanitarian Logistics

- Development of standard procedures and processes to assist in the rapid establishment of logistics.
- These systems assist in ensuring professional and high quality service delivery, leading to improved outcomes/less suffering for beneficiaries.
- Quality control of supplies – ensuring supplies meet specified requirements.
- Working with suppliers to create specifications of items that are easy to make (lower cost, higher quality, quick to produce) and meet user requirements for example, tarps, tents, etc...
- QC tools and techniques in Cold Chain.
- Provide some examples of tools used such as quality checklist mentioned above and tools used to ensure products meet specifications such as the use of inspection agents.

Set the parameters or bench mark

This process is initiated when users place requests for products or services. When submitting a request, the requester of a product has to provide the logistician with the technical specifications.

Note: different standards will apply for different products or services. For products on international markets, international standards define most of the requirements. Within the humanitarian community, there are specific relief standards set for commonly used products. Some common sources are the sphere book, interagency set-ups or organisational specific catalogues.

See Standards in the Annexes for more information.

Importance of the technical specifications:

- the selection of the supplier, through a quotation or tendering process;
- the purchasing contract, the technical specifications are commonly joined as an annex to give the exact description of the product;
- the conformity certificate: a laboratory or inspection company need the technical specifications in order to issue the certificate attesting that the product delivered is complying or not with requirements;
- the delivery inspection: when receiving the supply the storekeeper will verify that the delivery matches with the product requested; and
- products will be accepted only if the QC and the result of the delivery inspection correspond to the technical specifications.

Quality control sheet

When working on the technical specifications, the requester should provide exhaustive information on the services or products required.

For example:

Food

- Smell
- Taste (only for products for human consumption)
- Colour
- Physical characteristics (size of the grains, powder)
- Solubility (if relevant)

Spare parts

- Design
- Part number
- Shape
- Material used/or chemical composition
- Tensity

Fabrics

- Colour
- Weave
- Texture

QC sheets are used to specify areas of focus and in conjunction with tools that measure performance or compliance against set parameters. Questionnaire and check-lists are some of the simple but effective QC tools. They are user friendly and can be used manually or electronically. Below is an example of a simple electronic tool.

Such a tool may be contained in an MS Excel file. The worksheets contain a series of topic-specific questions related to logistics aspects such as, warehousing, fleet, procurement and customs clearances and a graphic representation of the results is generated automatically from answers to questions on preceding pages.

See Quality Control Check Lists.

How to use the questionnaire or check-list worksheets:

Step 1:

Select the appropriate worksheet and answer the questions by clicking in the relevant box (use the mouse or arrow keys to navigate from one box to another); enter any letter (Y, N, X, etc.) in the designated box.

Step 2:

Select only one of the boxes: 'YES', 'NO' or 'PARTIALLY' according to the following definitions:

- yes: more than 80 per cent implemented;
- no: less than 20 per cent implemented; and
- partially: between 20 and 80 per cent implemented.

Example, a Warehouse Worksheet may ask:

"Are bin cards issued and filled correctly, recording all info?"

- YES would mean, over 80 per cent of the stocks have pre-numbered bin cards and all stock movements have been properly recorded.
- PARTIALLY would mean, bin cards are being used but between 20 to 80 per cent of warehouse stocks have no cards and/or the cards are missing relevant stock-movement information.
- NO would mean less than 20 per cent of the required bin cards have been issued and/or completed.

System information guide

Only one box must be selected for each question. Care must be taken when inputting the answers as the spreadsheets have not been automated to prevent double entries; e.g., answering both YES and PARTIALLY for the same question. Nor will it indicate when the answer to a question has been omitted. On completion of each page double-check that every question has been answered and only one box has been checked.

The questions are not weighted: each carries the same value as the others on the sheet.

In an excel format, as the questions are answered, a percentage is automatically calculated for each sub-group on the right-hand side of the worksheet. Similarly, a total performance figure will be calculated on the bottom right-hand side of each worksheet; these totals are represented automatically in graphic form on the final worksheet.

Procedural updates

As the tool is used over time, it is important that changes in procedure are reflected in the QC system. Similarly, weaknesses in systems that are highlighted by the QC process should be corrected by procedural changes. Feedback is provided through periodic management reports. (See attached electronic version)

Along with the use of tools, the logistician must remember key things required in the normal logistics processes that support a QC system. Some examples:

- documentation required from the supplier: certificate of conformity, certificate of origin, delivery notes, etc. that the supplier has to provide;

- sampling and laboratory analyses: the contract has to mention the place and moment of sampling, the person or company who will perform the sampling, the method, the time between the QC and the delivery inspection. Frequently, the buying organisation is responsible for the analyses and inspection costs, whilst the supplier replaces the missing quantities or damaged packaging used for sampling;
- delivery inspection: the contract has to mention the place of delivery inspection, the person or company who will perform the inspection (when not done by the organisations employees) and the components of the inspection (documentation, quantity and quality);
- acceptance of products: the contract must include the acceptance modalities of the products, the penalties in case of non-compliance with the technical specifications. In case of non-compliance the supplier has to replace the products and will have to support all the costs related to this replacement.

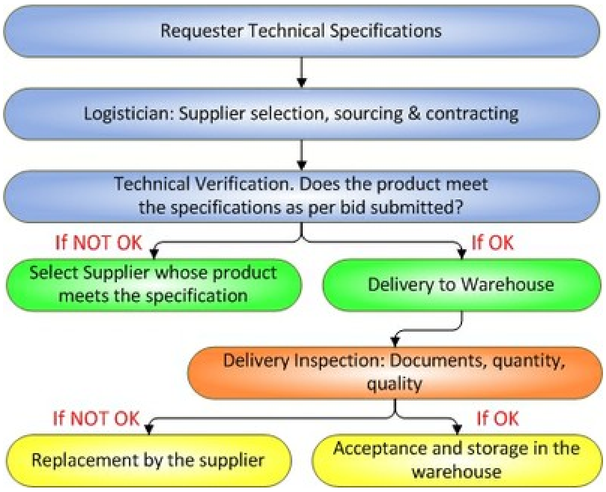

Diagram 2: Quality system process

To download the diagram, 'right click' on it and then choose 'Save Image As' from the menu OR go to Annexes.

Throughout the process demonstrated in the diagram above, numerous documents are generated. These documents support an efficient QC system. One example is the user request. See below some quality control guides for selected products. The information can be found in the user request.

Sample Quality Control Guide for Products

Agricultural Tools

The technical specifications should at least define:

- a description of the shape or a drawing;
- the minimal and maximal weights;
- the size;
- the type of metal or other components; and
- the presence of a handle or not, and if relevant its description.

When feasible, the logistician will request a sample from the various potential suppliers and will evaluate the quality with the technical officers.

Fertilizers or pesticides

The logistician must refer to the FAO guidelines for storage and transportation to prevent accidents.

Seeds

The following criteria must be taken into consideration for the quality control of seeds:

- genetic quality;
- physiological quality;
- what percent of seeds planted begin to grow during a given period;
- specific quality:
  - this refers to the percentage of inert materials (debris, pebbles, etc.) and broken or otherwise damaged seeds that make up a given quantity of seeds;
  - phyto-sanitary quality.

This refers to whether there are parasites and/or diseases in or on the seeds, or with them.
The following tests and analyses require very few materials and can be organised even at the base level:

- germination rate
- percentage of pure variety
- percentage of damaged seeds
- percentage of other substances (in weight)
- percentage of other crop seeds present
- percentage of weed seeds present

Note: when time is limited and does not allow a laboratory analysis a field germination test is the minimal precaution to guarantee an acceptable quality.

Medical supplies

From a logistics the point to note is that pharmaceuticals have preset standards and are or should be certified before they are purchased. Some key things to verify when receiving pharmaceuticals are:

Procedures for the quality control: the respective unit should work closely with the logistics department and submit a well documented request providing:

- description – state the drug required giving the exact specifications and batch number;

- expiry date;
- previous Supplier or provider of the drug;
- fact observed;
- chronology;
- any anticipated quality flaw to look out for;
- important remarks;
- copy of related documents;

- packaging – check for broken seals;
- composition – verified by technical unit(pharmacist/doctor/nurse); and
- storage conditions.

In cases where products are being manufactured specifically for an organisation on request, it is imperative to contract an inspection company or laboratory to test for quality compliance and ensure that the testing is in conformity with all customs requirements of the country or region where the product is destined.

Dependencies

The success of a tool or a quality system is dependent on the following:

- the staff must be well trained to use the tool. Regular training of all personnel in the use of QC systems is essential for the success of QC;
- use of the tool must be consistent. The entire logistics team needs to be committed to the QC system and understand that it is an enabling tool, a tool which makes their job easier and more effective;
- required changes must be implemented to get the correct results. The use of staff feedback is vital to ensuring the continued relevance of QC systems to the practical aspects of the function; and
- the tool must be simple and easy to use.

Conclusion

This topic provides a basic understanding of QC. QC should be applied across all logistics and supply chain activities. Carefully selected QC criteria are a vital management tool which enables an organisation to monitor and evaluate performance and thus sustain continuous improvement. QC data also provides the metrics essential to providing justification for staffing and funding.

Applying and improving quality management provides benefits such as reduced costs, shorter lead times, the right products being received, timely delivery of services, etc for the logistician and internal users and leads to improved outcomes/reduced suffering for beneficiaries through x,y,z.

It is important to maintain management attention on quality in order to continuously improve the delivery of humanitarian support to the affected communities.

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