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Logistics for food assistance: delivering innovations in complex environments

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1. Introduction

As WFP's food assistance becomes increasingly sophisticated and multi-faceted, the supporting logistics operations become more complex and multi-modal. Each year, WFP distributes close to 5 million mt of food, reaching an average of 95 million beneficiaries across some of the toughest terrain on the planet. On any day, WFP operates an average of 60 aircraft, 40 ships and 5,000 trucks, moving food and other assistance to where it is needed. A strong presence in 80 countries, combined with extensive local networks and technical expertise, allows WFP to manage these large-scale and complex logistics operations.

Although its focus remains on moving food and saving lives, WFP is aligning itself within the One United Nations initiative by providing services that include the transport and storage of general cargo and non-food items, the transportation of humanitarian aid workers and donors, coordination of the logistics response on behalf of the humanitarian community, and the provision of training for humanitarian logisticians from other international organizations. WFP is at the forefront of humanitarian logistics, as demonstrated by its leadership of the Logistics Cluster, its management of the United Nations Humanitarian Air Service (UNHAS) and the United Nations Humanitarian Response Depot (UNHRD) network, and its role as a logistics service provider to 40 other humanitarian organizations.

The importance of time sensitivity in relation to supply chains is particularly clear when people's lives are at stake. However, the logistics situation is often

complicated by the heightened risks that WFP now faces in the more complex environments in which it operates. The humanitarian stakes are high regarding timeliness, given the sophisticated global media and high expectations of donor governments.

This chapter details WFP's logistics capacity and practices and its engagement as an inter-agency logistics service provider. It then explores the challenges and risks arising from ever-increasing humanitarian needs.

2. Logistics' many roles in WFP

2.1 Context and objectives

WFP's delivery of some 5 million mt of food aid a year to some of the world's most remote and poor locations is, in itself, quite an achievement. Despite the dependence on voluntary donations – which take time to arrive – assistance has to reach the right place at the right time, entailing huge logistics challenges. WFP's logistics capacity also has to adapt to the different demands of emergencies, protracted crises and development contexts.

In unpredictable emergencies, such as the Indian Ocean tsunami, the Kashmir earthquake or the Haiti earthquake, WFP has suddenly to turn its attention to hundreds of thousands of people who were living normal lives until yesterday, but who now depend for their survival on the food that WFP can deliver. These people cannot wait weeks or months; their needs are immediate, so WFP's response must be.

The Sudan, where WFP is carrying out its biggest operation, provides an example of the challenges that confront WFP even in operations where the locations needing food aid and the time frame for delivering that aid are known in advance. It was known at the outset of 2009 that food assistance would be needed in the Sudan for 6.3 million people affected by conflict. That meant delivering some 665,568 mt of commodities at a total cost of about US$872 million in the face of uncertainties over funding,[1] security problems, large-scale population displacements, seasonal floods that made huge areas inaccessible by land for months at a time, and a long logistics chain dependent on a fragile and neglected transport infrastructure.

Under the current country programme in Egypt, WFP is mandated to support the reform of national food subsidies by providing technical assistance to the government through its Food Subsidy Reform Project. The food subsidy system accounts for a major part of the Government of Egypt's safety net programme, in terms of both costs and coverage. In early 2009, the Minister of Social Solidarity requested WFP to undertake a study to assess the efficiency and effectiveness of

the food subsidies, and to quantify the administrative costs, leakages and wastage associated with each stage of the system's supply chain, which comprises mainly wheat flour/balady bread and ration card commodities. In March 2010, the minister announced the government's intention to consolidate the scattered production of subsidized balady bread into a single industry, with mega-mills and bakeries located at ports and outside cities, in line with recommendations made by the joint WFP/TNT case study of the supply chain.

The primary objective of WFP's logistics activities is to ensure that commodities are transported in the most efficient, timely and cost-effective manner (WFP, Transport Manual, section 1.2). To achieve this objective, WFP Logistics:

- maintains strategically pre-positioned stocks of operational support equipment and ready-to-eat food items that can be deployed quickly;
- maintains emergency staff rosters and standby partnerships for the immediate deployment of technical experts;
- mobilizes assets, including all-terrain trucks, helicopters, aircraft, vessels and landing craft;
- provides strategic airlifts, including on behalf of other organizations, for the transport of relief cargo.

2.2 Core activities

The supply chain shown in Figure 19.1 illustrates WFP's core logistics activities: procurement, transportation, storage and distribution.

Figure 19.1 WFP's supply chain process at the most elementary level
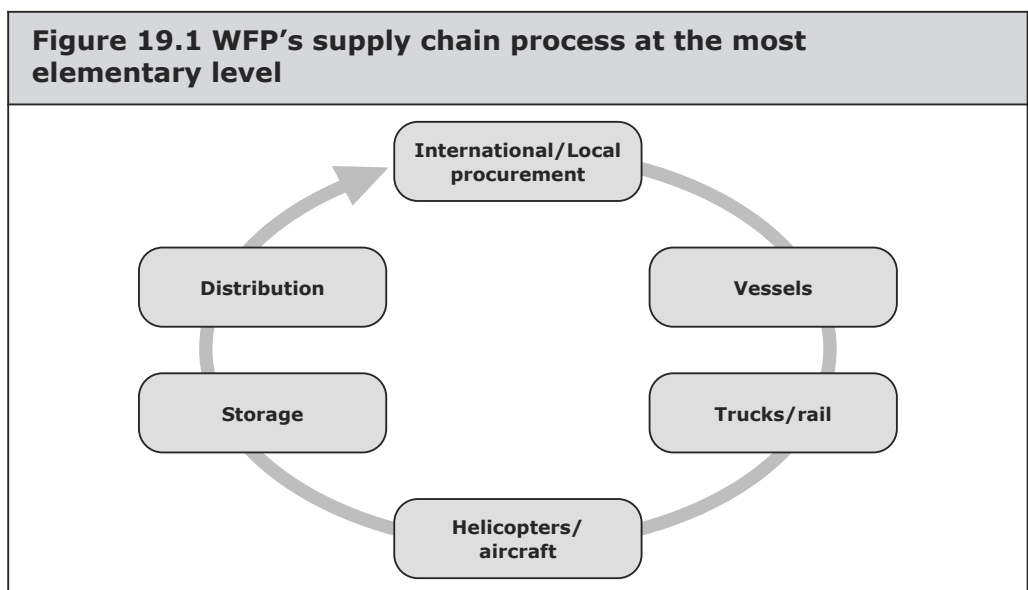
Procurement

For WFP, the food aid supply chain begins with procurement – the purchasing of food/commodities that are appropriate for those who need it/them and that can be made available quickly and cost-efficiently. Whenever possible, WFP buys food locally or regionally and mainly from developing countries, while strictly maintaining high standards of quality. Approximately half the food WFP distributes is produced in the country or region where it is needed. Procurement in countries that receive WFP assistance, and in developing countries in general, can have the added benefit of contributing to national economies, benefitting farmers, producers, traders and food processors. It can also encourage the development of local infrastructure, such as transport, warehousing, quality surveillance and technical services.

Shipping

For shifting millions of tons of food across the world, ships will continue to be the staple means of transport for the foreseeable future, even as WFP increases its local and regional purchases. WFP's shipping service transported more than 2.71 million mt of food aid in 2009, chartering 112 vessels and filling 55,000 20-foot containers. At any time, the shipping unit is managing a floating stock of more than 300,000 mt of food, some of which can be diverted from its original destination as part of a first-wave deployment in an emergency. This flexibility was vital, for example, in the early days after the Haiti earthquake in 2010 and in the Indian Ocean tsunami, when WFP logistics took the lead in shipping, airlifting and trucking thousands of tons of food and other supplies into affected areas.

Surface transport

At any time, WFP has about 5,000 vehicles, operated by local transporters, on the road. If local markets lack the necessary vehicles, WFP establishes its own fleet. If existing warehouses are insufficient, WFP erects its own. Where seasonal flooding is likely to make roads impassable, WFP pre-positions food to last until the waters subside.

In land-locked regions of sub-Saharan Africa, home to millions of WFP's beneficiaries, trucking is the most effective way of delivering aid. WFP Logistics is constantly seeking new overland routes and operational solutions to reduce costs and speed up and simplify the supply chain.

In mid-2004, WFP achieved a major breakthrough in supplying refugees from the Darfur conflict in camps in eastern Chad, when it reached agreement with the Government of the Libyan Arab Jamahiriya to open a 2,800 km land corridor across the Sahara desert, from the port of Benghazi; since then, more

than 208,000 mt have travelled through this Libyan corridor.

In countries such as the Sudan and the Democratic Republic of the Congo, WFP undertakes emergency rehabilitation projects to ensure that surface transport routes remain open to the extent possible, thereby reducing transport costs and assisting timely deliveries.

2.3 Inter-agency logistics services

United Nations Humanitarian Air Service (UNHAS)
When transporting life-saving supplies quickly to remote, inaccessible or hostile areas, or providing safe transport for relief workers, WFP often relies on aviation. In 2003, the High-Level Committee on Management mandated WFP to manage aviation services for all United Nations agencies, non-governmental organizations (NGOs) and implementing partners. This led to WFP's founding of UNHAS. WFP Aviation regularly charters fixed- and rotary-wing aircraft, ranging from the 12-seater Cessna caravan to the Antonov-124 freighter and the MI-26 helicopter, with payloads of 120 and 20 mt respectively. In 2009, WFP Aviation transported 324,000 passengers and 12,400 mt of food and other supplies to more than 200 destinations in 14 countries, and carried out 135 medical and 782 security evacuations.

In 2009, UNHAS served more than 700 United Nations agencies, NGOs, international organizations, donors, media and diplomatic personnel. In the most insecure areas, WFP Aviation provides a safer, quicker and cheaper transport option for humanitarian workers reaching beneficiaries, conducting assessments, monitoring projects, and mobilizing resources through donor and media visits. The problem with air supply, however, is the extremely high cost, which is many times higher than those for delivering goods by train, barge or road.

### *United Nations Humanitarian Response Depot (UNHRD) network*
Moving cargo across the world is time-consuming. Since 2003, WFP has been working to reduce response time by establishing five strategic locations around the world for storing essential relief items for WFP and the wider humanitarian community.

The first UNHRD was set up in Brindisi, southeast Italy, in 2000, for stockpiling rapid-response and survival equipment and emergency shipments of food supplies, ready to send anywhere in the world within 48 hours.

Building on UNHRD Brindisi's success in responding to sudden-onset emergencies, WFP has established four additional humanitarian response depots (HRDs): Panama City, Accra in Ghana, Dubai City, and Subang in Malaysia. The UNHRD network supports WFP's corporate goal of being prepared to respond

to four large-scale emergencies at any time, and supports the emergency response efforts of United Nations, international, government and non-governmental organizations.

Figure 19.2 UNHRD network
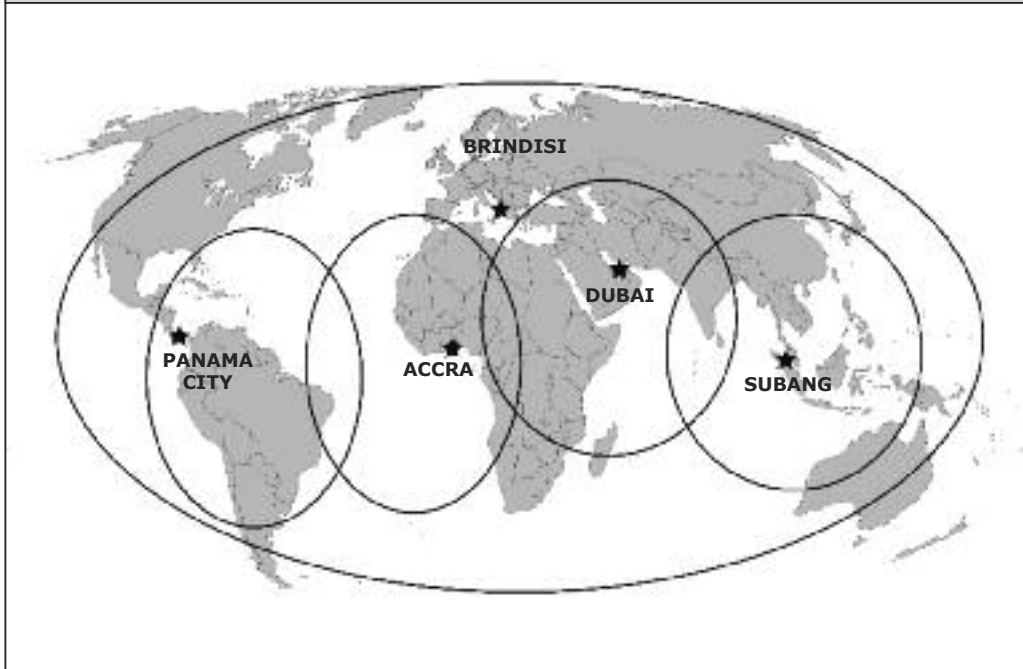
WFP has standardized the design, stocks and operational protocols of depots throughout the network:

- *Strategic location:* All HRDs are located on the premises of an international airport, close to seaport and surface transport hubs.
- *Free storage:* The UNHRD network offers free storage to United Nations, international, government and non-governmental organizations.
- *Design:* The network offers state-of-the-art warehouses with features such as cold chain and assembly facilities. The depots have at least 5,000 m² of closed storage, 5,000 m² of open storage and ample space for offices and training.
- *Real-time stock tracking:* All depots have advanced warehouse management systems that provide real-time status reports of stocks, for better supply chain visibility and faster decision-making.

- *Procurement arrangements:* WFP has special arrangements with suppliers to provide stocks such as virtual and white stocks – which are stored at UNHRD premises at the supplier's risk – that can be acquired through the UNHRD network at competitive rates.
- *Training facilities:* Depots offer fully equipped indoor/outdoor training facilities suitable for conducting emergency simulations.
- *Staging areas:* Depots serve as regional staging areas through which all in-kind bilateral aid can be channelled and transported to crisis areas, creating a "pull" rather than a "push" system.

In 2009, the network performed nearly 455 shipments on behalf of more than 25 organizations; an increase of more than 200 percent since 2008.

As well as responding with emergency relief items within 24 to 48 hours of an emergency anywhere in the world, the HRDs also guarantee cost benefits through their proximity to potential crisis theatres, thus reducing transport costs. In the Myanmar emergency, it cost US$9,180 per metric ton to transport relief items from HRD Brindisi, compared with US$4,900 from HRD Dubai.

The Haiti earthquake emergency of 2010 demonstrates the strength of the network. Four of the five HRDs were activated immediately after the earthquake, with HRD Panama serving as the staging point and frontline responder for augmenting logistics and transporting operational support equipment as quickly as possible into the affected areas. A total of 35 shipments of humanitarian relief items were sent, including prefabricated office and accommodation units, mobile warehouses, toolkits, blankets, jerry cans, generators, electrical distribution kits, and ablution units.

The Logistics Cluster

WFP's expertise in logistics meant that in 2005, as part of United Nations reform, it was mandated to lead logistics operations whenever a humanitarian emergency requires a joint response from United Nations agencies and the humanitarian community. The Logistics Cluster is a group of agencies and organizations working together. As the global lead of this cluster, WFP is responsible for ensuring that each emergency has a well-coordinated, efficient and effective logistics response, not just for WFP and its food distributions, but also for the larger humanitarian community.

The cluster approach aims to strengthen overall response capacity and the effectiveness of responses through:

(i) ensuring sufficient global capacity is built up and maintained, including increased preparedness and technical capacity; common standards,

monitoring and advocacy, surge capacity and standby rosters; joint training, joint stockpiles and pooled resources; and adequate, timely and flexible humanitarian financing;

(ii) ensuring predictable leadership;

(iii) reinforcing the concept of partnerships – clusters – among United Nations agencies, the International Red Cross and Red Crescent movement, international organizations and NGOs;

(iv) strengthening accountability;

(v) improving strategic field-level coordination and prioritization in specific sectors/areas of response.

To ensure that life-saving relief cargo reaches affected populations in time, WFP leads the Logistics Cluster by coordinating logistics and, if needed, augmenting logistics infrastructure and providing common logistics services for the humanitarian community. Since its first activation during the Pakistan earthquake response in 2005, the cluster has supported the response in more than 30 emergency operations and has trained more than 200 logisticians from 30 organizations, to strengthen preparedness and build capacity for more effective and coordinated responses.

The cluster team gathers data on logistics networks around the world, identifying the major players in each region, the coordination structures that are in place, and where problems might arise in an emergency. When an emergency occurs, the cluster then deploys a team, including members of other United Nations agencies and NGOs, to assess the situation and decide on the scale of logistics response, whether it be simply collecting and sharing information, or making a whole fleet of aircraft, vessels and trucks available for use by the humanitarian community, as was the case during responses to the Myanmar cyclone in 2008, the Philippines flood in 2009, and the Haiti earthquake in 2010.

The response to Cyclone Nargis in Myanmar demonstrated the strength of this system. The Logistics Cluster comprised 39 organizations using common logistics services, including an air-bridge between Bangkok and Yangon and surface transport inside Myanmar, which transported 15,856 mt of life-saving humanitarian cargo within three months: 4,005 mt of relief items were flown into Yangon via the air-bridge, in 203 rotations; 170 containers moved a total of 534 mt of cargo by sea; helicopters made 918 rotations to 156 remote locations in Myanmar, carrying 912 mt of food and non-food items, such as shelter, medical and hygiene materials, family kits and water purification units; and 10,405 mt of relief items were delivered by road and boat/barge.

Service provision

In 2009, WFP provided logistics services to humanitarian organizations in 40 countries, increasing its partnerships and coordination with other humanitarian actors and making more efficient use of its own logistics capacity in procurement, shipping, aviation, warehousing and surface transport.

2.4 The importance of partnerships

WFP could not undertake logistics at this scale on its own. Partnerships among humanitarian participants are critical to effective responses in emergencies. Much of WFP's success over the years has been due to the strength of its partnerships with governments, other United Nations agencies, the NGO community and, increasingly, the private sector.

WFP utilizes private sector partners to increase the effectiveness of emergency operations without adding administrative burdens. Major private partners are the Boston Consulting Group, TNT, Caterpillar, Citigroup, Unilever, DSM, the Vodafone Group Foundation, the United Nations Foundation, the Bill and Melinda Gates Foundation, the ELMA Relief Foundation and the Howard G. Buffett Foundation.

Private sector partners also contribute to WFP's coordination of logistics for the wider humanitarian community. Logistics Cluster operations are supported by logistics emergency teams (LETs) established by TNT, UPS and Agility. In 2008, 11 international and 200 national staff from LET-supported emergency operations were deployed, including in China, Haiti, India, Mozambique and Myanmar.

The private sector raised more than US$1 million for the WFP emergency operation in the Philippines following flooding caused by a series of tropical storms. TNT dispatched two cargo flights of high-energy biscuits to the disaster zone. Following the Padang earthquake in Indonesia, rapid response teams, trained through support from Vodafone and the United Nations Foundation, helped establish information and communications technology and logistics support.

Standby partnerships

Since 1996, WFP has relied increasingly on agreements with standby partners to augment its emergency response capacity. These partners provide technical expertise in service areas, primarily logistics, aviation, information management and information and communications technology.

In 2009, WFP's operations were augmented by 106 deployments of personnel provided by standby partners; of these, 104 were in-kind contributions. The deployments, with an estimated value of US$7.8 million, came from a range of international NGOs, governments and commercial organizations. Several of WFP's standby partners deploy full service packages of

staff and equipment, such as the self-sustaining base camp support modules sent to Haiti immediately after the earthquake – comprising tents for accommodation, dining, showers, ablutions and recreation plus support staff to run the camp – and the truck fleet, equipped with management staff and maintenance support, deployed in eastern Congo.

2.5 Information management and training

WFP has long recognized that good information systems are the key to effective and efficient supply chain management. It aims to achieve a flow of information from the point where requirements are needed directly to the supplier's logistics and replenishment system. Table 19.1 summarizes the information products, operational tools and training available for WFP staff and partners.

Table 19.1 Information products, operational tools and training for WFP staff and partners	
Products and tools	**Training**
• Logistics Operational Guide	• Logistics response training
• UNHRD Warehouse Management System	• Emergency response training
• Fleet Management System for WFP truck operations	• Technical field operation training
• Relief Items Tracking Application	• Surface transport contracting and port operations management training
• Flight Management Application	• Service mindset e-learning training, containing theory, tools and exercises for putting service at the centre WFP's way of working
• Customs Information Guide	
• Transport Manual, Warehouse Manual, Food Storage Manual	• Medical logistics training, on the logistics handling of medical items
• Monthly WFP Logistics Bulletins, sent to all logistics officers globally	• Continued training on cluster awareness and deployments
• WFP Logistics Blog	• Certification in Humanitarian Logistics, through the Fitz Institute
• Logistics articles on the corporate website	• Management training
• Internal and external logistics portals	

3. High-stake logistics

3.1 Global increases in the demand for logistics capacity
Growing humanitarian needs are driving up the demand for logistics capacity. WFP's operation of its logistics apparatus is evolving in line with the increasing demand for its resources, in support of not only WFP operations, but also those of other United Nations agencies, NGOs, international organizations and governments.

The following subsections highlight examples of growing humanitarian needs and their impact on WFP logistics.

Rising freight costs: sky sails save fuel
In 2009, WFP chartered two ships powered by sky sails to ship cargoes from Europe to Asia. A sky sail is a magnum-size kite that uses wind power to provide pulling power, so the ship's engines can work on reduced power and save fuel. Under ideal weather conditions, the use of sky sails can reduce fuel consumption by 30 percent, which equates to 4.5 mt of fuel per day. With a 30-day average transit time, this dramatically reduces WFP's carbon footprint and transport costs.

Constrained food supply: benefits of real-time tracking of WFP containers
WFP moves approximately 55,000 containers through more than 150 ports every year, assisted by 67 international and regional shipping lines. In 2009, it initiated a pilot system that allows it to track and monitor the movement of containers. Users can pull detailed reporting schedules and updates directly from the system, and WFP hopes it will soon be able to monitor more than 90 percent of its shipping traffic. The system has already shown its worth: a delay in the delivery of pulses to Port Sudan for relief operations in Darfur was identified while the pulses were still in transit, and other stocks could be redirected to fill the gap and maintain the pipeline.

Constrained food supply: pre-positioning and advance financing
WFP uses advance financing mechanisms to ensure regular food supplies in particularly high-risk areas. For example, in February 2010, WFP's early warning system highlighted the risk that the hunger season in the eastern Sahel area of West Africa was going to occur two to three months earlier than usual, owing to poor rainfall in 2009. Advance financing mechanisms were activated to ensure that life-saving food commodities were delivered on time, and could be pre-positioned prior to commencement of the rainy season in June.

In May 2009, as in every year, WFP began dispatching food to areas of

Afghanistan that would be cut off by snow in winter. Although the Afghan winter does not start until October, it is vital to start pre-positioning food early in areas such as Darwaz, in the remote northeast, where it takes months to deliver relatively small amounts. Cut off from the rest of Afghanistan by a 5 km wall of mountains, Darwaz can only be reached by boat across the Amu Darya River from Tajikistan. An NGO took the food across the river in small rubber boats that could transport only 1 mt at a time. More than 1,000 boat trips were needed, navigating their way through strong river currents, frequent border closures and complex customs paperwork. When the food reached the Afghan side of the river, it was loaded on to donkey caravans, which carried it up steep mountains to 70 final distribution points. Darwaz is just one of almost 200 districts in Afghanistan where food is pre-positioned each year for winter.

Rising food and fuel prices: the impact on WFP's logistics operations
For WFP, the overall cost of feeding a hungry person was an average of 50 percent higher in 2007 than in 2002. The confluence of high oil prices and high world prices for grains created a challenging operating environment given the large scale of WFP's logistics apparatus and purchases on the open market. Transport costs contributed to the cost increase, with the price of oil rising by 165 percent and freight rates by 40 percent. In 2007, WFP transported 2 million mt of food assistance by sea at a cost of US$235 million. It managed to obtain competitive rates despite volatility due to rising fuel prices and an imbalance in cargo supply and demand. WFP sometimes used this imbalance to its advantage, such as when it was able to move rice from Karachi to Bangkok at US$1 per metric ton.

WFP has also offset rising transport costs by supporting the rehabilitation of railways and roads in countries where it operates. For example, in Southern Sudan, WFP manages a large-scale project to improve road access and increase the transport capacity of the road network. In addition to benefitting the local economy as a whole, these improvements have had a direct impact on the costs of WFP deliveries. With 2,732 km of road rehabilitated, ten major bridges installed and 367,284 m² of mined area cleared, WFP's convoy turnaround times have improved by 100 percent, trucking capacity in the region has increased, and transport rates have gone down. Improved road access allows the pre-positioning of stocks ahead of the rains, reducing the need for airdrops by 90 percent – they occur only when roads become inaccessible during the rainy season – and resulting in decreased transporters' rates. For example, for the April to November rainy season, transporter rates decreased from US$0.44/km/mt in 2007 to US$0.34 in 2009.

3.2 Risk management

WFP's core business is responding to complex emergencies. It can seldom choose not to work in these environments, and very rarely stops or suspends operations – only in response to extreme violence or the host government's refusal to allow aid. WFP can therefore not avoid risk, and must manage it through methods of transferral, reduction or acceptance.

WFP recognizes that a critical factor in risk management is the ability and willingness to alter existing mitigation measures quickly to adapt to any change in the risk. Any risk management solution must comply with WFP's core humanitarian principles of neutrality and impartiality: WFP cannot take, or be perceived to be associated with, any side in a conflict, and aid is provided on a strictly non-political basis. The provision of assistance is based purely on need, with no group, people or area being favoured.

These principles are not only ideals, but also practical risk management. Many armed groups view the humanitarian community as having political motives. Any perceived lowering of standards of neutrality and impartiality would reduce these groups' acceptance of WFP, risking staff safety and preventing food from reaching the population.

Complex operating environments and their challenges

In complex environments, WFP's operations are often larger than any of the other actors in the country**.** In Somalia, for example, WFP was forced to expand its operation 12-fold between 2005 and 2009. By mid-2009, it was distributing 50,000 mt of food to more than 3 million people, about half the population, every month. This was delivered, often in convoys of more than 100 trucks, to more than 1,000 distribution sites across the country. Such a scale may preclude some risk management options available to smaller ventures.

The following highly volatile situations are characterized by a number of factors that heighten the risks for WFP.

Insecurity perpetuated by State and non-State actors: Fragmented conflicts with multiple opposing sides, regularly changing front lines, and weak central governments are common. Ideological and ethnic divisions complicate matters further. Sides often prevent aid from reaching people in their enemies' territory, while trying publicly to associate themselves with WFP. Agreements with leaderships often fail to safeguard against attack or looting from their militias. In some cases, terrorist groups establish a presence and view the humanitarian community as a legitimate target, as witnessed by the attacks on United Nations offices in Baghdad, Algiers and Peshawar in recent years.

A highly polarized and intrusive political context: To gain access, WFP may have to talk to all the sides in a conflict. This often earns WFP criticism from the country's government, elements of the media, and political bodies. At the same time, donors and the media may put pressure on WFP to respond to the emergency without talking to the rebels controlling the area. In such instances, WFP is almost certain to receive public criticism from one side or another.

Lack of access: Insecurity regularly results in WFP staff being unable to travel to the areas they need to reach, sometimes for considerable periods. Needs assessments and monitoring of the delivery, distribution and impact of food aid cannot be carried out in person, and alternative remote-controlled methods must be sought. This lack of access extends to the international NGOs that usually undertake food distributions for WFP. This results in reliance on local NGOs whose capacity is smaller, forcing WFP to coordinate the use of many more NGOs than normal and to deal with reduced quality and timeliness of reporting.

Limited infrastructure and deployable assets: Chronic conflict results in damage and decay to infrastructure. Trucks are scarce, old and often controlled by the few people with the finances needed to undertake WFP operations. Some of these people may have links to parties to the conflict, and attempts to introduce additional trucks into the market are violently opposed. Transporters know that humanitarian aid will continue regardless of the challenges, so charge exorbitant rates. These factors complicate attempts to diversify the transporters used, and affect the wider humanitarian community whose cargo WFP transports through its leadership of the Logistics Cluster.

Increased risk of losses: Attacks on and looting and taxing of aid are common, and seen as lucrative and legitimate by many armed parties. There is high risk of loss in these environments, and WFP's tolerance for loss is limited by its public nature and funding: donors expect minimal losses, and instances of loss are reported by the media, causing reputational damage for WFP. There is a widespread expectation that WFP will lose no more in a complex environment than it would in a stable setting.

Product "branding": Donors usually require that the aid they donate to WFP be packaged with their own markings. In some complex environments, there are elements that oppose interventions by certain nations, and that block aid with these States' markings. WFP therefore faces a dilemma between gaining access to an area/population and fulfilling its donors' requirements. Donors sometimes

allow aid to be unmarked, but WFP does not generally have the freedom to "re-brand" the products it distributes.

Short budget cycles: Although WFP may be present in a country for decades, the life span of a particular project is usually only one to three years, after which a new intervention must be approved. There is therefore little scope for planning beyond a relatively short time horizon.

Existing risk management in complex environments

WFP has corporate controls that it implements to the extent possible in all operations. These controls, and challenges in their implementation in complex environments, are highlighted in the following paragraphs.

Operational data: All WFP interventions are based on detailed needs assessments that define the scope – the location and number of beneficiaries – and composition of the required food aid supply. Sometimes, owing to insecurity, assessments are undertaken using indirect means and secondary or tertiary data.

Contracting: WFP has corporate contracting guidelines. Contracts are approved by the WFP country director, with larger ones requiring clearance from Headquarters. Agreements with NGOs for distributing food to beneficiaries follow similar guidelines. Prior to the shortlisting or contracting of a company, its name and those of its shareholders are checked against the United Nations 1267 sanctions list, and a financial and operational analysis is undertaken. This covers financial records, previous experience and assets owned/controlled. To ensure that WFP can depend on a pool of companies with a minimum level of capacity/reliability, it adds companies through annual shortlisting exercises.

Commodity tracking: WFP's Commodity Movement, Processing and Analysis System (COMPAS) tracks food all down the supply chain, from when it is procured or donated in kind, to when it reaches the hungry poor. A worldwide network of nearly 400 data entry stations, documenting millions of dispatches and receipts, logs food movements from thousands of warehouses around the world, entering data on everything from waybills to distribution reports, so that cargo movements and stocks are visible from everywhere.

Ensuring the prompt and accurate registration of millions of transactions in COMPAS, to provide up-to-date reports for project managers, emergency task forces and donors, is a huge challenge, particularly during an emergency when access to the information required can be difficult. COMPAS is vulnerable to the breakdowns/delays experienced in any information technology system operating

in a remote environment. The heavy data entry component requires a considerable number of staff. WFP intends to replace COMPAS with a SAP-based product that will improve data consistency and timeliness, and allow the incorporation of commodity tracking data from donors and NGOs, to provide a single picture of movements from time of donation up to point of distribution.

Distribution monitoring: WFP deploys food aid monitors at distribution sites to oversee the delivery of food by transporters, its hand-over to NGOs, and its distribution to the population, by NGOs. In insecure areas, it is not always possible to deploy food aid monitors, resulting in reliance on the integrity and accuracy of NGO reporting. NGOs are required to provide regular reports on the food they have received and distributed; the figures are compared against those in COMPAS. NGOs are paid for the amount of food they report distributing, once COMPAS confirms this. When access is possible, WFP staff visit distribution sites and beneficiaries after distributions to check the performance of the distribution, any problems occurring afterwards, the effects of the food aid on the area's food security situation, and the need for adjustments in future distributions.

Annual auditing: Operations are audited once every two years, or annually in complex environments. WFP's Office of the Inspector General, reporting directly to the Executive Director, follows up on any alleged discrepancies. However, lack of access to an area hinders audit teams, resulting in greater reliance on secondary data.

Innovative risk management practices

WFP recognizes that it faces increasing risks in complex environments, and that corporate risk management approaches and techniques require continuous analysis and reappraisal to make them as effective and applicable as possible in the most complex of its interventions. In early 2010, WFP Logistics embarked on a review of new and innovative risk management techniques that it may consider putting into practice to bolster existing safeguards. In several complex environments, WFP has already devised specific risk management measures to enhance the corporate system. The following are some of the risk management technologies or methods which WFP is currently using or exploring for feasibility of possible future use.

Monitoring: In inaccessible areas of Afghanistan, WFP has outsourced needs assessments and monitoring. Programme assistance teams that are not subject to WFP contract or United Nations travel restrictions have been trained in the same skills as WFP food aid monitors and are tasked directly by WFP staff,

thereby incorporating them operationally, if not contractually, into WFP efforts. This has improved the implementation and accountability of WFP's projects. In parts of Somalia, a system of triangulation is used, whereby information on distributions is collected from transporters, NGOs and communities, whose reports are cross-checked against each other. Satellite imagery is used to track populations, and harvest yields to refine figures for future distributions.

Audit: Compliance teams of WFP technical experts work with country offices in complex environments to analyse the offices' range of systems, including financial, supply chain and distribution monitoring, and to ensure that standards meet corporate levels. Compliance team members also learn about the specific challenges faced by these operations, and bring this information back to Headquarters to be factored into corporate safeguards.

Transportation: Piracy greatly reduced the number of vessels willing to sail to Somalia, threatening to halt WFP's deliveries to the country. Ninety percent of WFP food assistance for Somalia is shipped by sea from Mombasa and ports in South Africa, but the waters off Somalia are among the most dangerous in the world: pirates made 60 attacks on shipping in 2008, the worst year on record in the region. In November 2007, for the first time in its history, ships carrying WFP food travelled to Somalia under the escort of warships, from France, Canada, Denmark and the Netherlands. In December 2008, the European Union made a commitment to provide escorts for WFP for up to a year. Naval escorts have been an effective deterrent against the pirates: ship owners reported that the presence of a warship deterred pirates from attacking ships in the area. Without escorts, WFP's maritime supply route would have been under threat; when naval escorts were temporarily suspended for a short period, some shippers refused to load WFP food for Somalia. In August 2008, the United Nations Security Council commended the governments that had provided naval escorts for humanitarian vessels and called on Member States to continue providing such escorts.

WFP recovers 100 percent of the cost, insurance, freight (CIF) value of any food lost, which transfers financial liability to the transporter, although the risk of reputational damage remains. In Somalia, WFP levies security bonds on transporters, which deposit 30 percent of the CIF value of all the cargo in their custody into WFP's bank until delivery of the food is confirmed. WFP therefore already holds 30 percent of any monies it may need to recoup. Instances of losses and looting have fallen substantially, with transporters making greater efforts to ensure that looting does not occur, or that food is recovered quickly from looters.

Media: In several operations, WFP has recruited local media officers who speak the local language and have knowledge of local media structures, personalities and agendas. They allow WFP to communicate to the population through the full range of media, using the most appropriate messaging.

Tracking: Bar code and radio frequency identification (RFID) technologies serve similar functions. Both can be attached to a product, and contain information that can be collected through either using a scanner, such as at supermarket checkouts, or emitting radio waves for a short distance. While bar codes are printed on the outside of packaging and can be damaged, RFID chips are incorporated into the packaging and are therefore more durable. WFP could use either to serve the same tracking function as COMPAS, with bar codes/RFID chips being scanned at each link in the supply chain. A benefit would be the speed at which information is uploaded, as manual data entry is no longer required. It would also allow tracking at the bag/carton level, rather than the batch level as is currently the case. At present, WFP knows the number of bags it has from a particular batch, but cannot trace the progress of a specific bag. However, it is unclear whether this level of detail is required for the efficient and effective delivery of large quantities of homogeneous product. Although, for example, every parcel that DHL delivers is unique and destined for a specific address, WFP operations usually deliver no more than five commodities, and deliveries are made in batches.

Although the cost of the technology has decreased over recent years, and the durability of RFID chips overcomes the problems of unreadable bar codes, potential drawbacks remain. The technology requires that a scanner for reading the information be present at each distribution site. Unless considerable numbers of scanners are purchased, the number of final delivery points – the last point in the WFP supply chain – that could receive distributions at the same time would be limited to the number of available scanners. In Somalia, WFP stencilled a code on to each bag destined for the inaccessible area of Afgoi, with details of the transporter, distributing NGO and distribution site. By reading the codes on bags being sold in markets across Somalia, it was possible to tell how much food was coming from Afgoi, which distribution site it was coming from, and to which markets it was being taken. This helped identify the percentage of commercially sold WFP food that came from Afgoi. However, systems such as these cannot distinguish between food aid that has been stolen to sell and that being sold legitimately by the beneficiary who received it.

A more serious problem is the negative attitude of many armed groups in countries such as Somalia towards the use of technologies of this kind. Some agencies caught using Global Positioning Systems (GPS) and Thuraya satellite phones have been attacked and expelled from Somalia, accused of spying. The

deployment of any sort of electronic tracking system in an environment such as Somalia therefore has the potential to undermine WFP's neutrality and impair its security and access.

WFP introduced GPS tracking devices on its own trucks, but the majority of its transport is carried out by local trucks, owing to the vast number of vehicles required and the desire to promote growth of the local economy. It is not possible to apply GPS tracking technology to ever-changing fleets of local trucks, which may work for WFP only intermittently. However, there is scope for considering the implementation of GPS tracking on local fleets that are dedicated to WFP operations.

Technology: Information technology initiatives are under way to link the supply chains of donors, WFP and NGOs. An Emergency Preparedness Integration Centre system, currently under design, will integrate applications such as communications, a barcode/RFID reader and GPS into a single device. This will allow NGO partners to enter distribution data directly into the WFP system, although certain organizational alterations will be required first.

A planned upgrade of WFP's FoodSat satellite communication system will extend the service from country and regional offices to all locations where WFP works, and allow the implementation of more advanced technological solutions.

Educating the market: Commercial companies make considerable efforts to prepare the market for the introduction of a new or updated product, so as to gain the widest acceptance possible. WFP has established methods for sensitizing communities and beneficiaries about the rations they can expect, but there may also be scope to learn from other organizations – whether humanitarian or not – working in similar complex environments about how to inform host governments, the media and the public at large on major issues relating to WFP, thereby pre-empting potential critics of WFP by providing them with full information. Issues such as food quality, new or unfamiliar food types, and WFP's adherence to humanitarian principles could be addressed in this way.
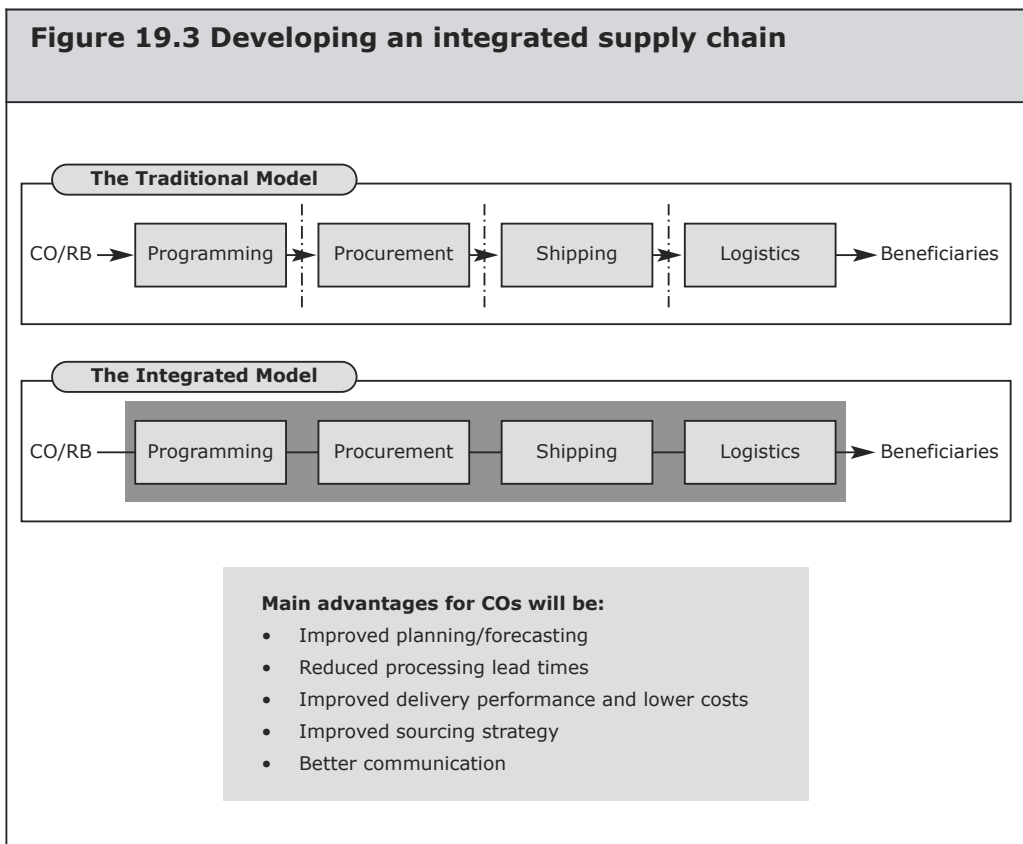
Outsourcing: Many companies and militaries choose to transfer risk through outsourcing functions. WFP does something similar by using NGOs to implement the distribution phase of operations. In Afghanistan the food aid monitor role has been outsourced to externally contracted staff in those areas of the country with the worst security and access. As inaccessibility for WFP staff continues to be a key characteristic of operations in many complex environments, further discussion of the possibility and suitability of outsourcing assessment, sensitization and monitoring functions may be useful.

3.3 Integration of WFP's supply chain

All supply chain actors within WFP – from the Resource Mobilization to the Programming, Procurement and Logistics units at Headquarters, regional bureaux and country offices – have one overarching objective: to meet beneficiaries' needs. This requires a reliable, agile, scalable supply chain with the capacity to adapt timely and efficiently to different types of requirements.

The different actors in WFP's supply chain take related but independent decisions to meet country offices' requirements. However, the best decision for an individual unit may not necessarily be the optimal decision for the overall process. Decisions are best reached through an integrated supply chain.

Work to develop an integrated supply chain started in late 2004, supported by Boston Consulting Group. Since then, some recommendations regarding resourcing, such as working capital financing, have been implemented, and other activities regarding planning and execution are evolving.

Figure 19.3 Developing an integrated supply chain

The Traditional Model

CO/RB → Programming → Procurement → Shipping → Logistics → Beneficiaries

The Integrated Model

CO/RB → Programming — Procurement — Shipping — Logistics → Beneficiaries

Main advantages for COs will be:
- Improved planning/forecasting
- Reduced processing lead times
- Improved delivery performance and lower costs
- Improved sourcing strategy
- Better communication

Source: Devised by Boston Consulting Group in cooperation with WFP.

Other cross-divisional initiatives have had positive impacts on WFP's operational efficiency:

- The Advanced Purchase Facility has demonstrated that lead times can be significantly reduced. Aspects of procurement, ownership and the costs of pre-positioning stocks require further discussion among all the supply chain actors.
- Use of the requested time of arrival as a realistic target for the service units – Programming, Procurement and Shipping – has led to the development of lead time standards (2006) and the release of the lead time tool (2006), which is currently being upgraded and linked to the new WFP Internal Network and Global System (WINGS) II.
- Introduction of the import parity form (2006) aims to assist country offices in their new (pre-)assignment activities. Its first objective is to justify the country office's recommended procurement type – local, regional or international. Recognizing that the form contained a number of inconsistencies, WFP Logistics, in collaboration with the Programming, Procurement, Shipping and country offices, is designing a new tool that automatically gathers information on commodity sources, prices and lead times, and presents this to the user, who can then adjust the items as necessary. Launch of the new import parity form is foreseen for July 2010.
- The Strategic Resource Allocation Committee (SRAC) was established in 2009 to oversee the strategic prioritization of resources allocation, including extra-budgetary funds and advance financing; to maintain strategic overviews of needs and shortfalls in WFP operations; and to identify the impacts of these so that areas for major appeals and fundraising can be prioritized.

These initiatives are enhancing WFP's efficiency and can be leveraged through an integrated supply chain, to achieve maximization of resources.

The most important benefit of the integration of WFP's supply chain is the timely fulfilment of beneficiaries' needs, including through the minimization of pipeline breaks. An overall vision of needs and the resources available allows the impact of the Advanced Purchase Facility to be maximized, making it an efficient rapid response system. Country offices will benefit from more reliable estimates of feasibility, lead times and costs. The combination of information availability, visibility of needs, and prioritization of resources allocation will promote quicker and more efficient responses in an emergency.

4. Looking ahead: logistics in the face of increasing challenges and complexity

WFP has supported national governments and institutions and humanitarian actors in strengthening their preparedness and response capacities through improved supply chain management and logistics. The provision of logistics services to other humanitarian organizations and governments is already an everyday activity for many WFP country offices. Where WFP has its own infrastructure, it is committed to increasing its operational efficiency and the impact on beneficiaries' lives by using excess capacity to support other organizations. By doing so, WFP is building stronger partnerships.

The Purchase for Progress (P4P) initiative will require logistics staff to manage complex collection networks for small quantities from multiple remote locations and/or to deliver training in storage and handling to farmers' organizations. As WFP pilots more electronic voucher systems, WFP Logistics will need to continue working with governments, as in the Syrian Arab Republic, to enhance their capacity to work with automated supply chains.

In countries such as Somalia and, to some extent, Afghanistan, lack of access, dilapidated and scant infrastructure, frequent scarcities of viable partners, and continual incursions into WFP's neutrality and impartiality by various parties all conspire to hamper the application of corporate norms. In such contexts, what starts as an operational risk, if not acknowledged and managed effectively, can escalate into a reputational risk.

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[1]   Over the years, WFP has been forced to put millions of beneficiaries in the Sudan on half rations for several weeks because donations have dried up.