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6

SECURING RELIABLE ACCESS TO MARITIME TRANSPORT FOR LANDLOCKED COUNTRIES

The passage of trade of landlocked countries through coastal territories to access shipping services is generally governed by a standard principle: goods in transit and their carriage are granted crossing free of fiscal duties and by the most convenient routes. In practice, however, the implementation of this basic norm suffers from numerous operational difficulties, resulting in high transport costs and long travel times, which undermine trade competitiveness and ultimately the economic development of landlocked countries. Over the past decade, under the Almaty Programme of Action launched in 2003, new analytical tools and extensive field research have brought fresh knowledge about the mechanisms explaining detected inefficiencies. Among other things, it has revealed that rent-seeking stakeholders may play against improvements, making transit operations unnecessarily complex and unpredictable, to the detriment of governmental and traders' efforts. Thus, by exposing conflicting forces at play along transit chains, the analysis shows that the trade of landlocked countries primarily suffers from unreliability resulting from a lack of cooperation among stakeholders, often explaining high transport costs and long transit times.

This chapter provides an overview of these findings, and based on them, explores a new paradigm that should allow for a radical transformation of transit transport systems, providing landlocked countries reliable access to global value chains and allowing them to act in ways other than as providers of primary goods.

The proposed approach aims to make the predictability of transit logistics chains a priority of the governments of both landlocked and transit countries – in partnership with traders, port operators and shipping lines, who stand to benefit the most from such an improvement – as well as a priority of the new development agenda for landlocked and transit developing countries to be adopted in 2014.

A. OBSTACLES TO TRANSIT CHAINS

The many obstacles faced by landlocked countries' trade transiting through other territories are commonly known. They range from long distances to inadequate transport services and infrastructure, and inefficient institutional and operational transit frameworks. Until recently, higher costs and longer times had been seen as the reasons for the lack of competitiveness of traders from landlocked countries. However, in the past decade, new research and field studies on local transit economics (Limao, 2001; Faye et al., 2004; Collier, 2007; Arvis et al., 2011, UNCTAD 2013,) show that the unreliability of the transit logistics system is the greatest impediment faced by manufacturers in landlocked developing countries as they attempt to enter value chains at both the regional and global levels. Other findings are briefly discussed here.

1. Distances, travel times and transport costs

In many landlocked developing countries, production and consumption centres are located more than 800 kilometres (km) away from the closest seaport (table 6.1), which translates in two or more days' travel time. Although extremely long hauls ranging between 2,500 km and 6,000 km or shorter distances of less than 500 km remain the exception, in all cases the distance to the sea not only adds costs and travel time, but also has consequences at the operational level: long travel times imply fewer turnovers of a given vehicle over a given period, often facing costly and long empty returns, and, ultimately, entailing lesser return on investment for the owner. Such a sequence dissuades investing in renovating the vehicles and leads to low quality of services provided by old, less reliable and less carbon-friendly equipment. In some cases, discussed below, prevailing protectionist regulations have had their share in defending the use of aging trucking fleets. (Arvis et al., 2010; Kunaka et al., 2013).

The remoteness from the sea has long been an obvious explanation of the disadvantage of long travel times and high transport costs affecting trade to and from landlocked territories. Widely documented (Arvis et al., 2010, 2011), these extra costs and times have also been generally qualified as excessive based on the comparison with data for coastal countries crossed by the landlocked cargoes or on international benchmarks providing comparison of other countries. Both types of comparison lead one to conclude that the difference of cost and times associated with remoteness from the sea cannot be denied and constitutes a serious disadvantage.

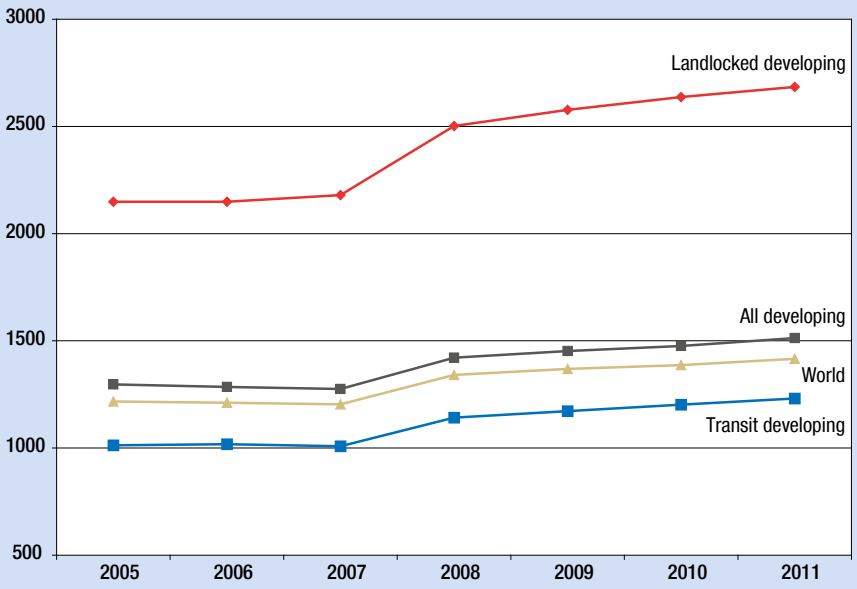
Nevertheless, because of the way these figures are collected, these comparisons might be misleading. Transport times and costs given for coastal countries' trade usually reflect the ocean transport to a port of entry in the coastal country. These do not include the necessary steps – and associated times and costs – required for traders in coastal countries to have their goods on their premises and that include unloading from the ship, cargo storage at ports, customs clearance procedures and inland transport. In contrast, figures for landlocked countries do include all port charges and other cargo handling and transport costs – and times – necessary for the carriage of trade to reach the final inland destination. The use of data not reflecting a similar content for times and costs in the comparison between the trade of landlocked and costal countries results in cost differences (figure 6.1) and time differences (table 6.2).

Table 6.1. Distances to ports from selected landlocked developing countries

Landlocked developing country	Ports	Range (km)	Mode
Afghanistan	2	1 200–1 600	road
Armenia	2	800–2 400	rail, road
Azerbaijan	2	800	rail-road
Bolivia (Plurinational State of)	8	500–2 400	rail, river, road
Botswana	4	950–1 400	rail, road
Burkina Faso	5	1 100–1 900	rail, road
Burundi	2	1 500–1 850	lake, rail, road
Bhutan	1	800	rail, road
Central African Republic	2	1 500–1 800	rail, road
Chad	2	1 800–1 900	rail, road
Ethiopia	3	900–1 250	rail, road
Kyrgyzstan	4	4 500–5 200	rail, road
Lao People's Democratic Republic	3	600–750	rail, road
Lesotho	2	500	rail, road
Malawi	3	600–2 300	rail, road
Mali	6	1 200–1 400	rail, road
Mongolia	4	1 700–6 000	rail, road
Nepal	2	1 100–1 200	rail, road
Niger	3	900–1 200	rail, road
Paraguay	4	1 200–1 400	rail, river, road
Republic of Moldova	2	800	rail, road
Rwanda	2	1 500–1 700	lake, rail, road
Swaziland	4	250–500	rail, road
Uganda	2	1 300–1 650	lake, rail, road
Uzbekistan	3	2 700	rail, road
Tajikistan	3	1 500–2 500	rail, road
The former Yugoslav Republic of Macedonia	1	600	rail, road
Turkmenistan	3	4 500	rail, road
Zambia	8	1 300–2 100	rail, road
Zimbabwe	3	850–1 550	rail, road

Source: Compiled by the UNCTAD secretariat based on data from the Economic Commission for Africa, Economic and Social Commission for Asia and the Pacific, ECLAC and the World Bank.

Figure 6.1. Cost to import (Dollars per container)



Source: Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (OHRLLS) 2013, based on World Bank Indicators.

Table 6.2. Number of days to export

	2005	2006	2007	2008	2009	2010	2011
Landlocked developing countries	49	49	48	48	46	44	43
Transit developing countries	30	27	26	25	24	23	23
All developing countries	32	30	29	28	27	26	26
World	28	26	25	25	24	23	23

Source: OHRLLS, based on World Bank indicators.

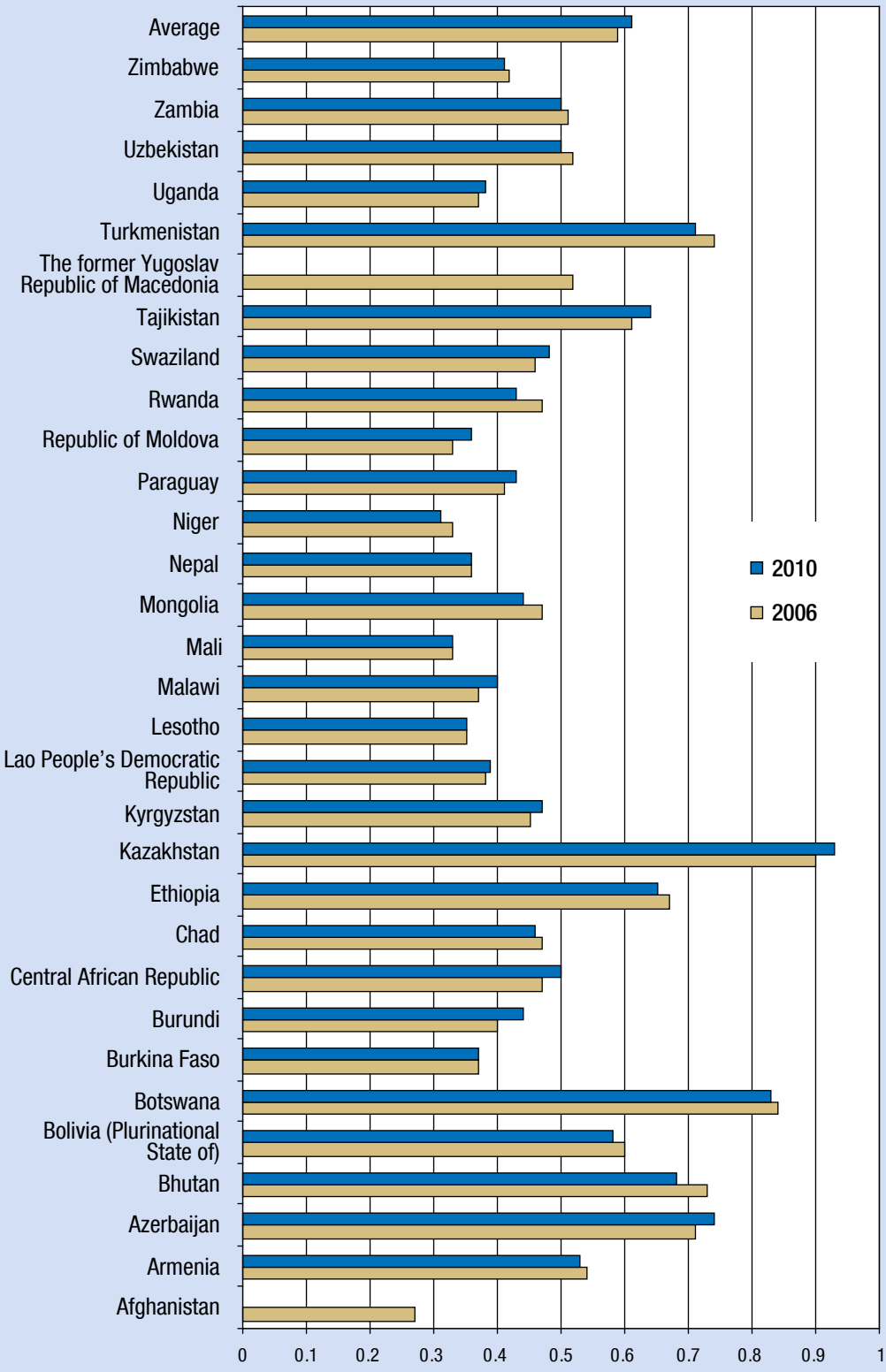
That these comparisons may exacerbate the actual difference and thereby exaggerate the handicap suffered by landlocked countries is important. But more importantly, because geographical distance – which cannot be shortened – is only one aspect of the problem, its relative weight should be more accurately assessed.

A close look at recently studied transit corridors shows that truck or rail operating costs (ton/km) in both transited and landlocked countries remain very close to or even lower than global standards or benchmarks in developed countries (UNCTAD, 2013). If carriers' costs are similar but freight paid by users is much higher than in comparable circumstances in other parts of the world, then distance per se cannot explain a transport cost of being landlocked showing surpluses of up to 60 per cent and an average of 45 per cent (figure 6.2). In other words, apart from the distance factor, the difference between the freight costs paid by traders in landlocked and coastal developing countries for an equivalent transport must be due to other factors not associated with the remoteness from the sea. This is precisely one of the relevant outcomes of the most recent field studies: there are factors other than distance and transport costs that make trade expensive for landlocked developing countries. These factors must be sought in the environment that surrounds transit operations, and regulatory frameworks are central among them.

2. Impacts of regulatory arrangements for transit

Borders may be more than just political boundaries. They also set the limits of different business and of technological and administrative cultures. Crossing a border entails entering distinctive market spaces where diverse requirements govern practices and different rules apply. Goods in transit and their carriers must adapt to these changing rules and standards. Research has shed some light on the consequences of rules and procedures being applied to cargoes in transit.

Figure 6.2. Transport cost of being landlocked (Ratio)



Source: OHRLLS, 2013.

Note: For example, a value of 0.5 means that the transport cost is 50 per cent higher in a landlocked country, compared with that of a representative coastal economy. Data for 2010 were not available for the former Yugoslav Republic of Macedonia and Afghanistan.

These studies also show that private sector operators, performing under the protection of restrictive regulatory schemes and obtaining rent-seeking monopolistic or oligopolistic positions, may become the strongest opponents to any type of facilitation efforts to bring transparency and simplicity to the transit system (Arvis et al., 2011). While road transport is currently a dominant mode of transport in transit systems serving landlocked countries, it is also a major factor for high freights paid for transport services by traders in these countries. Transit logistics costs, which include all the different steps of transit operations, could in fact be considerably reduced and become more environmentally efficient by either improving the efficiency of road transport operations or by designing systems leading to a modal shift to rail or river transport.

A recent study by the World Bank (Kunaka et al., 2013) shows that while great attention has been given to road infrastructures, in many cases the management of international road transport services continues being based on regulations favouring market access restrictions to protect national carriers. Thus many bilateral agreements governing road transport, including transit agreements, have turned into barriers for transit facilitation, even in integrated economic schemes. Although reciprocity and territoriality are key principles in bilateral instruments, agreements may provide for embedded operational restrictions stemming from the nationality of the operator or country of registration of the vehicles, traffic rights on certain routes, quotas governing the number of trips, cargo volumes, carrying capacity or numbers of permits for authorized carriers to undertake cross border transport. This leads to empty returns, distortions in available carrying capacities, transport supply chains interrupted or fragmented by mandatory transhipments, high freight rates unrelated to actual operating costs, long travel times, and in general, greater uncertainty in cargo flows.

B. THE COST OF TRANSIT UNRELIABILITY

As mentioned previously, distance also brings additional problems. The longer the road or the track, the higher the possibility of facing an unforeseen event resulting in transport disruptions. These likely incidents mean that there will be an increased uncertainty of transport times due to extended risks of mechanical failures, and accidents resulting from driver fatigue over long working hours or as a result of poor road or rail maintenance. Long routes are also a risk factor of theft and numerous stops due to checkpoints along the road, including weighbridges or stops at railway stations, and border crossings. However, many of these stops may also take place along fairly short distances and remain unrelated to official controls applied to transit transport. A natural exception must, however, be made for required rest stops for drivers along the route (Fitzmaurice and Hartmann, 2013).

As a result of these long delays and uncertainties concerning deliveries, traders in landlocked countries may have to bear considerable inventory costs that may sometimes be even higher than transport costs, reaching more than 10 per cent of the value of the goods (World Bank, 2013). The main sources of transit logistics costs are found in the relationships and interests governing the interactions of participants in the corridor supply chain: traders, transport companies, customs brokers, freight forwarders, banks, insurance companies, customs and other government agencies. Because these different parties have diverse and sometimes conflicting vested interests, the transit supply chain, which operates over long distances, is relatively complex and appears frequently as a fragmented sequence of a series of disconnected steps.

Another source of costs is linked to various official and informal payments levied along the transit route (Arvis et al., 2011). For example, “In many environments the complexity of the supply chain means that traders or their forwarders need to spend more time and staff to get things done, and this adds to the costs. It has been shown that in some cases, like Western Africa, these additional costs are on a par with the cost of trucking”. Transit chains are thus subject to inefficiencies and “even rent-seeking activities and corruption” (World Bank, 2013).

Supply chains, such as the transit systems connecting landlocked countries to seaports, need predictable events so that they can be organized and their sequence efficiently arranged. Global production value chains, which engage processes distributed over several geographically distant centres, also rely on strict delivery times for both dispatches and deliveries. The lack of predictability of transit delivery schedules may constitute the most important single obstacle for producers in landlocked countries to enter value chains other than at a very initial stage, as providers of the primary input.

1. Different views

Reliability may not have the same value or relevance for different parties intervening along the transit chain. For government authorities, it may mean having the certainty

that all relevant rules are fully applied. For customs, this may mean that fiscal risk, resulting from diversion to national markets, is minimized or fully covered through guarantee schemes. For agencies dealing with sanitary risks, certainty may mean the country remains safe from possible hazards to animal or vegetal contamination from goods in transit. For providers of transport and trade support services operating along a transit route, predictability may mean foreseeable volumes of freight allowing for investment and business development. For transport planners, infrastructure service providers and terminal operators, predictability may mean ensuring the best use of infrastructures and equipment and correctly size their development. For traders, predictability means transit times, including carriage and pre- and post-transport stages, and the logistics chain as a whole are safe and reliable in terms of quality and time; it also means the goods are in the hands of qualified operators and will reach their destination in good condition. For traders, the low reliability of transit supply chains is more worrisome than the average transit time. For instance, retail operators such as local supermarkets must maintain several months' inventory in landlocked developing countries instead of a few weeks in developed markets (World Bank, 2013).

This way, together with cost effectiveness and speed, reliability constitutes a primary objective to be pursued for the supply chain of transit services linking seaports and landlocked countries. As mentioned before, while the multiplicity of actors in the chain and their vested and sometimes conflicting interests remain a main cause of uncertainty, there are ways of turning silo-minded players into sharing a systemic collective understanding.

2. Seeking closer cooperation

As early as 2003, UNCTAD developed a supply chain management approach applied to transit transport services (Hansen and Annovazzi-Jakab, 2008) which, emulating assembly lines in manufacturing industry sectors, allowed for cluster development and transit corridors stakeholders' cooperation to improve transit operations. The methodology, based on the observation of the sequence of interventions in transit operations, showed that actors along the chain operate on a user–provider or client–supplier relationship. Although players' actions are interrelated and dependent on each other, they often do not occur in the way and time expected by the user of the service provided. This is mainly due to a lack of exchange of information between users and providers regarding their respective needs and goals, which in turn results from a lack of trust among the players. Such malfunctions result in two types of activities taking place in the operation of the transit chain: those adding value at a cost and those adding cost at no value. The latter translate into unnecessary delays, high costs and efficiency losses.

UNCTAD implemented this approach from 2003–2007 in the framework of a technical assistance project conducted in three pilot corridors. The project showed that clusters as cooperative platforms would allow stakeholders along transit corridors to acquire a comprehensive understanding of their respective roles along the whole transit supply chain. It also revealed the impact of the actions of their members on the performance of various stages along the transit chain as well as the benefits accruing from collectively optimizing the chain as a whole, as opposed to trying to maximize individual returns. Such collaborative schemes constitute an essential step towards building a new vision and common goals for the different players in transit systems with the common aim of ending the unreliability of transit operation.

3. Prospects for solutions

Even after 10 years of continuous efforts and detailed field research, and despite the progress achieved on many fronts, scepticism remains as to the possibility of finding effective and comprehensive solutions. Because possible solutions would probably antagonize transport sectors by breaking current protective freight allocation arrangements or by opening transport markets to foreigners (Arvis et al., 2011), some conclude that "feasible implementation strategies of corridor improvement are extremely constrained. On the one hand, a reform package should change the paradigm of corridor organization and introduce quality-based regulation of incentives. On the other hand, it should offer options to those numerous operators who are unlikely to meet the requirements of the reformed freight and transit system." They also argue that this would entail a "transition in market for services with some form of dual market structure, with a modern sector open to international competition and meeting the standards of a fast-track system, while the old procedures and control may remain available for the rest" (Arvis et al., 2011). The "rest" were sheltered by current arrangements dating from the 1970s to the early 1980s, in which many of the market transit systems favoured small independent operators, regardless of the quality of service they offered.

C. A MODEL FOR A CHANGE OF PARADIGM IN TRANSIT

In view of the possible reluctance from some sectors of stakeholders with vested interests in currently operating transit chains, chances are that the change of paradigm in transit corridor operations might need to come at least in part inspired by successful solutions in transport and logistics systems that differ from transit ones. The following proposal builds on three pillars sourcing respectively from the best practice model offered by the high performing integrated logistics of mining industry, the regular services offered by liner shipping maritime activities and an anchor inland station in the form of a freight consolidation centre also known as a dry port.

Briefly described, the proposed design framework model may be seen as a conveyor belt type system supplying continuous overland transport capacity between two locations along a transit corridor: a transit seaport and a connected inland dry port. The model could also apply between two inland dry ports if one is connected to a transit seaport. The basic rationale of this model and some general details are discussed below.

1. The concept of the conveyor belt in shipping

In 2011, a major shipping line started offering a daily call service aimed at guaranteeing a fixed time transportation service based on frequency, reliability and consistency. According to the company, these three basic, most highly sought qualities of any transport system were inspired by the proposal of one customer interested in having the flexibility of a continuous service available every day, which would make it possible to miss the ship one day, knowing that the next day it would be available again. The suggestion consisted of developing a conveyor belt type system in which goods could be delivered to the shipping line at any time, knowing that, in any case, they would depart soon after on ships calling on a regular basis. This way, and as in a conveyor belt operation, goods will reach the end of the belt at a given time. The shipping line subscribed to the idea and explained that linking "four ports in Asia (Ningbo, Shanghai, Yantian and Tanjung Pelepas) and three ports in Europe (Felixstowe, Rotterdam and Bremerhaven) amounts to a giant ocean conveyor belt for the world's busiest trade lane" (Maersk, 2011). After one year, and due to low volumes, the service had to be limited to five days per week; at the same time, it was extended to two additional other ports at each end of the belt.

The rationale of guaranteeing consistency, reliability and frequency is based on the fact that guaranteed and predictable transport times are more relevant than actual speed. This is what is actually missing in transit systems connecting landlocked countries with world seaports.

The conveyor belt concept for a regular transport service can be transposed in its essence from sea shipping to land transport transit services. It should function as a shuttle-like service, linking one transit port to one inland destination in a landlocked country or within the same coastal country as a part of a transit corridor.

2. The integrated logistics chain in mining operations

To a certain extent, the conveyor belt operation resembles that of integrated intermodal transport chains developed for minerals. These systems are developed to carry homogeneous cargo, each piece, pellet or material unit, of which is constant and identical to the other. That thinking was behind the development of the container as a standard box that would unitize cargo and make break-bulk loads appear uniform for transport operators The containerization of cargo is in its essence a method designed to ensure that different cargoes, fruits, electronics, garment or spare parts are handled with standard equipment and transport means. The container is a successful attempt to make general cargo behave like bulk cargo on a different scale, but allowing for continuous transport of loads through different means and via integrated transport logistics systems.

The conveyor belt approach developed by the shipping line mentioned above, now applied to land transit transport connecting the seaport and inland dry port, could operate based on the bulk-cargo-carrying model, making no distinction between the type and origin of boxes and assuring the shipper that the goods will be delivered at the other end of the belt, alternatively the seaport and the dry port, at a given time and on a regular basis.

Such an idea had been addressed more than 10 years ago in ECLAC studies on best practices for intermodal transport (Rubiato, 2001). The study looked at mineral extraction transport to port and shipping overseas for copper and iron ore, in Chile and Brazil respectively. While the Minera Escondida example described the use of pipelines ("slurry pipelines" or "mineroducts") to carry liquefied copper mineral, the Vale case (the company was called Vale Do Rio Doce at the time) boasted impressive performances for an intermodal system involving truck

carriages, car dumpers, rail transport and ocean shipping all linked and articulated around 160-wagon 6,400-ton-unit trains. These departed every 45 minutes from the mine, reaching the port of Tubarao 700 km away and achieving a total annual transport of 50 million tons or 140,000 tons a day; 300,000 dwt ocean vessels were being fully loaded in two to three days (see figure 6.3).

In terms of the lessons that mining systems could offer for application to other types of transport systems, the following are relevant for transit transport systems:

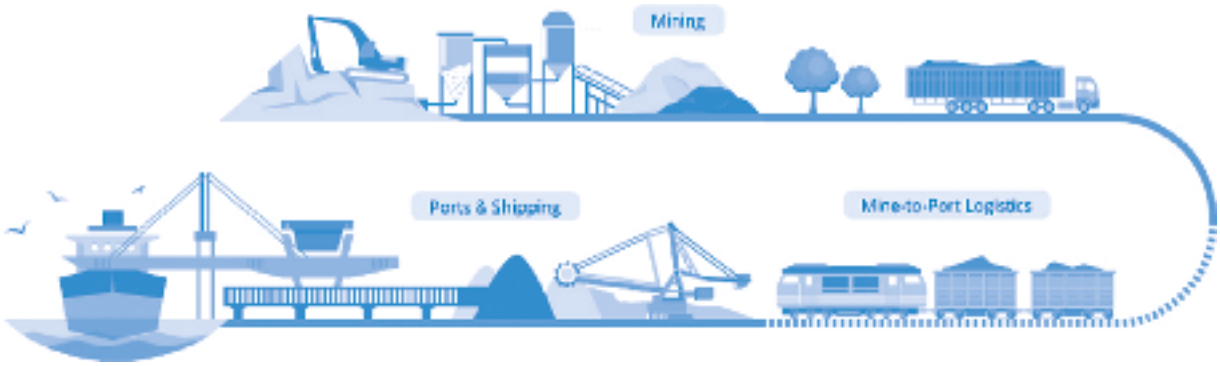
- *Ensuring continuous regular and large flows of cargoes* – Where large volumes of transit loads are not available, terminal operators at freight consolidation centres or dry ports (see box 6.1) may play a role in gathering necessary volumes to ensure the best use of transport means and infrastructures;
- *Organizing transport to serve traders* – Securing means of transport adapted to the specific product, flat trucks or wagons in the case of containers for transit purposes, for instance, is key to the cost of transport and the final value of the product but also with regard to its rhythms and periodicity of delivery, volumes and service of trade according to traders' needs;
- *Ensuring interconnectivity and interoperability between different modes of transport* – Compatibility between different modes is a basic condition in the operation of intermodal transport systems, such as those used in transit corridors The adaptation of means and the management of the system as a whole, ideally under a central command either by a single operator or a consortium, is one of the aspects better addressed in bulk transport logistics chains;
- *Operating with long-term contracts and long-standing partnerships* – Regular guaranteed cargo flows allow contracts and long-standing cooperation with different transport and logistics companies and enable investments in transport equipment and supply chain management technologies;
- *Designing the transport system in cooperation with all stakeholders* – Large mining companies maintain a close relationship with many suppliers and base logistics systems with all partners concerned in the operation.

3. Applying the mining operation model to a sea–land logistics chain

Although specific transit corridor operations would require a business process mapped and designed in detail for a tailored implementation of the transit belt model, successful operations would include the following key features:

- *Frequency of availability of service* – This should be adapted first to known existing and potential volumes and types of cargo, origins and destinations. The design should then be validated with pre- and post-carriage players, including cargo handling and terminal operators, government agencies such as customs and other intervening public agencies, at both ends, in the transit port and the inland dry port. Depending on estimated needs, the belt service could start on the basis of several rounds per week;
- *Choice in modes of transport* – Wherever rail transport would be available, it would be used as the primary mode to develop the system. Examples already exist in other parts of the world

Figure 6.3. Mineral ore extraction and intermodal transport chain



Source: Quintiq Inc., 2013.

of established regular connections between seaports and inland terminals, such as that of the Interporto in Bologna, Italy, where up to 15 trains a day, consisting of container-carrying flat wagons, link this freight village to different seaports in Italy and northern Europe. These regular services also operate as a conveyor belt. Cargoes would be dispatched from the dry port to final destinations by road or carried to the transit port in the case of outbound traffic. Wherever road transport remains the main or only choice, a system should be designed to allow free access to cargoes by qualified trucking companies eligible to function as trusted transit operators according to quality and reliability criteria;

- *Uninterrupted transit flows along the transit belt* – In order for transport of transit cargoes to be fully efficient, they should benefit from an uninterrupted transit status based on a trusted transit operator scheme (see box 6.2). This issue is discussed in recent UNCTAD research (2013) in which a three-pronged approach is proposed, including transit coordination by means of a corridor management arrangement, secure transit operators by means of risk-management and authorized operators customs schemes, and consolidation centres along the corridor.

4. Main drivers in developing a transit belt system

Three main sectors should benefit from a more predictable operation of transit system both in landlocked and transit countries:

Table 6.3. Presence of main container shipping lines in landlocked developing countries, 2013 (Number of offices)

Landlocked developing countries by region	Maerskline	MSC	CGM-CMA
Africa (14)	11	8	2
Asia (13)	1	4	-
Latin America (2)	2	2	2
Total (31)	14	14	4

Source: UNCTAD secretariat – Websites of the above-mentioned shipping companies. It would appear that the following landlocked developing countries do not have a local subsidiary office for any of the three largest container shipping lines: Afghanistan, Bhutan, Tajikistan, Lesotho and Swaziland (probably served by agencies based in neighbouring South Africa).

- *Government agencies and control authorities* dealing with trustable and well-controlled operations should find benefits in terms of confidence in trade sectors, which would release important highly qualified resources towards more troublesome traffic. Due to the expected higher volumes of orderly and better-monitored trade, revenues should also increase. Last but not least, a transit belt system offers an opportunity to build a smoothly operating, secured system on the basis of PPPs in both landlocked and transit countries;

- *Traders and manufacturers* in landlocked countries will be the main beneficiaries of reliable and predictable transit connections. A major factor in the possibility to integrate a global value chain resides in a performing logistics system, which in turn requires a last-mile link, in our case, the land transit one. Inventory cost would also benefit from reliable logistics, which would diminish the need for keeping large stocks. Over time, and through better returns on investment for carriers, transport costs should also decrease, resulting in lower freight rates. Predictability also permits stable arrangements, including long-term contracts between shippers and transport service providers, leading to investment in fleets and handling equipment by carriers and freight terminal operators;

- *Liner shipping companies and terminal operators, including seaports and dry ports* – Initially, in particular those operating containerized trade, would find a significant practical advantage in being able to see the containers leave and return to the port on schedule. A straightforward continuous operation would allow boxes to exit the port over shorter dwell times, thereby increasing the handling and storage capacity of sea terminals, and ultimately increasing the efficiency of vessel operations in ports. Finally, higher traffic volumes are of direct interest to sea carriers, eager to attract cargoes from and to inland markets, as shown by their current presence in landlocked countries (see table 6.3) .

5. Prerequisites to support the establishment of a transit belt system

At the conceptual design stage, which would need to be adapted to local needs and capacities in each case, a transit belt system requires three components to be in place and ready for operation:

Box 6.1. Inland terminals

Inland terminals have become an intrinsic part of the transport system, particularly in gateway regions with a high reliance on trade. The integration of maritime and inland freight distribution systems has favoured the setting of inland ports to integrate with the maritime terminal and support efficient access to the inland market both for inbound and outbound traffic. Since the inland terminal is essentially an extension of some port activities inland, the term "dry port" has gained acceptance. However, there seems to be no consensus on the terminology, resulting in a wide range of terms such as dry ports, inland terminals, inland ports, inland hubs, inland logistics centres and inland freight villages. Regardless of the terminology used, three fundamental characteristics are related to an inland node:

- An intermodal terminal, either rail or barge that has been built or expanded;
- A connection with a port terminal through rail, barge or truck services;
- An array of logistical activities that supports and organizes the freight transited.

The functional specialization of inland terminals has been linked with the cluster formation of logistical activities. They have become excellent locations for consolidating a range of ancillary activities and logistics companies. Inland terminals are part of a port regionalization strategy supporting a more extensive hinterland. Each dry port is confronted with a local or regional economic, geographical and regulatory setting that not only defines the functions taken up by the dry port, but its relations with seaports. Best practices can only be applied successfully by taking into account the relative uniqueness of each dry port setting.

Source: http://people.hofstra.edu/geotrans/eng/ch4en/appl4en/ch4a4en.html.

Box 6.2. Proposed trusted transit operator scheme

Authorized economic operators, an international production and distribution model set out in the World Customs Organization's SAFE Framework of Standards to Secure and Facilitate Global Trade, would provide a suitable option for developing a mechanism for customs transit procedures tailored to the needs of landlocked country traders. Some basic principles could apply to transit operators, including traders, carriers and logistics operators, in the framework of a regional trusted transit operator programme:

- Automatic inclusion in the programme: Trusted operators with established good compliance histories should be automatically inducted into such programmes upon periodic examination of physical security by the competent governmental authority;
- Targeting the entity, not the transaction: Border management procedures should be designed to focus on risk of the trusted transit operator ending the transaction-by-transaction review;
- Regional certification: Customs authorities within regional schemes should agree to accept a single trusted transit operator application for all the entities the applicant may list in the regional community and to recognize such status granted in partner countries as applicable in all member countries;
- Coordinated border management: Trusted transit operator status should be granted on coordinated grounds by relevant border management agencies to avoid duplicative procedures at borders;
- Assurance of uninterrupted transit: Consignments from trusted transit operator traders to trusted transit operator traders through trusted transit operator logistics providers should not be interrupted by any agency for any reason except in the case of clear evidence of a threat or violation. Assurance of uninterrupted transit should be adopted as a basic feature of all trusted transit operator programmes and be supported by verifiable public metrics.

Source: Adapted from International Chamber of Commerce Draft policy position paper on authorized economic operators (forthcoming).

An inland freight terminal or dry port in the landlocked country or in the transit country along the transit corridor and physically linked to the transit seaport through adequate transport systems (see box 6.1);

A regulatory scheme allowing the uninterrupted transit of goods based on a trusted transit operator scheme that would need to be adopted at the regional or bilateral level (see box 6.2);

A logistics operator scheme ensuring the smooth integration of the different stakeholders and various stages of the transit chain, including public and private players. Wherever transit corridors and corresponding corridor management authorities exist, these would constitute the natural counterpart for the design and development phase of the transit belt system. Corridor authorities could contact traders, logistics operators and shipping lines to design an economically viable system. This may require formalization through bilateral or regional instruments.

D. CONCLUSIONS

Thanks to the Almaty Programme of Action, the past 10 years have brought considerable progress in terms of knowledge and practical solutions to improve the access of landlocked countries to sea shipping services. Detailed field research has shed light on the rationale and high complexity of transit operations, their fragmentation resulting from stakeholders' individual interests and sometimes the conflicting relationships linking business and the public sector.

Paradoxically, while one of the most important advances in the analysis was achieved by applying a systemic supply chain approach to transit operations, applied solutions have remained partial, affecting only some stages of the transit chain. Improvements have mostly benefited well-established and better-structured administrations such as customs or port authorities. These have benefited from modern technologies, improving both management techniques and processes equally, through privatization in ports or the ASYCUDA programme in customs. In most cases, however, other sectors, notably land transport industries and ancillary services central to the efficiency of transit operations, i.e. customs brokers and freight forwarders, lag far behind.

The time has come to design a new transit system paradigm for landlocked countries enabling them to operate along more reliable transit supply chains. The transit belt system approach would involve the design of a system open to all transit cargo, based on a trusted transit operator scheme guaranteeing uninterrupted seaport–hinterland transit and vice versa. The proposed approach would not only ensure reliability of the transit operation but would also bring higher quality services and lower traffic with higher volumes, thereby reducing the carbon footprint.

The 10-year Review Conference on the Implementation of the Almaty Programme of Action to be convened in 2014, as decided by the General Assembly in its resolutions 66/214 and 67/222, offers a good opportunity to include the design of such a paradigm in a new global framework for transit transport cooperation for landlocked and transit developing countries in the next decade and to ensure improved access of landlocked developing countries to international maritime transport services.

Transit systems can learn best practices from other transport and logistics systems, such as the maritime industry or mineral ore value and transport chains and combine their own experience to develop reliable and predictable transit logistics chains to increase the shipping connectivity of landlocked developing countries.

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