

# Improving Trade and Transport for Landlocked Developing Countries

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World Bank contributions to implementing the Almaty Programme of Action



A report for the mid-term review  
October 2008

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# Preface

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The UN General Assembly called for a mid-term review of the Almaty Programme of Action on October 2–3, during its 63rd session. This report, contributed by the World Bank, is based on the outputs and experience of current World Bank projects, notably a program on Trade and Transit Facilitation, supported by a grant from the Bank Netherlands Partnership Program. It summarizes the presentations and discussions at several preconference workshops organized jointly by the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries, and the Small Island Developing States and the World Bank, including expert meetings on June 2–3, 2008—first

at UN headquarters in New York and then at the World Bank in Washington—on ways to reduce the obstacles to landlocked countries' trade and growth.

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# The Almaty Programme of Action (2003)

The Almaty Ministerial Conference (2003) was the first global venue to specifically address the problems of landlocked developing countries (LLDCs). It brought together Landlocked and Transit Developing Countries, Donor Countries, and International Financial and Development Institutions. The Conference and the Programme of Action adopted at the Conference address the access problem of LLDCs, with the following seven objectives:

- Secure access to and from the sea by all means of transport according to applicable rules of international law.
- Reduce costs and improve services so as to increase the competitiveness of their exports.
- Reduce the delivered costs of imports.
- Address problems of delays and uncertainties in trade routes.
- Develop adequate national networks; reduce loss, damage, and deterioration en route.
- Open the way for export expansion.
- Improve safety of road transport and security of people along the corridors.

In order to reach those objectives, the Programme of Action highlighted five priority policy areas for landlocked and transit countries to address:

- *Transit policy and regulatory frameworks:* landlocked and transit countries to review their transport regulatory frameworks and establish regional transport corridors.
- *Infrastructure development:* landlocked countries to develop multimodal networks (rail, road, air, and pipeline infrastructure projects).
- *Trade and transport facilitation:* landlocked countries to implement the international conventions and instruments that facilitate transit trade (including the WTO).
- *Development assistance:* the international community to assist by providing technical support, encouraging foreign direct investment, and increasing official development assistance.
- *Implementation and review:* all parties to improve their monitoring the implementation of transit instruments and conducting a comprehensive review of their implementation in due course.

**Source:** Almaty Programme of Action: Addressing the Special Needs of Landlocked Developing Countries within a New Global Framework for Transit Transport Cooperation for Landlocked and Transit Developing Countries (2003).

# Summary

This report offers the World Bank's perspective on progress in implementing the Almaty Programme of Action. Most of the information comes from an ongoing World Bank knowledge program for trade and transit facilitation. The report provides an update on the access of Landlocked Developing Countries (LLDCs) to global markets since the Almaty Declaration in October 2003, highlighting new directions to reach the Almaty objectives.

Since the Almaty Conference international support to the LLDCs has increased substantially. Lending by the World Bank quadrupled—to more than US\$1.5 billion last year, with a substantial pipeline of new projects for the next five years. This assistance includes corridor projects, customs reform, multimodal transport, railroad projects, and restructuring airport and aviation services. Increasingly the Bank is linking lending with advisory activities to stimulate change in such areas as trade facilitation, customs, and transit systems.

Between 2003 and 2007 the export value of LLDCs more than doubled, while that of transit countries increased rather less, as global exports rose 60 percent. Per capita incomes of LLDCs increased by about 28 percent, slightly less than the 33 percent increase of the transit countries but still well above the global average of a little more than 10 percent. But in absolute values LLDC trade and incomes still lag far behind those of the transit countries and the global average. In addition, the recent increases in LLDC trade reflect rising commodity prices, with little achieved in product diversification and export competitiveness.

Even with freedom of transit, regional and bilateral agreements, and trade facilitation reforms, LLDCs are still hampered in their access to markets, since they depend on their

neighbors for their trade. The Logistics Performance Index, a measure the World Bank developed to score logistics systems, consistently ranks landlocked countries lower than their coastal neighbors. The differences are greatest in East Asia, least in Sub-Saharan Africa. The more detailed data behind the LPI shows that being landlocked adds about four days to the time for exports to reach a port but about nine days for imports. The import times show wide variation, indicating the uncertainties in transit times are perhaps more of a barrier to trade growth than the average times.

Corridor indicators detail where the delays and variation in transit times occur, and how the costs of transit for landlocked countries compare with those for coastal countries. For both the largest delays are in bringing containers through the port system, closely followed by border crossings. Despite the long and variable transit times, the maritime share of a container traveling between a landlocked and a developed country makes up more than half the total. For most landlocked countries the cost of the maritime share of the total is also more than half. For six corridors with data, the cost of transporting a container from an LLDC to a developed country port was about US\$4,500, about 20 percent more than from a coastal country.

The studies behind the corridor indicators show that distance and quality of infrastructure also impede LLDC trade, but not much more than for inland destinations in large coastal countries. Rent-seeking activities, inadequate transport markets, and times spent at borders lower the productivity of services and bump up the prices, especially for trucking. But the main sources of higher costs are unreliable import and export chains—due to inadequate transit procedures, overregulation, multiple controls,

and poor service. Transit in Europe, by contrast, has evolved into effective and seamless systems, which allow for smooth door-to-door logistics across land borders.

Most trade facilitation impediments have to do with the procedures and services in the transit country and the weak incentives for public and private stakeholders to facilitate transit and deliver good service. Many needed measures are not specific to landlocked countries and are often more beneficial to the transit countries—such as improving transport services, notably trucking, and reforming ports and customs to reduce delays and costs.

For transit countries to address the trade of their landlocked neighbors, they need to see some advantages to their own economies. Most of the advantages come from providing the transit transport and associated services at marginal cost, and from capturing economies of scale in the port, maritime, and aviation services that serve their own trade. Transit countries will also facilitate the trade of landlocked countries when the products complement those of their own economy rather than compete with them.

In addition to the investment and technical assistance that are part of the Almaty Programme of Action, a high priority is to design and implement transit regimes, which with few exceptions are either absent or badly designed

and implemented. The transit system developed in Europe over the last 50 years has been expanded geographically to include many landlocked countries of Eastern Europe, bringing advantages to all participating countries. But it has proven difficult to implement this or a comparable system or to develop alternatives in other regions. That is why the World Bank has been piloting, with its partners, a new approach to re-engineering transit systems.

A second priority is for landlocked countries to make more use of air freight as a way to overcome what has been called the tyranny of distance. While air freight is costly, it does have the advantage of speed, and for some products this can overcome the penalty of cost. But for landlocked countries to get started in using air freight they need to use the freight capacity in aircraft providing passenger services. With few exceptions the transit countries have many more passenger services than their landlocked neighbors. By taking advantage of these services, their financial sustainability can be increased to the benefit of the transit country.

A third priority is cross-country and cross-regional monitoring of trade corridors, including all dimensions of costs, delays, and reliability, repeated at frequent intervals. This information can inform policy makers and stakeholders and sustain the drive for improvements.

# Introduction

The Almaty Programme of Action is predicated on the fact that landlocked developing countries had grown more slowly than other low-income countries and that unless their trade competitiveness improved significantly, this situation was likely to continue. Major factors underlying the slow trade growth were believed to be the low quality and inadequate capacity of transport infrastructure and the resulting high cost and unreliability of transport services between these countries and world markets.

The Millennium Development Goals agreed by all UN member states in September 2000 included a commitment to address the special needs of landlocked countries. In 2001 the General Assembly established the post of Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States to promote understanding and support for these countries.

A ministerial intergovernmental conference in pursuit of these commitments was held in August 2003 in Almaty, Kazakhstan. The conference agreed to an Almaty Programme of Action calling for joint efforts by transit and landlocked countries—with substantial technical and financial assistance from other countries—to revise their regulatory frameworks affecting trade movements and to improve their trade-related infrastructure.

In line with the Programme of Action and requests from member countries, the World Bank intensified its program of policy advice and financial support for landlocked developing countries (LLDCs) as part of its broader program to improve the trade competitiveness of all developing countries. Nearly three-fifths of the 81 countries now eligible for assistance from the World Bank's soft-loan arm, the International

Development Association (IDA), are directly involved in efforts to reduce the adverse consequences of countries' lack of direct access to the sea. Just over half are landlocked, and the rest have infrastructure used by landlocked neighbors for transit.

This report summarizes the World Bank's contribution to implementing the Almaty Programme of Action and its understanding of the causes and potential remedies of the trade competitiveness consequences of being landlocked. It has seven sections. The first summarizes what is known about the economic impacts of being landlocked on trade and growth, and their improvements since Almaty.

The second section provides information on the logistics and facilitation performance of LLDCs compared with their transit neighbors and other developing countries, based on analyses at the country level, and comes mostly from the recently developed Logistics Performance Index.<sup>1</sup> The third section analyzes the sources of high access costs and the role of inefficiencies in the supply chain of products imported and exported by LLDCs.

The fourth section brings a new focus on the transit countries as a potential source of increased trade competitiveness for the landlocked countries that depend on them. Facilitation depends on the political economy of trade and transport systems between countries. Transit countries need to see an economic and political advantage in facilitating transit trade that goes beyond pressure to comply with international obligations not to discriminate against their landlocked neighbors.

The fifth section provides more analysis of one of the greatest impediments to trade and transport from landlocked countries: the technical arrangements for transit. In addition to

transport services and infrastructure, efficient transit regimes must allow the passage of freight based on documents, seals, and bonds that guarantee payment of customs and trade duties if the goods do not exit the transit country on schedule. Despite the obvious benefits of such schemes, designing, signing, and implementing them has proven surprisingly difficult.

The sixth section outlines some steps recently initiated by the World Bank in conjunction with others to complement and catalyze the implementation of the Almaty Programme of Action. These activities include producing corridor performance indicators, undertaking trade and transport facilitation audits, finding ways to make facilitating transit trade more

attractive to transit countries, exploring the potential for expanding transit guarantee systems, and exploring the circumstances in which air freight can be used as an alternative to land and maritime transport.

The conclusion proposes a series of themes, and areas for assistance, that should receive particular attention during the second half of the implementation period to achieve the objectives of the Almaty Programme.

An annex summarizes the lending, technical assistance, and knowledge activities undertaken as part of World Bank projects to contribute to the Almaty Programme of Action, and to help improve the competitiveness of landlocked countries.



# The economic impacts of being landlocked

*This section provides evidence of the trade performance of landlocked developing countries compared with others, especially their transit neighbors. It finds that since the Almaty Programme of Action was announced, the total trade and GDP per capita of LLDCs has increased faster in percentage terms than the transit country and global averages. But much of the LLDC growth can be attributed to increases in commodity prices. For the per capita income of LLDCs to come closer to the global average, their per capita incomes will have to grow even faster than they have done recently.*

The world has two large concentrations of landlocked developing countries. The 15 countries in Sub-Saharan Africa have a population of more than 200 million, nearly 30 percent of the region's total. Sudan and the Democratic Republic of Congo, which account for a further 12 percent of the region's population, are also sometimes considered to be landlocked given their very restricted access to deep-water seaports. The nine landlocked countries in Central Asia, and a few small states in Eastern Europe, have a population approaching 80 million people, or about 17 percent of the region's total.

Less than 3 percent of the population in South Asia (Nepal and Bhutan) and Latin America (Bolivia and Paraguay) are in landlocked countries. The two landlocked countries of East Asia (Lao People's Democratic Republic and Mongolia) account for less than half a percent of the region's population. No countries are landlocked in the Middle East and North Africa.

For the period before the Almaty Conference there was compelling evidence that being landlocked sharply depressed both per capita income and its growth.<sup>2</sup> Data for 92 low and middle-income countries for 1980–96 show

that the per capita income of landlocked countries grew about 1.5 percentage points slower per year than those not landlocked.<sup>3</sup> Commercial quantities of natural resources improved the situation of some landlocked countries. Over 1960–2000 resource-scarce landlocked countries outside Africa averaged 1.5–2.0 percentage points slower growth in per capita income than nonlandlocked countries.<sup>4</sup> Per capita income growth in the resource-scarce landlocked countries of Sub-Saharan Africa (except Botswana, Zambia, and Zimbabwe) also fell short by about the same amount.

Since 2001 (the base year for much of the evidence presented at the Almaty Conference) the average per capita income of the 29 landlocked countries (those with sufficiently complete data) has increased by about 5.3 percent a year, far above the global average of 1.9 percent and even above the 4.2 percent for the 44 transit countries with data.<sup>5</sup> The average growth rate for all low-income countries was about 4.8 percent, so again the landlocked countries performed well in comparison. But in absolute per capita incomes, the LLDCs have not kept pace with the other groups of countries other than their low-income peers (table 1.1).

## Potential per capita income increases

In 2006 the per capita income of LLDCs was only 13 percent of the global average (table 1.2). If the objective of the Almaty Programme was interpreted as increasing this to 25 percent of the global average by 2013, and if the global average were to continue growing at about 1.9 percent a year, LLDC per capita income would need to surge by 15 percent a year, clearly infeasible. To reach close to 20 percent of the global average, LLDC per capita incomes will have

**Table 1.1 GDP per capita and its growth, 2001–06**

Income group	Average per capita income (2006 US\$)			
	2001	2006	Increase	Growth (percent)
High income	32,800	35,700	2,900	1.7
Upper middle income	5,500	6,600	1,100	3.5
Lower middle income	1,500	2,100	600	6.9
Low income	500	670	170	4.8
Landlocked developing countries	760	970	210	5.3
Transit	1,500	2,000	500	4.2
World	6,700	7,400	700	1.9

Note: Data for LLDCs exclude Azerbaijan, Botswana, Kazakhstan, and Zambia. In 2005–06 these countries had a very high proportion of exports of just one commodity: Azerbaijan (76 percent) and Kazakhstan (69 percent) petroleum, Botswana (73 percent) precious stones, and Zambia (65 percent) copper (UNCTAD 2008).

Source: World Bank Development Data Platform.

**Table 1.2 Potential increases in average per capita income, 2006–13**

Country group	2006 (US\$)	Growth rate (percent)	2013 (US\$)
Landlocked developing countries	970	8.0	1,700
Transit	2,000	5.0	2,800
World	7,400	1.9	8,500
LLDC world share (percent)	13.0	n.a.	19.6

n.a. is not applicable.

Note: Data for LLDCs exclude Azerbaijan, Botswana, Kazakhstan, and Zambia. In 2005–06 these countries had a very high proportion of exports of just one commodity: Azerbaijan (76 percent) and Kazakhstan (69 percent) petroleum, Botswana (73 percent) precious stones, and Zambia (65 percent) copper (UNCTAD 2008).

Source: Analysis by World Bank International Trade Department.

**Table 1.3 Landlocked developing countries: merchandise trade, 2001–06**

Country group	Merchandise trade			Merchandise export trade		
	Share of world trade (percent)		Annual growth (percent)	Share of world trade (percent)		Annual growth (percent)
	2001	2006		2001	2006	
Low income	2.1	2.2	21	2.0	2.7	20
Middle income	19.7	20.3	20	20.6	27.4	21
High income	78.2	77.5	12	77.4	69.9	12
Landlocked developing countries	0.5	0.6	21	100.0	100.0	14
Transit	11.9	12.6	24	0.5	0.8	24
World	100.0	100.0	14	12.7	20.1	24

Source: Comtrade data.

to grow about 8 percent a year, a formidable challenge but feasible. Even this would not be enough to reduce the absolute difference between global per capita incomes and those of LLDCs. Indeed, the deficit would increase more than US\$300.

## Increases in trade

Part of the explanation for the low per capita incomes of LLDCs is their low participation in world trade. About a third of them have less than US\$40 per capita in exports, but less than 5 percent of their transit neighbors fall to this level. Fewer than one-third of LLDCs have imports greater than US\$100, while only one transit country (Somalia) has imports below this threshold.<sup>6</sup>

The per capita incomes of LLDCs have increased since the Almaty Conference. Their total trade and share of world trade have accelerated even more. Since 2001 the value of international trade of LLDCs has increased by more than 170 percent (an average of 21 percent a year), a growth slightly less than the 182 percent (23 percent a year) of the transit countries but much higher than the global average of 90 percent (14 percent a year). The LLDC share of world trade remains small at a little under 0.6 percent. But this is a significant proportional increase (about 10 percent) from the 2001 share of just over 0.5 percent. The transit countries have a much higher share at about 6.4 percent, a slight increase since the 2001 share of 6 percent.

More significant than the total trade of LLDCs are those of exports, where their post Almaty performance has been even better. The export value of LLDCs has increased more than 190 percent (24 percent a year) compared with 148 percent (19 percent a year) for the transit countries and the global total of 90 percent (or 14 percent a year). The export share in the total trade of LLDCs has increased from 45 percent in 2001 to more than 50 percent by 2006. Another reflection of the same trend: LLDCs achieved a small overall trade surplus for the first time in recent history in 2006.

## Commodity prices and volumes

Much of the increase in the per capita income and the export performance of LLDCs has come from increases in commodity prices and in the volumes exported by LLDCs. It is difficult to generalize the impact on the exports of all LLDCs because of the wide range of commodities and products. But trade data show two relevant trends:

- Higher commodity prices contributed about two-thirds of the growth in value of exports from LLDCs between 2001 and 2006. The rates of increase are unlikely to be sustained (and for some the prices have already started to fall). So, LLDCs will need other ways of increasing or at least sustaining their GDP per capita growth.
- The diversification of exports has not changed much since implementation of the Almaty Programme. For more than 20 percent of LLDCs, three products make up 90 percent or more of the total value of their exports, and for another third of the countries the

top three products make up more than 75 percent. There are some notable and encouraging exceptions, including Nepal, Moldova, Swaziland, and Uganda, where the top three products account for less than half the total export value. This has come about through diversifying into manufactured products and converting some basic mineral and agricultural exports into higher value products. These examples show how other LLDCs might increase the total value of their exports while reducing their dependence on a small range of basic commodities.

# 2 The logistics performance of landlocked developing countries

*This section provides evidence on the logistics performance of landlocked countries and their transit and coastal neighbors, as well as on factors explaining differences in performance.*

The World Bank launched a Logistics Performance Index (LPI) in 2007 (box 2.1).<sup>7</sup> The LPI and its component indicators are based on information from multinational freight forwarders and the main express carriers with worldwide operations. They provide an international benchmark for comparing logistics performance and effectiveness in facilitating trade across 150 countries. This information completes and expands the one found with longer established competitiveness datasets

such as *Doing Business*<sup>8</sup> and *Global Competitive Index*.<sup>9</sup>

Tables 2.1 and 2.2 compare the logistics performance of landlocked and coastal countries, globally and regionally.

From the comparisons of logistics performance of landlocked and coastal countries by region, it appears that:

- For each region other than Europe, the logistics performance of coastal countries is much better than that of landlocked countries.
- By contrast European landlocked countries are not at a disadvantage compared with their coastal transit country. This is to be linked to the existence of smooth transit systems through coastal countries, with delayed clearance at destination.
- The relative performance of landlocked countries is worst in South Asia (43 percent penalty when compared with coastal countries) and East Asia (20 percent). The contrast is larger as the main transit countries (India, China) are emerging economies with already sophisticated logistics systems, yet the transit arrangement serving LLDCs are known to be more restrictive in Asia (section 5).
- The difference between landlocked and coastal countries is still significant but not as sharp in Africa. Coastal countries, with the exception of South Africa, also experience such serious problems as port congestion, which reverberate on the countries in the Interior.

Table 2.2 provides some of the background data that goes into calculation of the LPI

## Box 2.1

### Assessing logistics performance

The overall Logistics Performance Index (LPI) is a composite index based on performance of countries on six dimensions (indicators) of trade-related logistics performance. The indicators are:

- *Efficiency of customs* and other border agencies in expediting cargo clearance.
- *Infrastructure efficiency* (in the quantity and quality of transport infrastructure and information technology infrastructure for logistics).
- *Ease and affordability* of arranging international shipments.
- *Competence of the local logistics industry*, where the freight forwarding operations are subcontracted to domestic agencies by the global logistics companies.
- *Ability to track and trace international shipments* while the shipment is en route.
- *Timeliness of shipments in reaching destination*.

Logistics performance is evaluated on a 5 point scale, with 1 the lowest and 5 the highest.

This data is corroborated by factual information from domestic sources, for instance on time, cost, or effectiveness of process and services.

On average one LPI point less on this scale is the equivalent of six days more to import and three days more to export. The highest ranked country is Singapore (4.19), the lowest Afghanistan (1.21).

calculations for three regions, and a comparison of landlocked and coastal countries for two of them.

From these data one can see that:

- The transport infrastructure of landlocked countries in Sub-Saharan Africa is a slightly lesser penalty (only 7 percent worse than for coastal countries) than other dimensions of the LPI such as the competence of services or the trade processes (on average about 10 percent worse than coastal countries), which reflects the hierarchy of constraints as they appeared in case studies or projects (section 3 and 4).
- Interestingly the data for time to export or import in Africa suggest the same conclusion:
  - Being landlocked adds four days to exports or the fastest imports, which corresponds to the distance that can be covered given the current infrastructure, plus clearance at destination.
  - However the average imports take much longer to transit—about nine days—which shows that the bulk of delays happen with the transit system.
  - Customs clearance itself does not take more time in landlocked countries, also highlighting the transit procedure, which takes place before clearance.
- The average for Africa covers wide disparities. The median import time for landlocked countries in Central and Eastern Africa can be over four weeks.
- For landlocked countries in South Asia, transport infrastructure is a serious constraint (50 percent worse for landlocked than coastal countries), but again it is not a significantly greater problem than the border and services components of the LPI (which on average are about 42 percent worse for landlocked than for coastal countries). Transit time is also disproportionately high for those countries.

**Table 2.1** Logistics Performance Index of coastal and landlocked countries, 2007

Region	Regional average	Landlocked countries	Coastal countries	Coastal advantage over landlocked (percent)
World	n.a.	2.42	2.80	16
Sub-Saharan Africa	2.35	2.22	2.43	9
East Asia and the Pacific	2.58	2.17	2.59	19
Latin America and the Caribbean	2.57	2.44	2.58	6
South Asia	2.30	1.84	2.64	43
Europe <sup>a</sup>	2.64	2.64	2.63	0

n.a. is not applicable.

a. Central Asia is excluded because all the countries in the subregion are landlocked. Landlocked countries in Europe include, in addition to the high-income countries of Austria and Switzerland, countries that became independent in the 1990s, such as Armenia, Belarus, Czech Republic, Hungary, Moldova, Serbia, and Slovak Republic.

Note: Logistics performance is evaluated on a 5 point scale, with 1 the lowest and 5 the highest.

Source: World Bank n.d. (<http://www.worldbank.org/lpi>).

**Table 2.2** Regions with poorly performing landlocked countries

Background data	Sub-Saharan Africa		Central Asia	South Asia	
	Landlocked	Coastal	Landlocked	Landlocked	Coastal
Overall LPI	2.22	2.43	2.25	1.84	2.64
Selected LPI components					
Logistics competence	2.21	2.45	2.18	1.84	2.69
Infrastructure	1.97	2.11	1.98	1.61	2.41
Customs and trade processes	2.10	2.30	2.04	1.69	2.34
LPI input data					
Customs clearance (days) <sup>a</sup>	3.2	4.7	n.a.	2.6	2.2
Physical inspection (percent) <sup>b</sup>	62	42	n.a.	56	27
Possibility of review (percent) <sup>c</sup>	52	19	n.a.	33	30
Lead time to (days)					
Export (median) shipper–port	11.8	6.2	n.a.	6.5	2.5
Import (median) port–consignee	18.4	9.3	n.a.	14.7	3.3
Import (10 percent best) port consignee	9.1	5.0	n.a.	11.0	2.5

n.a. is not applicable

a. Customs clearance is days between customs' acceptance of declaration and clearance.

b. Physical inspection shows the proportion of respondents' import consignments inspected.

c. Possibility of review shows the proportion of survey respondents believing that they would be able to secure review of a customs decision they disagreed with.

Note: LPI is Logistics Performance Index.

Source: World Bank n.d. (<http://www.worldbank.org/lpi>).

Two landlocked countries in Sub-Saharan Africa, Mali and Uganda, appear among the best performers in the region in expanding exports of goods and services over a fairly long period and in recent times. Uganda's exports rose from 7 percent of GDP in 1990 to 12 percent in 2003 and 14 percent in 2006,

**Table 2.3 Importance of service quality in supply chain competitiveness**

Country	Infrastructure rating	Logistics competence	Timely Delivery	Overall LPI score	Rank in Africa
Uganda	2.17	2.55	3.29	2.49	8
Mali	1.90	2.21	2.88	2.29	21
Ghana	2.25	1.75	2.50	2.16	30
Tanzania	2.00	1.92	2.27	2.08	35

Source: World Bank n.d. (<http://www.worldbank.org/lpi>).

and Mali's from 17 percent of GDP in 1990 to 26 percent in 2003 and 30 percent in 2006. Mali and Uganda are among the top performing countries in the region based on their LPI score, outranking some of the coastal countries (table 2.3).

## Understanding access to landlocked countries

*Traders in LLDCs may be confronted with bad infrastructure or long distances to market, but the main sources of higher cost have to do with rent-seeking, inefficient markets for services such as trucking and inadequate transit procedures. On top of the direct costs, traders also have to cope with the low reliability of the logistics chain in LLDCs.*

Regarding the source of cost and the importance of the organization of the transit supply chains, recent research, surveys, and experience from projects point to the same conclusion as the logistics indicators. They also provide a more detailed micro-economic understanding.

### **Beyond infrastructure**

The traditional culprit for the high costs and low competitiveness of landlocked countries is the low availability and quality of transport infrastructure, especially road and rail. Building and maintaining adequate infrastructure in both the transit and the destination country is widely accepted and indeed stands prominently in the Almaty Programme.

Ten years ago, research based on the internationally available indicator relating to the quality of transport infrastructure reached the conclusion: “An improvement in own and transit countries’ infrastructure from the 25th percentile to the 75th percentile overcomes more than half of the disadvantage associated with being landlocked.”<sup>10</sup> But improvements embraced operations and physical equipment, since no separate indicators were available.

Thanks to the contribution by donors since the beginning of the decade, the state of most road corridors is much better. All capital cities in LLDCs are accessible from their gateway

port or their main trading partner within 4 days, down from 10 days or more.<sup>11</sup>

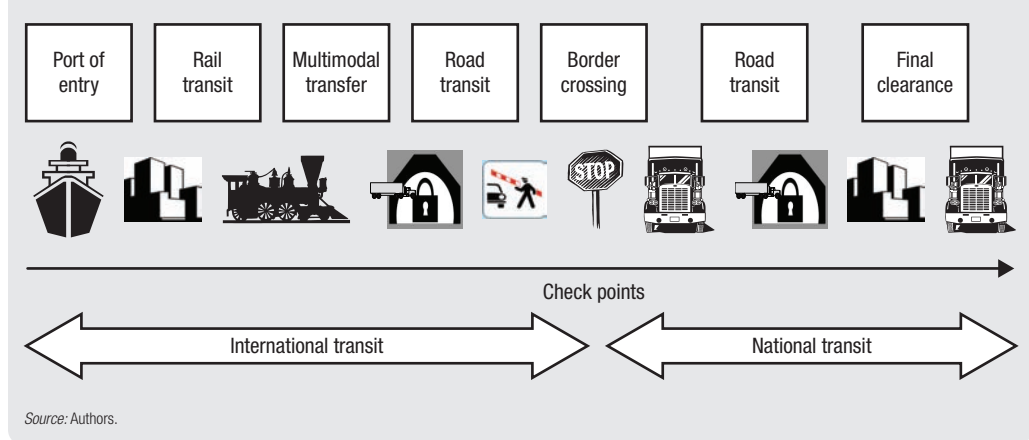
### **Inefficient operations and services on LLDCs supply chain**

The trade and transport costs of landlocked developing countries relate more to operations than to infrastructure capacity.<sup>12</sup> The main factor is the fragmentation of the supply chain. Traders in LLDCs have no access to the door-to-door logistics that developed over the last two decades in industrialized countries. Instead, they depend on an extended sequence of operations, with many procedures, agencies, and services, all prone to rent-seeking and over-regulation. LLDCs face multiple clearances and even transloading, most in the transit countries (figure 3.1). Therefore, the logistics costs supported by the traders in LLDCs consist of more than just transport costs.

As noted earlier, under those operating conditions, the average transit time is longer in large part because of the time it takes to initiate transit trades at the point of origin (such as the port) and to less extent because of delays at the border crossing or controls en route. Even so, the average transit times for exports, and with few exceptions for imports, remain much below transoceanic shipping times to and from markets in industrialized countries (sections 2 and 6).

For traders the low reliability of transit supply chain is more worrisome than the average transit time. The many steps, the fragmentation of control, and the low quality of services make the supply chain unpredictable, which shows up in the spread in transit times (box 3.1). Other factors make the delivery process unpredictable or unreliable from one end of the chain to the other: breakdowns of key infrastructure

Figure 3.1 An extended chain of operations



(such as bridges),<sup>13</sup> breakdowns of transport equipment, insecurity, and fuel shortages.<sup>14</sup> All these factors mean additional inventories, emergency shipments, suspended operations, and lost markets.

A second source of cost is the operation and market structure of services, particularly trucking services.<sup>15</sup> Transporters on trade corridors

operate under systems that limit productivity, discourage competition, and often perpetuate poor-quality services and excess capacity, all of which bump prices up to twice what they should be:

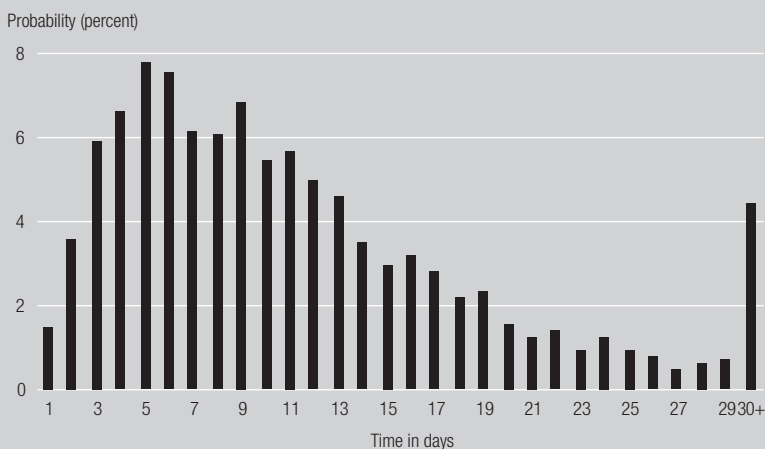
- On the Douala-Ndjamena Corridor intervention by the Freight Bureau doubles road freight rates.
- On the Vientiane-Bangkok Corridor opening Lao transit trade to all Thai truckers reduced logistics costs by 30 percent.
- In Southern Africa the quality and organization of long distance transportation are similar to those in Europe, with comparable operating costs (US\$0.08 per ton per kilometer in summer 2008). But on international routes freight rates can be pushed up 10–30 percent due to queues at the border or market restrictions that prevent optimization of backhaul loads, and reduce productivity.

Finally, compared to domestic freight service, transit is subjected to “overheads” for unnecessary services, charges, and bribes, in both the public and private sectors. These can add 50 percent or more to transport costs between a port and a landlocked country. On the Lomé-Ouagadougou corridor, shippers pay an additional 70 percent on top of freight costs, only 15 percent of which is justified by actual forwarding services, the rest paid in bribe (28

Box 3.1 The unpredictability of the supply chain in landlocked developing countries

Half the containers going to Uganda and Rwanda from the port of Mombasa are cleared for transit within nine days, but 1 in 20 takes more than a month.

Figure Probability distribution of delays



Source: Arvis, Raballand, and Marteau 2007.

percent) or legal but superfluous procedures or services.<sup>16</sup>

Neither the distance covered nor the unit cost of available transport services is necessarily much higher in landlocked developing countries than in the wealthiest countries. Instead,

shippers often support expensive, nonessential overheads—from corruption, overregulation, and private inefficiencies. Delays and low reliability and predictability raise total logistics costs, hamper productivity, and create massive disincentives to invest.

## A focus on transit countries

*The potential for improving and facilitating transit largely depends on the political economy of trade and transport in the transit country as well as across borders. Complementarities in trade, investment, and the organization of trucking should be taken into account when designing facilitation measures or investments. This section presents the preliminary findings of an analytic framework developed by the World Bank.*

The Almaty Conference and Programme of Action stressed the partnerships between landlocked countries and their transit neighbors, including both public and private sectors, to bring about real improvements in arrangements and facilities for international trade flows. Of special importance is the political economy for win-win situations across groups of stakeholders within and across countries. For transit trade from LLDCs to increase, transit countries and their landlocked neighbors need to develop a more forward-looking vision of development possibilities. While some win-win agreements between countries can still be found, most issues that remain will need innovative and imaginative strategies to overcome, or at least reduce, the concerns of interest groups that stand to lose from change, especially those benefiting from rents. Corridor management arrangements to facilitate trade on several corridors have solved some implementation issues and overcome the natural reluctance of transit countries for transit trade.<sup>17</sup>

The importance of policies and attitudes in transit countries has been highlighted by several authors and policy makers. At the time of the conference Jeffrey Sachs drew the attention to the implication of this dependence of LLDCs.<sup>18</sup> The World Bank is developing a conceptual framework for identifying the costs and benefits of a country's providing transit services to

neighbors. Pilot studies of Chile, Kazakhstan, Tanzania, and Thailand using this framework are already under way, and at least one or two others are planned. The framework includes five layers of possible costs and benefits: revenues from users, scale economies from increased volumes, negative externalities such as environmental damage and propagation of disease, new investment and production opportunities created by the larger market, and improved status and leverage of the transit country within the region.

Evidence from the studies indicates that revenues from transit users is probably sufficient to yield net benefits to transit countries where the transit traffic makes use of infrastructure and service capacity that would otherwise have been unused.<sup>19</sup> Important exceptions might be where infrastructure costs in the transit country are recovered mainly through fuel taxes, and where the resulting intercountry differences in retail fuel prices are large enough to cause truck-drivers to fill their tanks outside the transit country. Where the combination of transit and national traffic makes full use of existing capacity, pricing for the use of the new infrastructure has to be enough to generate revenues for the transit country such that it does not incur overall net costs.

For the other more indirect costs and benefits, transit traffic can sometimes augment overall volumes enough to induce shipping companies to offer more frequent and direct sailings, better vessels, and lower freight rates from the transit country ports. This appears to be so in East Africa, where transit trade is about a third of total port traffic. The better and more frequent services can reduce shipping costs to transit country traders. Similarly, overland transit traffic can, by adding to national traffic, also

improve quality and reduce prices of road and rail freight services. Negative externalities need regulation and should be reflected in charges for using infrastructure. Evidence on the fourth and fifth potential benefits, including productive investment opportunities created, has so far proved harder than expected to find. But research is continuing on timber and textile processing on the road between Vientiane and Bangkok and on minerals-based development in some parts of Africa.

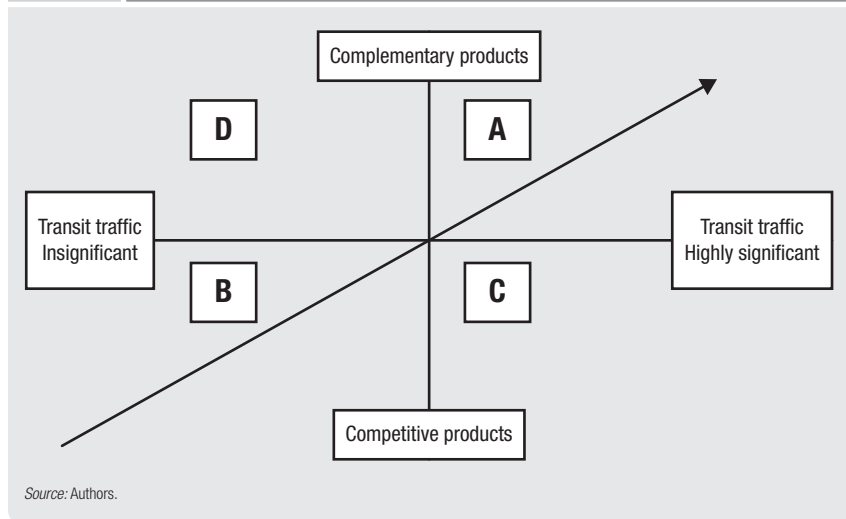
Trade and investment linkages between the transit country and the landlocked country also directly influence the transit facilitation framework. Investments by the Thai garment industry in Laos helped develop the corridor to Vientiane. The efficient chain of exports of Mali and the Burkinabe exports of mangoes developed from Ivorian investments.

The relevance of transit traffic to transit countries can be considered in two dimensions: the extent to which the transit products are complementary to or competitive with the products of the transit country, and the importance of transit traffic to the transport activities within the transit country. Taking these two dimensions together results in a matrix of four possibilities.

First are the country pairs where the transit country has a strong incentive to support transit traffic from its landlocked neighbor (A in figure 4.1). For most of the transit countries in these country pairs little more needs to be done to add to the incentives already there. At the other extreme are the country pairs where there are few incentives for the transit country to support transit trade (B in figure 4.1). For the transit countries in these country pairs, with a few exceptions, there is little that improved trade facilitation can do to overcome the product competitiveness issues. The other two groups (C and D in figure 4.1) are those where there are some but not compelling incentives for the transit country to support transit trade.

Improved trade facilitation has the most to offer to country pairs where the products are complementary but where the transit traffic is relatively unimportant to the transit country. For these countries (D in figure 4.1) there are

Figure 4.1 Categorization of transit countries



few trade competitiveness issues, but measures to increase the benefits of transit traffic can be implemented that could make its facilitation more attractive.

There is a large gap between what road transport services between landlocked and transit countries could cost, based on assessments of vehicle operating costs and trucking company finances, and what they actually cost. West and Central Africa indicates that cross-border trucking services can incur charges more than 50 percent higher than what a moderately efficient operator would charge. Some of the excess is to cover the many informal tolls charged on trucks operating on the main highways of the region, some to cover the above average vehicle maintenance costs on roads in less than optimal condition, and some to cover the relative lack of productivity of the trucks. But even when allowances are made for all of these, the tariffs are still unreasonably high.

The probable explanation is a lack of competition in the way road transport services are provided. Some countries apply a *tour de role* system, aimed at giving protection to existing truck operators and ensuring that the demand for their services is spread “equitably” among them.<sup>20</sup> Sometimes the rules require trucks that are not locally owned or registered to go to the end of the queue. This makes it time-consuming for an operator to wait for, rather than contract,

a backhaul load—so it can be less costly for them to return empty rather than wait. The rules prevent shippers and truckers from negotiating directly for contracts and leave trucks and truckers waiting in long queues. They can also involve reciprocal exchanges of quotas for international trips, further restricting entry into the market.

Such schemes affect road transport services in the transit country and on cross-border traffic to landlocked countries. And since the average travel distance of transit freight in the transit country is generally much longer than for national freight, the impact on each consignment is greater.

The lack of competition from market-sharing in other transport-related services can also affect transit freight. In some East African

countries market sharing between freight forwarders keeps a large number of small companies in business. But they have limited financial resources to fund the bonds needed for transit freight. So, they have to wait for existing bonds to be cleared (by the bonded freight being delivered to its destination or leaving the transit country). Any other trucks have to wait at the border until the existing bonds are cleared.

Changing such systems has proven difficult because many individuals and companies benefit from them as they are. The beneficiaries of any change would be different from the potential losers, who have a high incentive to prevent change—and often the political and economic strength to do so.

## Trade facilitation and regional transit systems

*Landlocked countries depend on transit systems that allow them to trade with and through their neighbors and to facilitate the movements of goods and vehicles. For most landlocked and transit countries the lack, or inadequacy, of implementation mechanisms has jeopardized the development of seamless transit systems in Europe over the last half century.*

Proper transit systems must be in place regionally or at least bilaterally to move goods and vehicles across borders and over land. The most important constraint is to design a transit regime to move goods in the transit country while the duties are collected in the country of destination (landlocked country for imports, or its final commercial partner for exports). Since World War I international law has recognized the importance of accessibility and instituted the principle of freedom of transit, such as the GATT Art V,<sup>21</sup> and the 1958 Geneva Convention on High Seas (further developed in the 1982 Montego Bay Convention).

In practice, a transit system requires:

- Physical cross-border infrastructure.
- An enabling framework for cross-border operation: specific (bilateral or regional) agreements, typically a transport treaty for the movement of goods and vessels (such as trucks). This may include movement of vehicles and drivers and mutual recognition of insurance.
- Adequate transit procedures to implement the agreements.
- Capable national agencies to implement the system.
- Competent service providers.

The cornerstone of a transit system is the customs regime in both transit and destination countries. Transit is a delayed clearance regime, which developed to facilitate overland trade over long distances and potentially several territories

and avoid excessive fragmentation of the supply chain and cost escalation (the alternative would be a succession of imports and exports, loading and unloading). And in many instances clearance at the border may not be an efficient solution.

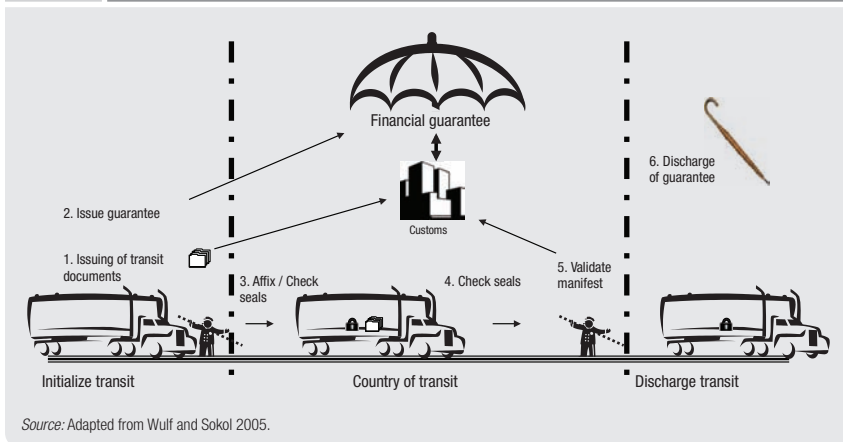
The transit procedure relies primarily on a private-public partnership: the transit operator has freedom of transit in the customs territory as long as it is qualified and provides financial security to the customs (figure 5.1). Implementation requires rather simple and universal instruments and principles, such as:

- Secured vessels (seals).
- Financial guarantee to fiscal risk of the customs of the country of transit.
- Proper documents and tracing the inbound and outbound shipments in the country of transit.
- Authorization of transit operators.

Transit regimes are implemented, in the first place, by national institutions and private operators. But there are major gains in harmonizing and chaining a transit regime within a regional system, for instance a single document and a single guarantee recognized across borders.

Western Europe went furthest in the development of such simple door-to-door transit. It began in the 1950s with the *Transports Internationaux Routiers* (TIR) system, which provides a reliable system based on a single manifest (carnet TIR) and a chain of guarantees, which eliminated duplication of procedures and sped movement through borders. The carnets or guarantees are produced and distributed through responsible private channels—road transport associations—to professionally and financially qualified freight transporters. The UN Economic Commission for Europe (UNECE) oversees the TIR. The International Road Union (IRU) federates national associations of operators, acts as the clearinghouse for the carnets and the guarantees, and provides

**Figure 5.1** The principles of implementing transit documentation and guarantees



capacity building to the members handling the work.<sup>22</sup> With deepening integration, this system evolved into a common transit system (for the EU and EFTA) and a single transit regime for the EU as a customs union.<sup>23</sup>

A regional transit regime has long been recognized as beneficial. But except for the extension of the TIR regime to countries trading by land with the EU (former USSR, Turkey), it has not yet been replicated in other regions.

The main reasons for the slow progress are the wide range of institutions whose cooperation is required, and their capacity to implement the transit regime. (In many LLDCs customs does not properly trace the manifest and the bonds.) In many instances the initiative to design a domestic or regional system deviated in some significant way from the core principles. The lack of trust between the public and private parties

and the many concessions to various interests compromise the system. For instance, in Western Africa the TRIE has been the equivalent of the TIR since 1984, but it does not apply regulations of entry, due to the pressure of trucking lobbies, or proper mutual guarantees.

Less comprehensive transit arrangements are in place between many landlocked and transit countries. They include agreed documentation, temporary imports of vehicles, recognition of drivers' licenses, and even acceptance of vehicle insurance. Some guarantee to customs and other duties is also necessary, but this often has to be purchased separately from a commercial bank for each consignment or vehicle transit (by a freight forwarder, transport operator, or the trading company). Where such agreements are not in place, a costly and time consuming transfer of freight from one vehicle to another is necessary. The process often involves an intermediate transfer to another vehicle for the border crossing.

Most Asian countries retain considerable restrictions on passage of foreign-registered freight vehicles, and they have no international transit regime in operation, although the ASEAN countries are moving slowly toward one (table 5.1). In Latin America the situation varies but there are still no broad regional transit systems. A transit agreement between Russia, Mongolia, and China has been under negotiation for a long time and is nearing closure. Although the draft agreement does not include a guarantee system, Russia and Mongolia are already members of the TIR system, and China is negotiating membership.

Sub-Saharan Africa, with needs in some ways most similar to those of Europe due to the large number of inland international frontiers, is more open to international freight movements and has negotiated a range of subregional transit agreements. The freedom of movement of vehicles is more advanced and effectively implemented than in most other parts of the world. But weak institutions, and inherited mindsets attuned to control and rent-seeking rather than to providing good services to compete for customers, have resulted in very little effective implementation.

The binding constraint is often not the lack of regional or bilateral agreements, but the unwillingness to implement them, or the inadequacy of implementation mechanisms.

**Table 6** Status of main transit building blocks in developing countries

Building block	Latin America	East Asia	South Asia	East Africa and South Africa	West Africa and Central Africa
Regional agreements on transport	Restrictive Andean countries Open Mercosur	Very restrictive	Very restrictive	Open	Very open
Strength of relevant institutions	Varies by country	Varies by country	Varies by country	Weak	Very weak
Transit regime and implementation	Ad hoc national or per corridor Some components missing	Ad hoc national Very weak	None	National systems No chain	Nominal, and almost unused
Regulation of transit operators	Varies by country	Fair	Poor	Varies by country	Very poor
Transport market structure	Varies by country	Weak, except Thailand	Weak	Good	Very weak

Source: Analysis by World Bank International Trade Department.

## Filling some of the gaps in implementing the Almaty Programme

*The Almaty Programme has stimulated an enthusiastic response from the international community, including the World Bank. However, a recent review revealed some implementation gaps. This section gives some examples of activities designed to fill some of these gaps.*

There has been an explosion of activity by the international community to address the Almaty Programme of Action. An internet search for publications on trade and transit in landlocked countries in July 2008 produced more than 33,000 responses. Without diminishing the importance of the others, three of them taken by agencies other than the World Bank stand out as being indicative of what is being done. In 2003 UNESCAP published a report on Transit Transport Issues in Landlocked and Transit Developing Countries<sup>24</sup> and went on to produce a method of generating corridor performance indicators. In 2006 UNCTAD published *Facts and Figures for Landlocked Developing Countries*.<sup>25</sup> For the first time this provided a data base on which assessment of the overall performance of LLDCs could be used as a basis for prioritizing actions to address their issues. The Asian Development Bank produced a comprehensive review of the issues facing its landlocked members,<sup>26</sup> which goes beyond the *Facts and Figures* to provide more detail on what issues are in most urgent need of attention. The other regional development banks and regional UN agencies have undertaken similar activities in support of implementing the Programme of Action.

International agencies have been implementing the Almaty Programme of Action through analysis, technical assistance to reforms and investment projects. The World Bank has been active in areas such as corridor facilitation, or customs reforms projects (annex A). Diagnosis

of the facilitation problem of LLDCs and transit countries have been implemented since Almaty, in the form of Trade and Transport Facilitation audits, often as part of the cooperative Integrated Framework program. Data from the Logistics Performance Index and the Doing Business indicators<sup>27</sup> also help in this effort. Another interagency program to support the negotiations on trade facilitation at the WTO has assessing needs in many LLDCs (including Zambia, Rwanda, and Mali).

To understand how all these activities are meeting the Programme of Action and assess potential gaps, the International Trade Department of the World Bank instituted a comprehensive program on trade and transit facilitation. As part of an initial review, the World Bank produced a report on Best Practices in Management of International Trade Corridors.<sup>28</sup> The review revealed that while most of the components of the Programme of Action were being addressed to a greater or lesser extent, some were not receiving the attention they deserved. The implementation gaps were in three areas:

- The generation of data and knowledge.
- The scope of technical assistance.
- The orientation of investments.

This section of the report provides one example of how gaps in each of the three areas are being addressed within the overall framework of World Bank activities to address the Programme of Action.

### **Trade corridor performance monitoring**

One of the knowledge gaps was in the inconsistency of approaches of different agencies in measuring corridor monitoring indicators. International agencies involved in implementing the Almaty Programme (including UNECE and

UNESCAP as well as the regional development banks) strongly support an international agreement on use of a common corridor monitoring framework, leaving its application to a wide variety of parties. They also support an approach based on factual information, particularly for more detailed performance at border crossings, to complement the subjective assessments in the LPI and other surveys.

The LPI and its underlying indicators give valuable information about how countries compare with one another and which dimensions of logistics performance most need improvement. However, more specific and precise data are needed about main routes, their reliability, and the time and money costs of using them.

Past studies have not used consistent definitions of costs and times for assessing corridor performance, or even of the products transported. This inconsistency has made it difficult to compare the performance of one corridor with another. More consistency has been introduced in the last few years through two methods, one designed by UNESCAP<sup>29</sup> and one by USAID.<sup>30</sup> But even these two methods are not sufficiently consistent for comparing the results from one method with those from the other. Despite the inconsistencies, a common feature of studies using both methods is that uncertainties in cost and time are more important than their minimum values.

The World Bank is now applying a method that uses the best features of both approaches, one that is fairly easy to apply and is acceptable to all interested parties. It measures separately the performance for imports and exports and for maritime transport and land transport.

The system is now being pilot-tested on seven major corridors, including three from coastal countries. As for most other corridor performance indicators, data are collected from structured interviews with samples of freight forwarders, transport operators, and traders, together accounting for large proportions of the products under consideration. For five of the corridors the product group is containerized industrialized products with a value of about US\$20,000 per twenty-foot equivalent unit. For the two other corridors the product group

is perishable fresh fruits in refrigerated containers.<sup>31</sup> The indicators cover cost and time (both formal and informal), and their variability, for six main stages in the journey from origin to destination.

The indicators can be used for three purposes. First, they can measure the performance of a particular corridor, where most of the costs and transit times are incurred and where the greatest uncertainties and unreliabilities occur. These results will show where improvement in performance will have the greatest impact on facilitation and trade. Since the surveys and analysis are simple, they can be replicated frequently, perhaps every two years.

The second purpose is to see if and where performance in a corridor is changing over time. This is particularly useful in showing what changes are most likely to be cost-effective.

The third purpose is to compare the performance of one corridor with another. The comparison can be between two corridors linking the same LLDC to a developed country market, between corridors to the same developed country market from different LLDCs, to a particular developed country market from an LLDC and one of its transit neighbors, or one of the LLDC's main competitors in that market for the same product. The comparison could even be between corridors from the same LLDC to different developed country markets, to see which has the greatest potential for development.

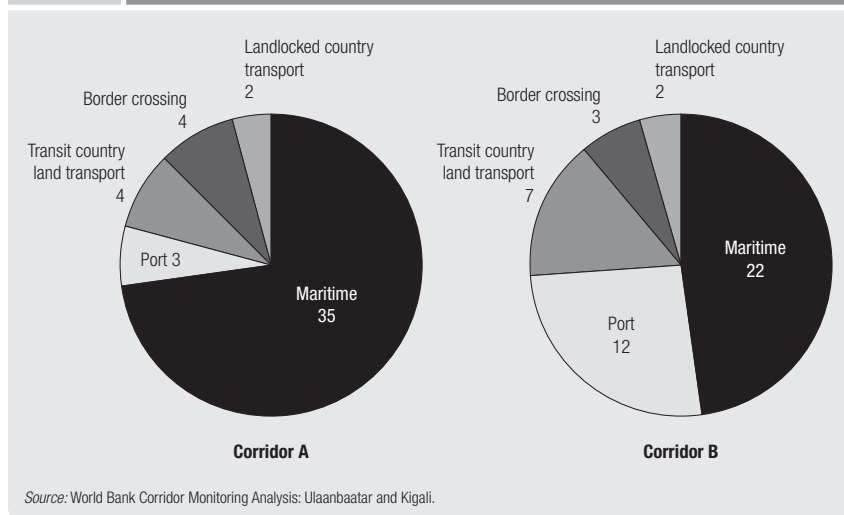
A comprehensive review of the trade competitiveness of an LLDC could involve all three types of comparison. Together, they can provide indicators more practical than the more conventional country indicators, and they can complement the country data that accompany the Logistics Performance Index.

As results come in from the seven pilots, and a second round of pilots now being planned, the Bank will consult intensively with other interested agencies to further improve the method developed. It hopes to reach a consensus on the basic elements of a common system, or at least on core concepts and definitions. This would enable the investigation and analyses by any agency to be largely compatible with those by others.

Some early indications from the first pilots support and expand many observations from other recent studies<sup>32</sup> including:

- The times for maritime transport exceed those for land transport, even for the most disadvantaged LLDCs (figure 6.1). The average total transit time for an export container from a landlocked country to a developed country port is about 50 days and the cost about US\$4,700 per twenty-foot equivalent unit.
- Road transport tariffs in transit countries are higher than truck operating costs.
- Informal tolls add about 8 percent to costs and about 20 percent to times. But the uncertainty they create is far more important.
- Average time to deliver an export container to a ship is about 19 days from a landlocked country and 7 days for a coastal country. More than a third of the difference is taken up by transport in the transit country, less than a third by transport in the landlocked country itself, with an average of two days at the border.
- Customs at both the port and the border take longer for imports than exports; imports are subject to more controls. Land transport charges for imports and exports are similar, but maritime tariffs for exports are generally less than those for imports because of the imbalance of trade flows to the transit country (imports to LLDCs consistently exceed exports, leaving empty capacity on the return leg).
- Time spent in port varies widely for imports, less so for exports.
- Including the maritime transit in the total time significantly reduces the percentage time penalty for landlocked countries, but has no impact on the actual penalty in numbers of days. The overall time penalty is about 40 percent, compared with more than 100 percent for just the land segment. The overall

**Figure 6.1** Transit times (in days) for export containers from two landlocked countries



cost penalty is about 30 percent, with a time penalty of about 30 percent for exports from LLDCs compared with those from their transit neighbors.

- The time and cost penalties vary greatly from one corridor to another.

Other agencies involved in implementing the Almaty Programme (including UNECE and UNESCAP) strongly support an international agreement on a common monitoring framework, leaving its application to a wide variety of parties. They also support an approach based on factual information, particularly for more detailed performance at border crossings, to complement the subjective assessments in the LPI and other surveys.

### Re-engineering transit regimes

In the previous section this report showed the importance of transit regimes and the advantages to LLDCs if they can be implemented. The review of activities to implement the Programme of Action highlighted the lack of progress in design and implementation of such regimes.

One of the most promising ways to help countries and regions bring about on-the-ground improvements to transit trade is to incorporate into local or regional procedures the elements that have proved most useful elsewhere—and notably in Europe, including

the TIR. Instituting a proper transit regime, by creating or revamping systems, is the key to improving the international connectivity of LLDCs. A good transit system will provide seamless door-to-door, or ship-to-door, logistics, reducing delays and increasing reliability. It will also insist on professional requirements, which are incentives for improving private services, such as trucking or freight forwarding.

Conceptually, the architecture of a functional transit regime is universal, whether national or regional. It includes transit manifests, financial guarantees, information for monitoring, and the requirements and authorizations of transit operators. However, and with the exception of the specific TIR manual, there is a dearth of standards and guidelines to help countries and subregions implement a re-engineering effort. And the awareness of most policy makers on what it takes to implement a working system is very low. International organizations could fill this gap.

Technical assistance can also be provided to countries and subregions to promote systemic changes in their transit regime. Until now, aid has focused on partial solutions (such as using information technology) but has not addressed changes in architecture or the role of private operators. The challenge is to design a pragmatic sequence for moving toward European best practice. The sequence will take into account the political economy and the technical constraints coming from the organization of the freight markets and regional financial services, while sticking to the essential working principles.

Such an approach has been piloted as part of the Central Africa Transport and Transit Facilitation Project now being implemented with financing from IDA, the European Commission, the African Development Bank, and the *Agence Française de Développement*. The object is to meet the needs of two landlocked countries—Chad and Central African Republic—that suffer some of the highest international transport costs and worst logistics conditions among developing countries. A TIR-based international road transit convention (TIPAC), signed in 1991, was never followed through. International

transport between the two countries and Cameroon (mainly the port of Douala) is managed under bilateral conventions by freight bureaux enforcing mandatory freight allocations and queuing.

The main problems with the existing transit regime included very slow release of goods from the port of Douala, with seven documents required, all to be cleared by three separate offices. There were also multiple checkpoints and controls on the roads to the landlocked countries. Both transport charges and the guarantees required from banks were significantly more costly than for comparable services in other countries. The negotiations of the transit group set up by the government went through many ups and downs due to the multiple rents in the system and the reluctance of their recipients to lose them.

Thanks mainly to strong leadership and pressure for reform from the Cameroon government, and especially Cameroon customs, agreement was eventually reached on a substantially revised transit system. The main elements: introduce one common transit document (based on the model of the single administrative document), remove all check-points on the roads, use information technology based on UNCTAD's ASYCUDA system, add a bar code to the transit document and container with optical reading at the start, destination, and border, and simplify transit procedures for use by authorized freight forwarders who had obtained a standing customs guarantee from the banking system. The changes are expected to yield substantial benefits in shorter delivery times, greater predictability, and lower prices.

### **Diversifying the transportation mode: air freight's potential**

The review of activities related to the Programme of Action showed that despite a wealth of attention to international aviation agreements, there was still little knowledge of what conditions favor the development of air freight services to land-locked countries. There is even less understanding of what can be done to stimulate the expansion of such services, and what benefits such an expansion might bring about.

Exports by air from landlocked countries have so far been very limited despite air transport's advantages in avoiding many of the complications involved in transiting other countries. The World Bank has reviewed the growth of exports by air from the developing countries, generally focusing on experiences most likely to be relevant to landlocked countries. Each of the examples that emerged had benefited from particular combinations of factors and circumstances, especially of supply and demand for the product exported. But in almost all cases comparable combinations could be offered by some landlocked countries. Fuel costs rising in line with present prospects will constrain opportunities but not eliminate them.

Among the largest products of relevance are the exports of fresh cut flowers from Columbia to the US and from Kenya and Tanzania to the EU. While not landlocked countries, these provide valuable lessons on the conditions that LLDCs need to emulate their success. The Colombian trade was the first to develop, in the 1970s, and has risen to reach about US\$1 billion a year. Kenya's sales to Europe increased greatly in recent years, rising from US\$120 million in 2002 to US\$400 million in 2005. The key factors were appropriate year-round climatic conditions and good road access from rural growing areas to an airport with international passenger services. Analyses of the carbon footprint of flowers flown to the EU show that it is lower than was required for year-round greenhouse cultivation in Holland of the types of flowers replaced by the imports. In the last few years cultivation of flowers for export by air has begun from some landlocked countries, notably Ethiopia and Uganda. There may also be significant potential in Rwanda, perhaps sharing regional freight air services with neighboring exporters.

Other substantial precedents include clothing, seafood and fresh fish, and light-weight electronic products. For clothing and textiles, air transport is mainly used for high-value and time-sensitive fashion clothing, and as back-up transport to more conventional clothing markets. Mauritius' clothing exports to the EU (some US\$400 million a year) owes its origin

in significant part to the cargo capacity in air passenger services. Exports of seafood and fresh fish to the US and the EU have been developed by Ecuador (now some US\$95 million a year) and Tanzania (US\$70 million), though with some negative ecological consequences (West Nile Perch introduced into Lake Victoria are incompatible with native species). An interesting example in the electronics field is the US\$70 million export trade developed by Singapore on the basis of semi-conductors manufactured (from air-freighted materials) in the Philippines and forwarded for assembly into larger products in Malaysia, whence they are air freighted to OECD countries.

These examples illustrate how air export opportunities tend to depend on well-informed entrepreneurs spotting promising coincidences of specific conditions—particularly at the source, in low-cost production potential for particular goods, and at the market, in scale of demand and the prices people are prepared to pay. The coincidence can also be in transport, by availability on the relevant routes of air-freight capacity not fully used and hence available at attractive prices, or in the cost and price equation, due to trade preferences or tax subsidies.

The role of governments in developing air freight markets has been marginal, and at times counterproductive.<sup>33</sup> Their most effective role appears to be in the provision of information and resources for investigating the potential of innovative new markets. They have also proven useful in maintaining skeletal infrastructure such as airports in relevant areas (preferably with satellite navigation facilities) and good access to potential areas of production. But they should be very cautious about handling more specialized infrastructure, leaving this to private initiative.<sup>34</sup> When private business enterprises identify promising potential air freight markets, they benefit from having governments ready to adapt existing policies or regulations to facilitate the trade. Traders benefit when they are ready to accept changes that have a sound rationale and that avoid creating obstacles to the subsequent development of competing enterprises.

## The road ahead

*The international aid community, transit countries, landlocked countries, and regional organizations need to pay direct attention to seven policy areas likely to have a strong impact on trade growth.*

Among others, the World Bank will significantly expand the number and scope of its activities that will contribute to the Almaty Programme of Action, as well as completing the studies under way and ongoing lending projects. While many activities planned by the World Bank for the second half of the Almaty Programme period are specific to that Programme, others are part of the expanded World Bank efforts to help countries take advantage of the global market to accelerate economic growth and overcome poverty. These areas include (annex A):

- More support to country programs on trade and competitiveness, including policy analysis, lending, and technical assistance.
- More resources for trade-related infrastructure.
- Expanded programs for financing trade through the Bank's private sector arm, the International Finance Corporation.
- Expanded assistance in trade facilitation, including logistics, transport, and supply chains.
- More investments in training and capacity building for policy makers, particularly in low income countries.
- More work on tools to help countries analyze trade obstacles, as well as indicators comparing countries, such as the recently released Logistics Performance Indicators, to guide policy makers to areas in need of improvement.

These tools will be available free to all countries.

- Further development of knowledge on how to harness globalization for growth and overcoming poverty, and to inform key trade policy debates.

Several strategic themes are emerging, from experience, research, and consultations with other stakeholders. Seven lines of action merit consideration for possible inclusion in country or regional strategies, or in future multilateral initiatives:

- *Support to initiatives by transit countries* to work out with their landlocked neighbors detailed plans and time-bound targets for full, custom-designed packages of reforms and related measures to lower the cost and improve the quality and timeliness of transit transport services. This support is consistent with the Almaty Programme's emphasis on win-win partnerships and better communications. It is also a logical follow-on to the promising approaches developed since 2000 in Africa, as illustrated by Kenya-Uganda-Rwanda and more recently Cameroon-Central African Republic-Chad.
- *Under the umbrella of the United Nations, small technical working parties should prepare drafts of agreed best-practice standards* on four subjects vital to efficient transit: transit manifests, information systems for international transit trade including tracing, criteria and procedures for designation of authorized transit operators, and arrangements for purchasing customs guarantees and border processing of trucks having such guarantees. This

work can fit in the work program of the WTO negotiating party on trade facilitation (GATT Article V), and of the UNECE. But it would benefit from the involvement of the World Customs Organization, UNCTAD, and private parties from the IRU or its member associations and from the banking and insurance sector.

- *International agencies, including regional organizations, should work together and help re-engineer transit regimes on the ground.* This should be based on identified best practices, including the European systems, and anticipate the process of convergence. This can take the form of technical assistance along the lines experimented by the World Bank in Central Africa.
- *Restructuring trucking markets.* Countries that have found ways to restructure market-sharing agreements in trucking and related services have much lower trucking tariffs.<sup>35</sup> The Bank is reviewing successful reforms of trucking markets to see what features they have in common and how they can be applied in countries that still have highly regulated trucking services. A similar review is under way for the reform of related transport service markets, such as freight forwarding.
- *Generally acceptable corridor monitoring indicators are needed to assess progress on changes in logistics and trade facilitation practices.* The aim would be to produce by December 2009 (and annually thereafter) an integrated set of corridor performance monitoring results covering all main

trade-carrying corridors between landlocked developing countries and major OECD markets, including at least one for each landlocked country. To comply with this schedule will require substantive progress over the next nine months toward agreement on the monitoring system specifications and then, for effective implementation, contributions from many sources, including developing country governments, regional and sub-regional economic coordination bodies, and interested aid agencies.

- *As part of ongoing aid-for-trade initiatives, special attention should be given to the needs of LLDCs* to mobilize support from all interested aid agencies and other bodies. This will help ensure ready technical assistance for the improvement of transit regimes in countries carrying trade to and from landlocked developing countries.
- *Further consideration will need to be given in the coming years to both the need for, and means of, providing additional stimuli to the trade competitiveness of LLDCs and their capacity to diversify their export structure.* This has not been highlighted in the current report since its task is to identify what can be done in trade and transport facilitation to reduce trade costs. But countries and researchers in the field appear to be moving toward the conclusion that transport and transit solutions, essential though they are, need often to be supplemented by other support, especially for initial major export development initiatives.<sup>36</sup>

# ANNEX **A** World Bank projects relevant to LLDCs

*The World Bank is boosting aid for trade of developing countries, focusing on trade and transport facilitation for landlocked countries.*

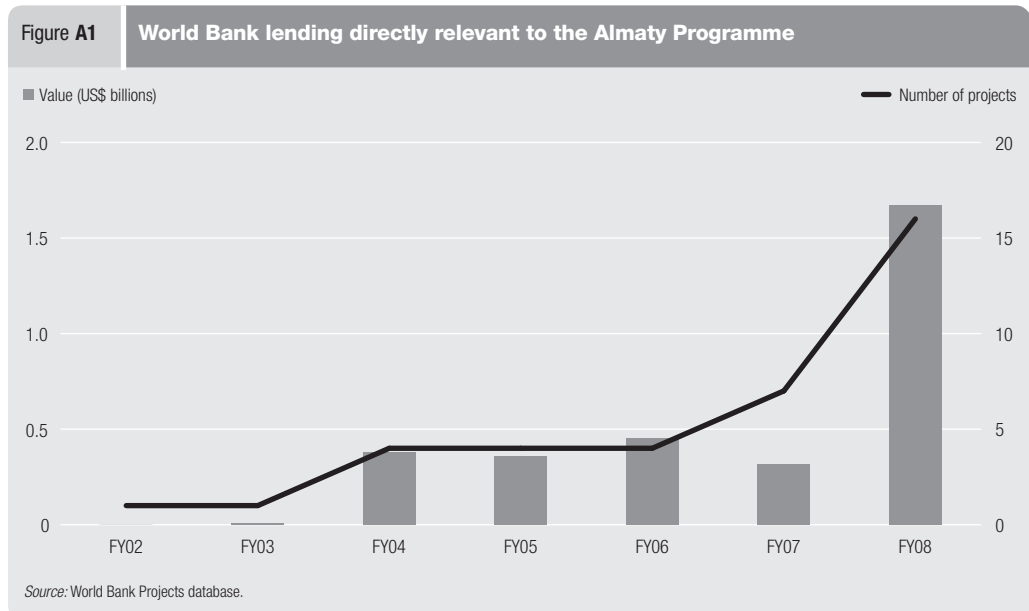
The World Bank has been supporting the agenda of the Almaty Programme with lending, technical assistance, and knowledge generating projects. To improve the access of LLDCs to regional and global markets, the Bank is targeting transit systems, trade-related infrastructure, services, and the capacity of key agencies in landlocked and transit countries. The IBRD and IDA lending for trade-related projects in LLDCs, now averaging more than US\$1.5 billion a year, has more than doubled since the Programme of Action started (figure A1).

The investment and technical assistance projects directly benefiting landlocked developing countries include (box A1):

- *Corridor projects*, which typically cover several countries and simultaneously address gaps in the transport

infrastructure, border management, and trade transit systems. Examples include regional trade facilitation projects in Central, Eastern, and Western Africa and Central Asia, and Pakistan-Afghanistan. Similar projects are under preparation in East Asia (Greater Mekong corridors) and in the Bengal region (India, Bangladesh, Nepal, Bhutan).

- *Customs modernization projects* remain a major part of the portfolio worldwide. The Bank, with other donors, has developed sustainable assistance to customs either as stand-alone projects (Laos) or as part of regional projects (Southeast Europe).
- *Multimodal transport and railroads projects* have the potential to reduce freight costs and carbon footprints. Dilapidated infrastructure and declining



service quality have in many cases prevented rail freight from contributing its full potential. And despite the privatization of most rail freight operations, rail transport remains a logistics constraint for many LLDCs. Sitarail in Côte d'Ivoire, serving Burkina Faso and Mali, Camrail in Cameroon, serving Chad and Central African Republic, and the Central East African Railway, serving Malawi and Mozambique could pave the way for a resurgence of railways as a competitive access solution for LLDCs. The corridor projects in Eastern and Central Africa include railways.

- *Investment and capacity building in aviation* is also essential to promote access, notably compliance with international safety standards. Air freight can offer access to international markets for niche products from LLDCs. New technology for in-flight air traffic control can keep costs low while maintaining or even improving safety. The Bank has developed regional projects in West Africa and Central Africa.

The International Finance Corporation (IFC) also contributes to these objectives, as when financing transport services and investment operating on trade corridors serving LLDCs.<sup>39</sup> It contributed to the privatization of the railway system in the two eastern Africa corridors (Northern corridor through Kenya, Central corridor through Tanzania). Projects in gateway countries, such as port improvement or customs reform, often directly contribute to reducing the trade costs of landlocked countries by addressing problems in the transit country, even though they are not explicitly the trade of the hinterland and are not counted in these statistics.

Regional projects in energy and telecommunication also contribute to reducing the costs of being landlocked, for instance by reducing reliance on imported fuel. The World Bank is helping landlocked Malawi connect to the large Cahora Bassa hydropower dam in Mozambique. Private sector development projects also contribute to this broader objective.

Box A1

### The World Bank Global Trade and Transit Facilitation program

Initiated 18 months ago, the Trade and Transit Facilitation program revisits the problems of overland transit trade, especially in landlocked countries. It directly supports the Almaty Programme of Action. It also involves partnerships with other organizations such as UN-ECE, IRU, and UNCTAD.<sup>37</sup>

The program combines research, case studies, indicators, and pilot technical assistance. The main areas of focus include:

- Corridor management.
- Economics of transit and analysis of cost structure for transit supply chains.<sup>38</sup>
- Trade corridor performance indicators for several pilot corridors, and the design of a new cost model.
- A pilot technical assistance program in Central Africa to redesign the transit regime, to be expanded in one or two other regions in fiscal 2009.
- Performance and impact of alternate modes of transportation, such as air freight.

Source: [www.worldbank.org/trade](http://www.worldbank.org/trade).

Table A1

### World Bank LLDC commitments by region since the Almaty conference

Region	Almaty relevant projects		Other trade development projects for LLDCs	
	US\$million	Projects	US\$million	Projects
Africa	1,786	21	2,263	41
East Asia and the Pacific	106	2	83	6
Eastern Europe and Central Asia	1,064	9	1,007	15
Latin America	74	1	30	1
South Asia	148	2	84	3

Source: World Bank Projects database.

Most of the lending, both by number of projects and value, has been for the Africa region. In general the distribution of lending by both measures has been similar across regions, except for East Asia where the average project size has been above average and East Europe and Central Asia where it has been below average. Projects directly related to the Almaty agenda, at an average of just under US\$100 million, have been almost twice the size of other projects indirectly related to LLDCs.

#### Advisory support

The Bank and other international agencies have been backing lending programs with advisory work to facilitate trade and improve

The facilitation audit diagnoses, as comprehensively as possible, procedural or operational constraints to external trade and international transportation services. The three main areas are the procedures and regulatory requirements for international trade transactions, the efficiency and market structure of transport services and infrastructures, and the measurement of costs and delays. This analysis is carried out through interviewing of private sector operators and public agencies.

The methodology published by the World Bank as *Trade and Transport Facilitation: a Toolkit for Audit, Analysis and Remedial Action* is available on the Global Facilitation Partnership website ([www.gfptt.org](http://www.gfptt.org)). An updated version of this toolkit is being prepared.

export competitiveness. Most LLDCs have taken advantage of eligibility to the Integrated Framework program to contract for Diagnostic for Trade Integration Studies. Similar work has been implemented for many countries that are not eligible. Since 2003 almost all LLDCs

have been covered, in some cases more than once, which can contribute to the preparation or design of lending projects.

### Knowledge, data, and toolkits

The World Bank has also stepped up knowledge and analytical activities directly relevant for the facilitation of trade of landlocked countries, including:

- New data such as the Logistics Performance Indicators (LPI).
- The publication of toolkits for policy makers and development—a customs modernization handbook, for instance (box A2).
- Innovative regional studies, such as a recent truckers' survey in Africa.

The Bank also initiated a specific program targeting trade and transit facilitation for LLDCs.

# List of landlocked developing countries and transit countries

Country name	Transit countries	Subregion
Afghanistan	Pakistan, Iran	South Asia
Armenia	Georgia, Turkey	Europe–Central Asia
Azerbaijan	Georgia, Turkey, Russia, Iran	Caucasus
Bhutan	India	South-Asia
Bolivia	Chile, Argentina, Brazil, Peru	Latin America
Botswana	South Africa, Namibia	Southern Africa
Burkina Faso	Côte d'Ivoire, Togo, Ghana	Western Africa
Burundi	Kenya, Tanzania	East Africa
Central African Rep.	Cameroon	Central Africa
Chad	Cameroon	Central Africa
Ethiopia	Djibouti	East Africa
Kazakhstan	Russia	Europe–Central Asia
Kyrgyz Rep.	Russia, Kazakhstan	Europe–Central Asia
Lao PDR	Thailand, Vietnam	East Asia
Lesotho	South-Africa	Southern Africa
Malawi	South-Africa, Mozambique	Southern-Africa
Mali	Côte d'Ivoire, Togo, Ghana, Senegal	Western Africa
Moldova		Europe
Mongolia	China, Russia	East Asia
Nepal	India	South Asia
Niger	Togo, Benin	Western Africa
Paraguay	Argentina, Brazil	Latin America
Rwanda	Kenya	East Africa
Swaziland	South-Africa, Mozambique	Southern-Africa
Tajikistan	Russia, Kazakhstan, Uzbekistan	Europe–Central Asia
Turkmenistan	Russia, Kazakhstan, Uzbekistan, Iran	Europe–Central Asia
Uganda	Kenya	East Africa
Uzbekistan	Russia, Kazakhstan	Europe–Central Asia
Zambia	South-Africa, Mozambique, Tanzania	Southern Africa
Zimbabwe	South-Africa, Mozambique	Southern Africa
Macedonia (FYR)		Europe

# Notes

1. <http://www.worldbank.org/lpi>.
2. Calculated values for total GDP and GDP per capita depend very much on the units. To aggregate data for different countries a common currency is needed, and US dollars are used. To take out the effects of inflation, constant value US dollars are used. Estimated growth rates in GDP and GDP per capita are not so dependent on the units. So far as possible all data is expressed in constant US\$2006 and per capita GDP and its growth rate, rather than total GDP.
3. MacKellar, Landis, and others; Wörgötter and Wörz (2000). *Economic Development Problems of Landlocked Countries*. IHS Transition Economic Series No. 14, Institut für Höhere Studien, Wien.
4. Collier, Paul (2007).
5. The transit countries include some from all per capita income groups.
6. A higher threshold for imports than exports is used because for LLDCs the total value of imports is more than double the total value of exports.
7. Arvis and others (2007).
8. <http://www.doingbusiness.org/>.
9. [http://www.weforum.org/en/initiatives/gcp/Global percent20Competitiveness percent20Report/ index.htm](http://www.weforum.org/en/initiatives/gcp/Global%20Competitiveness%20Report/index.htm).
10. Limão and Venables (2001), p. 452.
11. The only capital city of an LLDC not having all-weather access is Bangui, but a paved road to Douala is being built.
12. Arvis, Raballand, and Marteau (2007).
13. In the summer of 2008, the main route to Burkina Faso from the port of Lomé was interrupted when bridges were washed away, implying several delays to move the cargo through Benin and Ghana.
14. Lower taxation or subsidies of diesel in LLDCs are potentially a fiscal drain, as truckers from transit countries will fill up in the LLDCs.
15. Raballand and Teravaninthorn (2008).
16. Arvis, Raballand, and Marteau (2007).
17. Arnold (2006).
18. Sachs and others (2004).
19. This is where the marginal revenue exceeds the marginal cost. When the transit traffic creates a need for additional infrastructure capacity the marginal cost might increase more than the marginal revenue.
20. Under these systems clients are forced to use the trucker who has been waiting longest.
21. Article V of the GATT (1947) states that "there shall be freedom of transit through the territory of each contracting party, via the routes most convenient for international transit, for traffic in transit to or from the territory of other contracting parties."
22. Union Internationale des Transports Routiers, headquartered in Geneva.
23. The EU is a real customs union where duties can be collected at the border of the Union, irrespective of the final destination. Two other examples are Switzerland-Liechtenstein and the South African Customs Union.
24. UNESCAP (2003). <http://www.unescap.org/publications/detail.asp?id=987>.
25. UNCTAD (2006). <http://www.unctad.org/Templates/webflyer.asp?docid=7273&intItemID=3617&lang=1>.
26. ADB (2006). <http://www.adb.org/Documents/Reports/ca-trade-policy/>.
27. <http://www.doingbusiness.org/>.
28. <http://www.worldbank.org/transport>, Publication and Reports, under Knowledge Resources.
29. UNESCAP (2004). <http://www.unescap.org/ttdw/index.asp?MenuName=RouteStudiesWelcome>.
30. <http://www.satradehub.org/index.php?id=543>.
31. Perishable goods are included because some landlocked countries have climates appropriate for their production.
32. The initial findings are presented for average corridors, but the real value of the corridor approach is in the details it reveals for each corridor. There is wide variation among corridors in their costs, times, and variations for each of the six stages of transit considered. The details of these variations are lost in the averages.
33. For example, in providing subsidies for trade that turns out to be unsustainable.
34. Building cold storage facilities at airports does not appear to have influenced the development of air freight in perishable products.
35. A recent review of the impact of trucking market reform in Rwanda indicated a 50 percent reduction in truck tariffs ten years after the reform took place in 1994. Similar results were found for trucking market reforms in Mexico. (see <http://Inweb90.worldbank.org/oed/oeddoctlib.nsf/DocUNIDViewForJavaSearch/02BA59E41714B982852567F5005D8A07>)
36. In addition to Collier (2007), see Collier and Venables (2007).
37. The program was made feasible by a grant of the Bank of Netherlands Partnership Program.
38. Arvis, Raballand, and Marteau (2007).
39. Over the period, IFC financed four projects directly relevant for the Almaty Programme (all in Africa) for about US\$85 million.

# References

- Arnold, J. 2006.** "Best practices in management of International Trade Corridors." Transport Paper 13. World Bank, Washington, DC.
- Arvis, J., M. Mustra, J. Panzer, L. Ojala, and T. Naula. 2007.** *Connecting to Compete: Trade Logistics in the Global Economy. The Logistics Performance Index and Its Indicators.* Washington, DC: World Bank.
- Arvis, J., G. Raballand, and J. Marteau. 2007.** "The Cost of Being Landlocked: Logistics Costs and Supply Chain Reliability." Policy Research Working Paper 4258. World Bank, Washington, DC.
- Asian Development Bank (ADB). 2006.** *Central Asia: Increasing Gains from Trade Through Regional Cooperation in Trade Policy, Transport, and Customs Transit.* Philippines. [<http://www.adb.org/Documents/Reports/ca-trade-policy/>].
- Collier, P. 2007.** "Africa's economic growth: opportunities and constraints." *African Development Review* 19 (1): 6–25. Tunis: African Development Bank.
- Collier, P., and A. Venables. 2007.** "Rethinking Trade Preferences: How Africa can Diversify its Exports." CEPR Discussion Paper 6262. Centre for Economic Policy Research, London.
- De Wulf, L., and J. B. Sokol. 2005.** *Customs Modernization Handbook.* Washington DC: World Bank.
- Limao, N., and A. J. Venables. 2001.** "Infrastructure, Geographical Disadvantage, Transport Costs and Trade." *World Bank Economic Review* 15: 451–479.
- MacKellar, L., A. Wörgötter, and J. Wörz. 2000.** *Economic Development Problems of Landlocked Countries.* IHS Transition Economic Series No. 14. Vienna: Institut für Höhere Studien.
- Raballand, G., and S. Teravaninthorn. 2008.** "Transport price and cost in Africa, Direction in Development." World Bank, Washington, DC.
- Sachs J., M. Faye, J. McArthur, and T. Snow. 2004.** "The Challenges Facing Landlocked Developing Countries." *Journal of Human Development* 5. 5 (1): 32–68.
- Southern Africa Global Development Hub. 2007.** "Issue No. 46: A monthly update of upcoming activities from the SA Trade Hub offices in Gaborone, Botswana." [<http://www.satradehub.org/index.php?id=543>].
- United Nations Conference on Trade and Development (UNCTAD). 2006.** "Landlocked Developing Countries: Facts and Figures 2006." [<http://www.unctad.org/Templates/webflyer.asp?docid=7273&intItemID=3617&lang=1>].
- . 2008. *UNCTAD Handbook of Statistics.* Geneva.
- United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). 2003.** *Landlocked Developing Countries Series, No. 1: Transit Transport Issues in Landlocked and Transit Developing Countries.* New York. [<http://www.unescap.org/publications/detail.asp?id=987>].
- . 2004. "Transport Route Analysis and UNESCAP's Time/Cost Methodology." [<http://www.unescap.org/tdw/index.asp?MenuName=RouteStudiesWelcome>].
- World Bank. 2001.** "Privatization and Deregulation in Mexico." Independent Evaluation Group, World Bank, Washington, DC. [<http://lnweb90.worldbank.org/oed/oeddoclib.nsf/DocUNIDViewForJavaSearch/02BA59E41714B982852567F5005D8A07>].
- World Bank. n.d.** *Logistics Performance Index.* Washington, DC: LPI database. [[www.worldbank.org/lpi](http://www.worldbank.org/lpi)].
- World Economic Forum. 2007.** *The Global Competitiveness Report 2007–2008.* Basingstoke: Palgrave Macmillan. [<http://www.weforum.org/en/initiatives/gcp/Global%20Competitiveness%20Report/index.htm>].
- [<http://www.doingbusiness.org/>].
- [<http://www.integratedframework.org/>].
- <http://www.worldbank.org/transport>, Publication and Reports, under Knowledge Resources.