



Example of logistic chain cost analysis: the Northern Corridor

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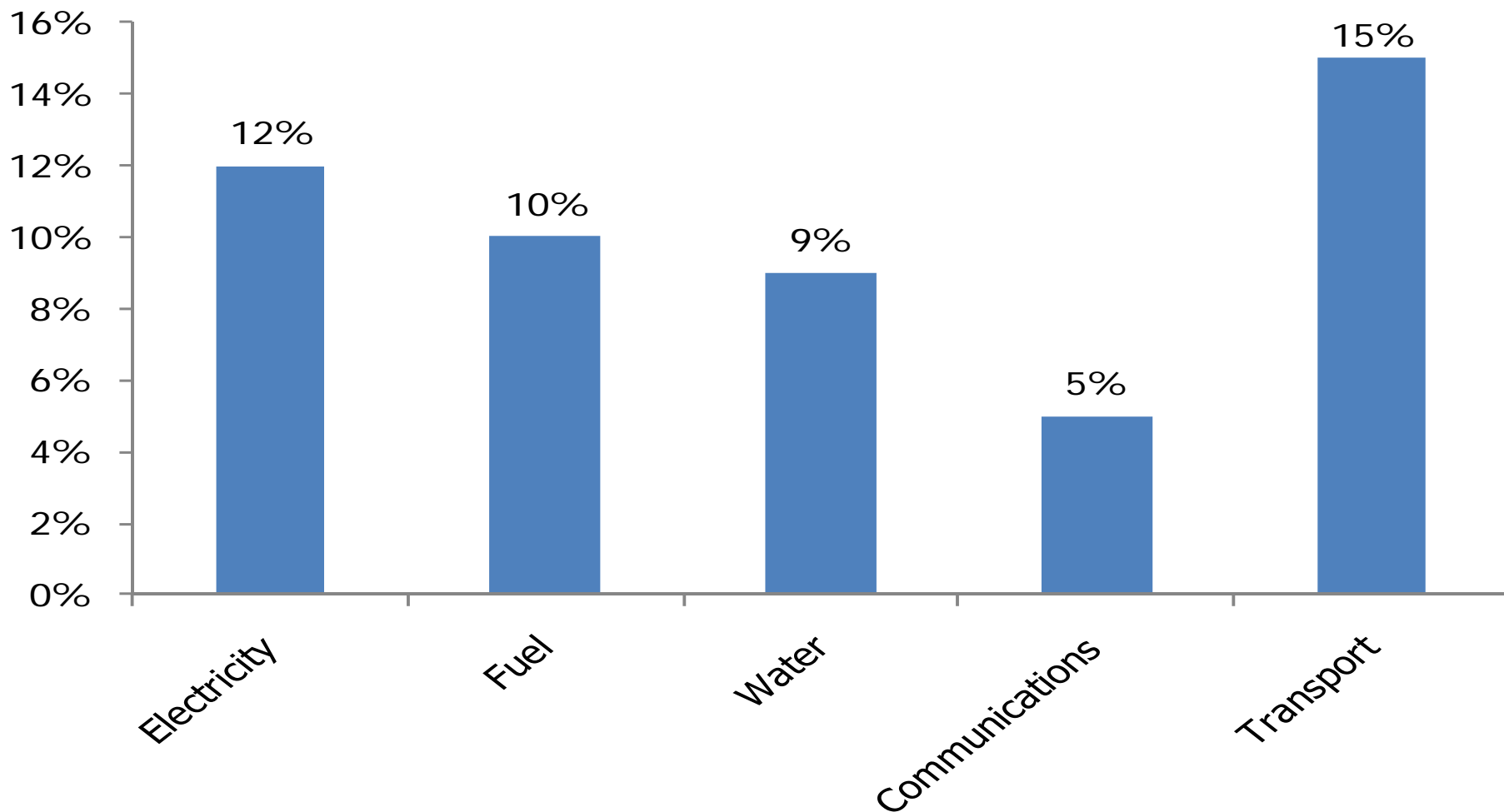
OUTLINES

- **I- Methodology**
- **II- Mombasa port procedures and costs**
- **III- Total logistic costs structure**
- **IV-Program activities interconnection**

Few Statements from literature

- *Costs of road transport in Africa were 40% more than rates in South East Asia,*
- *Transport prices for most African landlocked countries range from 15 to 20 % of import costs, a figure three to four times more than in most developed countries.*
- *Road transport in three Francophone African countries (Cameroon, Côte d'Ivoire, and Mali) was up to six times more expensive than in Pakistan and about 40 percent more expensive than in France (where labor rates are much higher).*

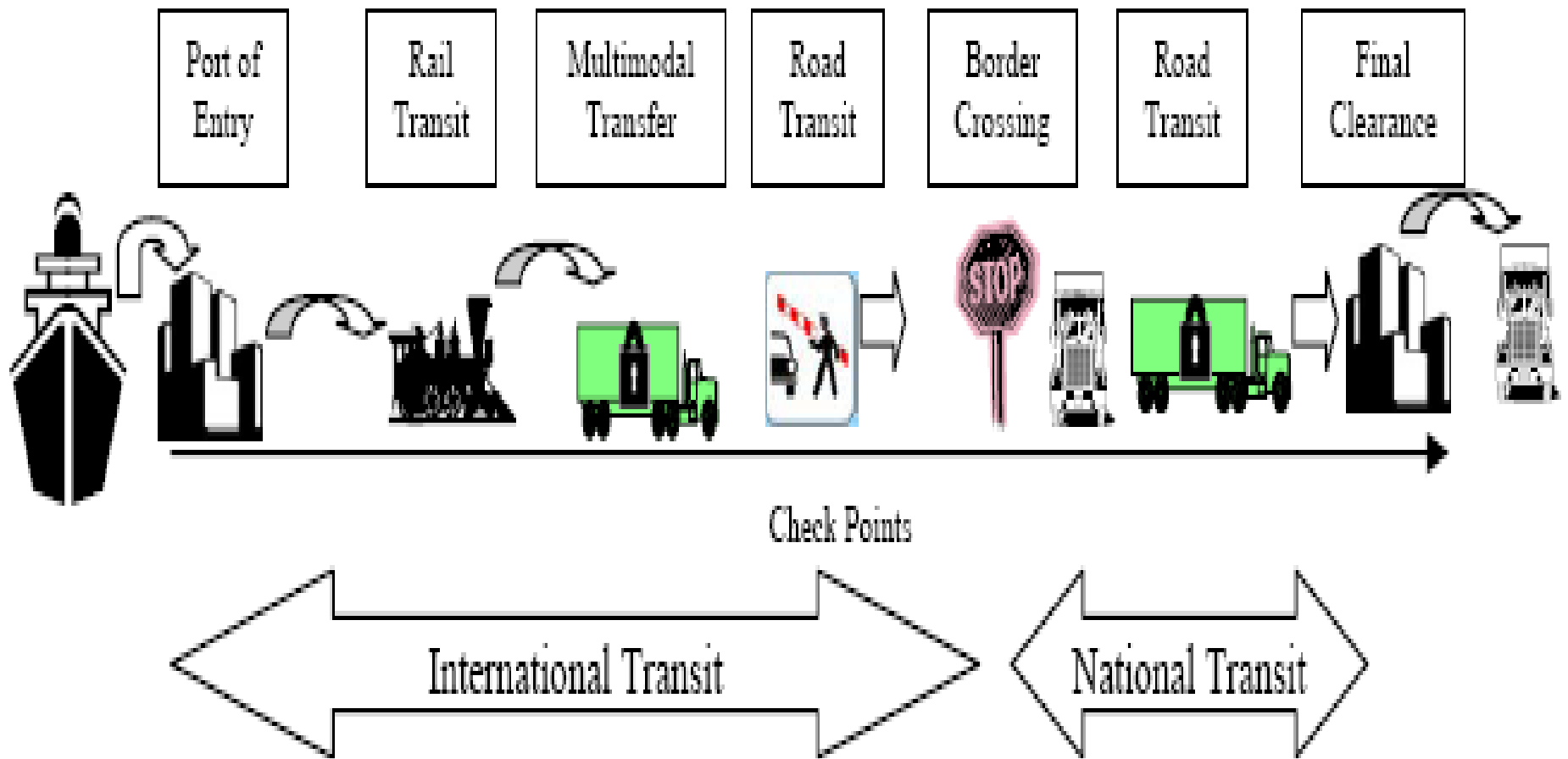
Utility Costs as a % of Monthly Cost (Source: PSF- Rwanda)



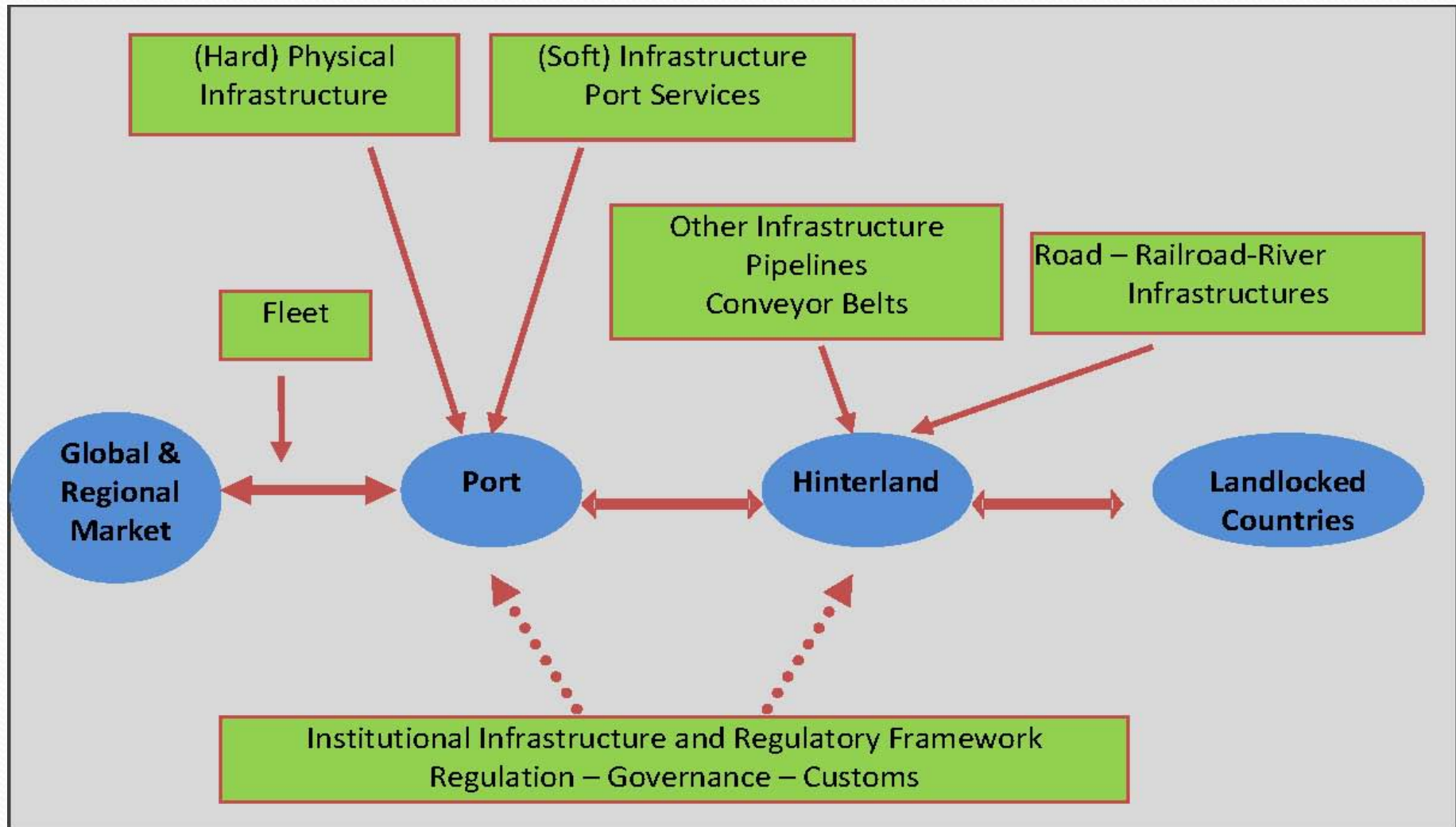


I- Methodology

Typical logistics chain approach (Baumol)



II- Logistics supply chain



Total logistics chain costs

1. Fixed Costs of Shipments

Sea freight to port arrival



2. Transportation Costs

- Road
- Rail
- Pipeline
- Inland Waterways



3. Transit Overheads

- Customs procedures and costs
- Forwarding agent fees and middle men
- Bribes and facilitation payments



4. Hidden Costs

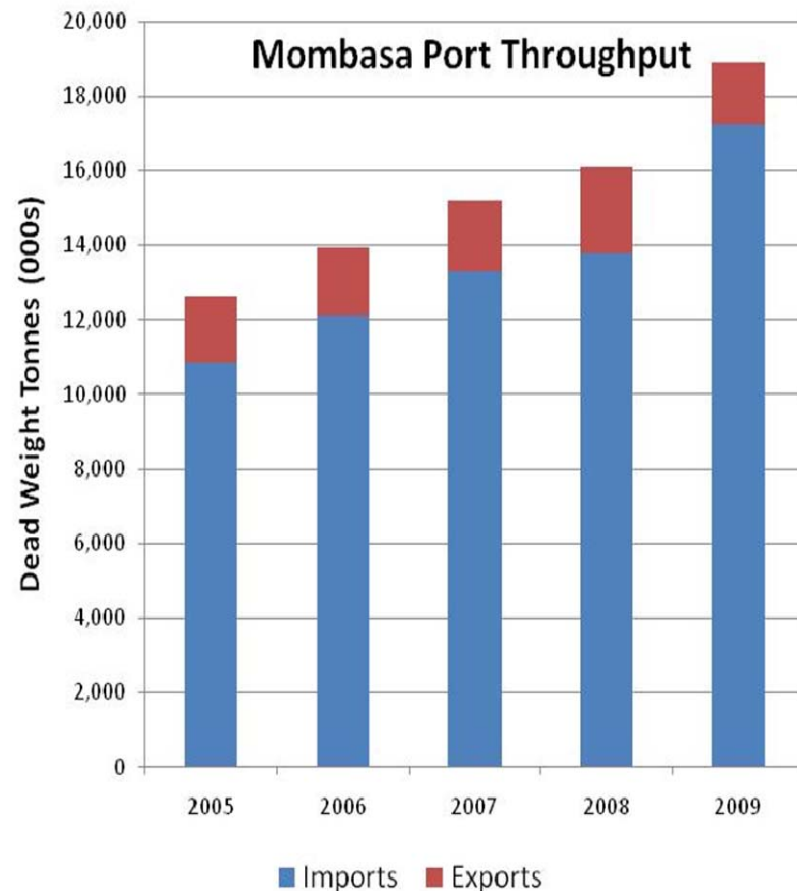
- Direct Costs associated with delays: Additional port charges, container demurrage penalties and other charges
- Indirect Costs associated with delays: Loss in business opportunities due to delays and unreliability. We estimate these based on the opportunity costs of extra inventory



II- Mombasa port clearing procedures, costs and delays

Mombasa Port Traffic

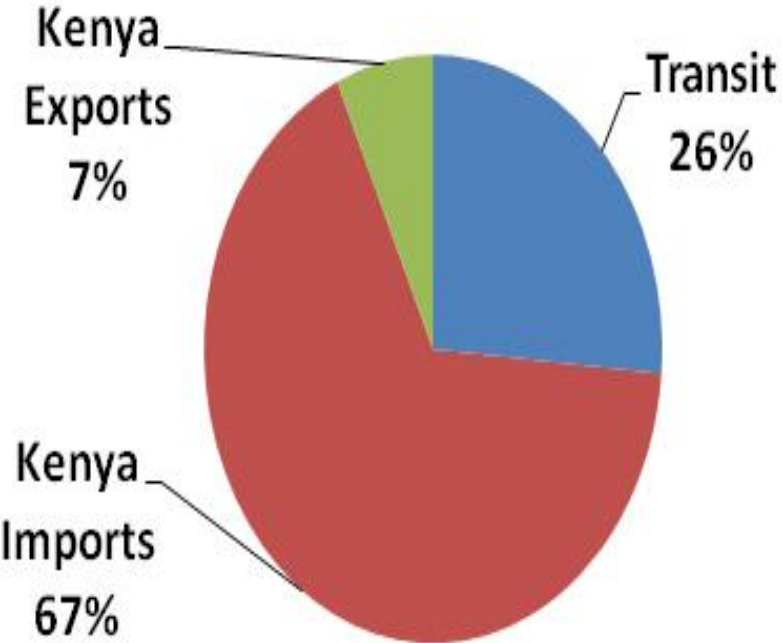
- 100% traffic increase since 2000 : From 9.13 million tonnes - 18.9 million DWT in 2009
- Port at 86% capacity in 2009
- Imports dominate (85% of traffic)



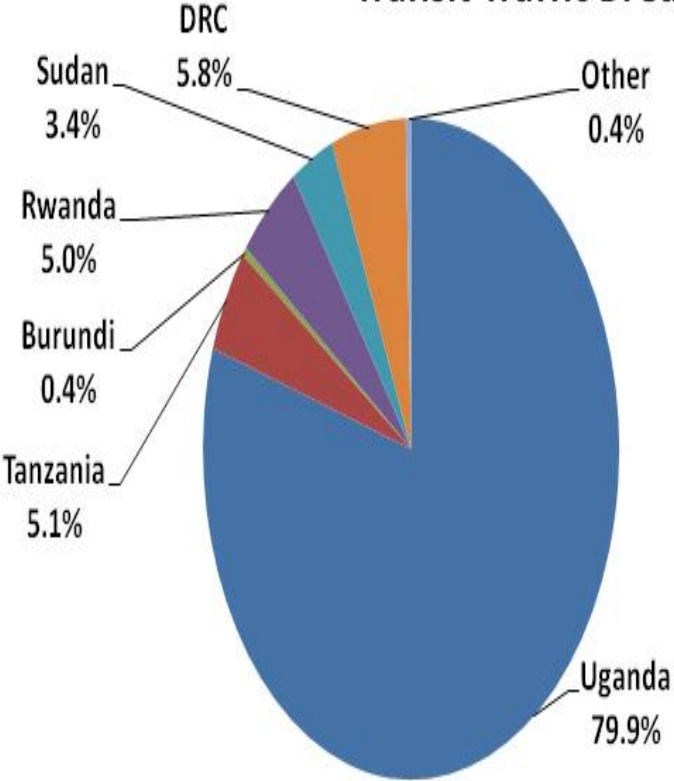
Imports dominate (85% of traffic)

Mombasa Port traffic (ctd)

Origin / Destination of Port Traffic (2009)



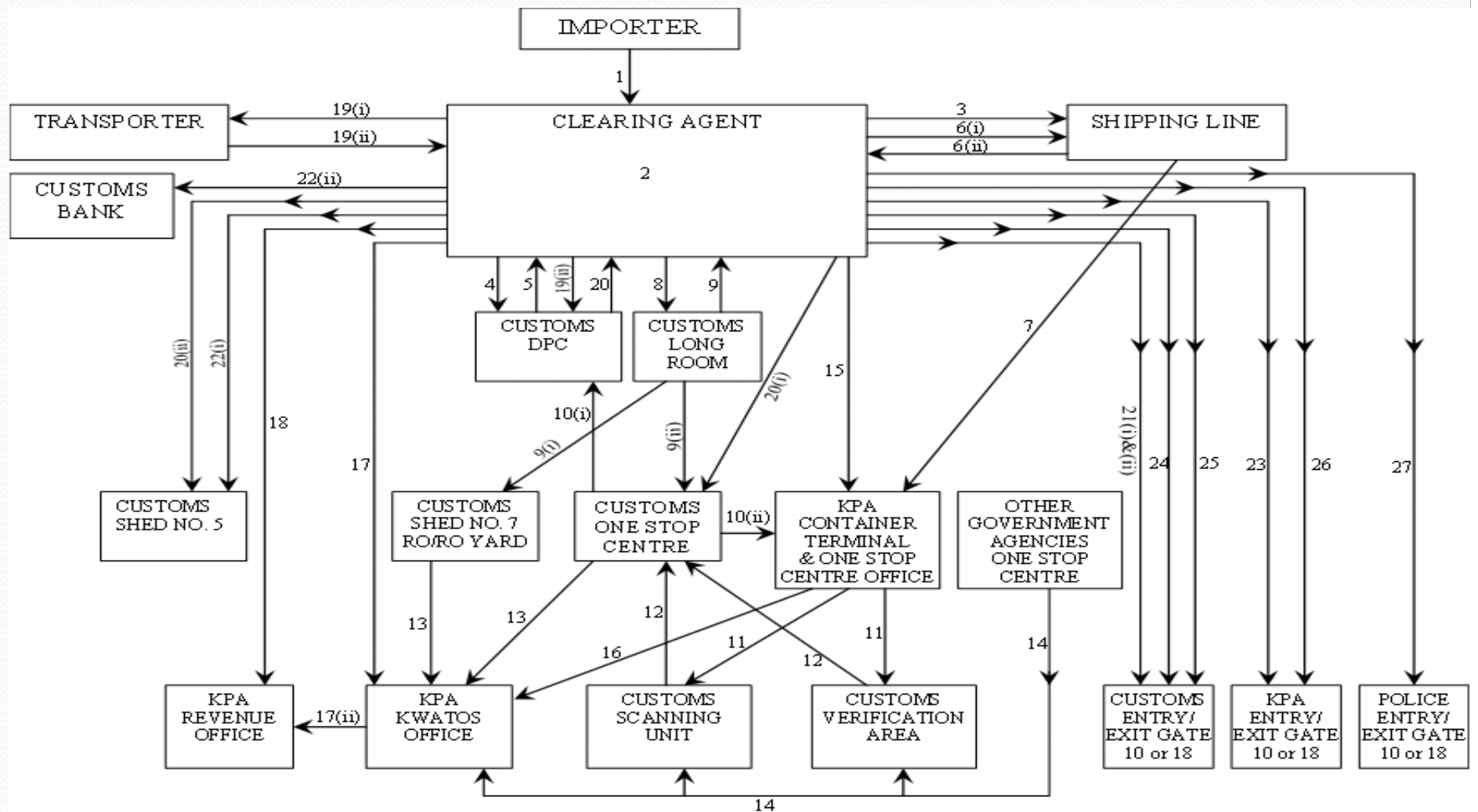
Transit Traffic Breakdown



Sea Freight Shipping Charges, US\$

Import/Export from Mom	Export	Export	Export	Import	Import	Import
Origin	Mombasa	Mombasa	Mombasa	Durban	Singapore	Europe/UK
Destination	Rotterdam	Dubai	Europe	Mombasa	Mombasa	Mombasa
Product	Fresh Agri (refirg)	Fresh Agri (refrig)	Tinned Fruit/Veg	Paper	Batteries	Vehicles
Unit (20, 40 container)	40	40	20	40	20	Prime mover truck
Weight of unit (tons)	20	20	24	25,3	21	50 cbm
Tariff (USD) per Unit	\$4,750	\$3,250	\$1,500	\$1,771	\$1,700	\$800

Flow Chart of Clearance Process for Imported Transit Containers: 27 steps required to clear Transit Container



Direct costs associated with port use (1 / 2)

Agency	Reason	Charge
Clearing Agent	Customs and Port Clearance	~\$200 - \$700 / container (varies depending on domestic / transit and type of goods)
KPA	Stevedoring, shore-handling, Wharfage	Min: \$185 / container (20' transit export) - Max: \$360 / container (40' domestic import)
KPA / CFS	Storage charges	\$25 / day per container after free storage period (7 days domestic, 11 days for transit)
CFS	"Additional charges"	\$400 per container (re-marshalling, CFS handling, transfer from KPA to CFS) These are not always charged

Direct costs associated with port use (2/2)

Agency	Reason	Charge
Shipping Line +	<ul style="list-style-type: none"> -Delivery order fee -Lift on/off charge -Container cleaning -Admin fee -Container handling -Container repair -Bill of lading fee -Equipment management fee -Manifest correction -Terminal handling 	<p>“Additional Fees” add up to \$600 for standard 40’ container (before container deposit or demurrage)</p> <p>Exchange rates charged are highly unfavourable</p>
Shipping Line +	Container deposits and demurrage	<p>Deposit: \$500 (20’ domestic) - \$5,000 (40’ refrigerated transit)</p> <p>Demurrage: \$4-\$14 / day</p>

Average clearing delays (days) from arrival at Mombasa to departure from port / CFS

Delay Element	Mombasa – Nairobi	Mombasa - Kampala	Mombasa - Kigali	Mombasa - Bujumbura	Mombasa - Goma
Port / CFS Dwell Time delays	3	3	3	3	3
Agent delays	8	12	12	15	18
KRA / Clearance delays	4	6	6	6	4
Clearing delays @ Destination	-	-	2	3	2.5
Total Days	15	21	23	27	27.5

**Summary of Direct Port Clearing Costs, per 20' container
Excluding costs from storage and demurrage due to delays**

Cost Element	Mombasa - Nairobi	Mombasa - Kampala	Mombasa - Kigali	Mombasa - Bujumbura	Mombasa - Goma
KPA Charges	\$240	\$222	\$222	\$222	\$222
Shipping Line	\$880	\$1990	\$1990	\$1990	\$1990
CFS	\$380	N/A	N/A	N/A	N/A
Clearing Agent & VAT	\$300	\$650	\$650	\$750	\$900
Total Direct Costs @ Port	\$1,800	\$2,862	\$2,862	\$2,962	\$3,112



III- Total logistic costs structure

Total logistics costs by destination (in \$/20' for container imported from Singapore through Mombasa port)

Mombasa >	Nairobi		Kampala		Kigali		Bujumbura		Goma	
Sea Freight	\$1,700	18.5%	\$1,700	11.5%	\$1,700	8.9%	\$1,700	7.9%	\$1,700	6.6%
Port handling	\$240	2.6%	\$222	1.5%	\$222	1.2%	\$222	1.0%	\$222	0.9%
Shipping Line Charges	\$880	9.6%	\$1,990	13.5%	\$1,990	10.4%	\$1,990	9.3%	\$1,990	7.8%
CFS charges	\$380	4.1%	-	-	-	-	-	-	-	-
Road transport	\$1,300	14.2%	\$3,400	23.1%	\$6,500	34%	\$8,000	37.2%	\$9,500	37%
Clearing Agency & VAT	\$300	3.3%	\$650	4.4%	\$650	3.4%	\$750	3.5%	\$900	3.5%
Direct costs of delay	\$295	3.2%	\$334	2.3%	\$445	2.3%	\$545	2.5%	\$555.3	2.2%
Indirect costs of delay	\$4,079	44.5%	\$6,451	43.7%	\$7,635	39.9%	\$8,289	38.6%	\$10,807	42.1%
Total Logistics Costs	\$9,174	100%	\$14,747	100%	\$19,143	100%	\$21,496	100%	\$25,674	100%

Sea Freight
Shipping charges*
8%

Northern Corridor: Total logistic costs structure

Port handling
Charges
1%

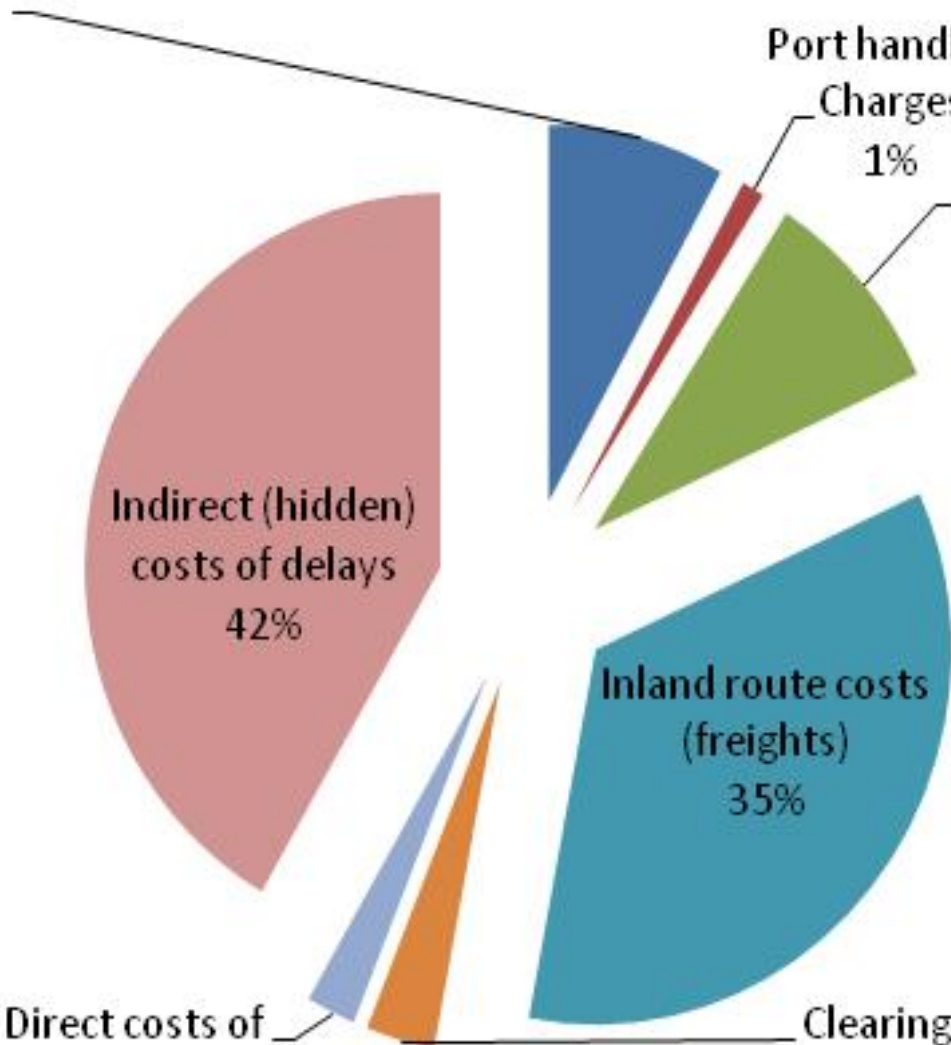
Shipping lines
charges
9%

Indirect (hidden)
costs of delays
42%

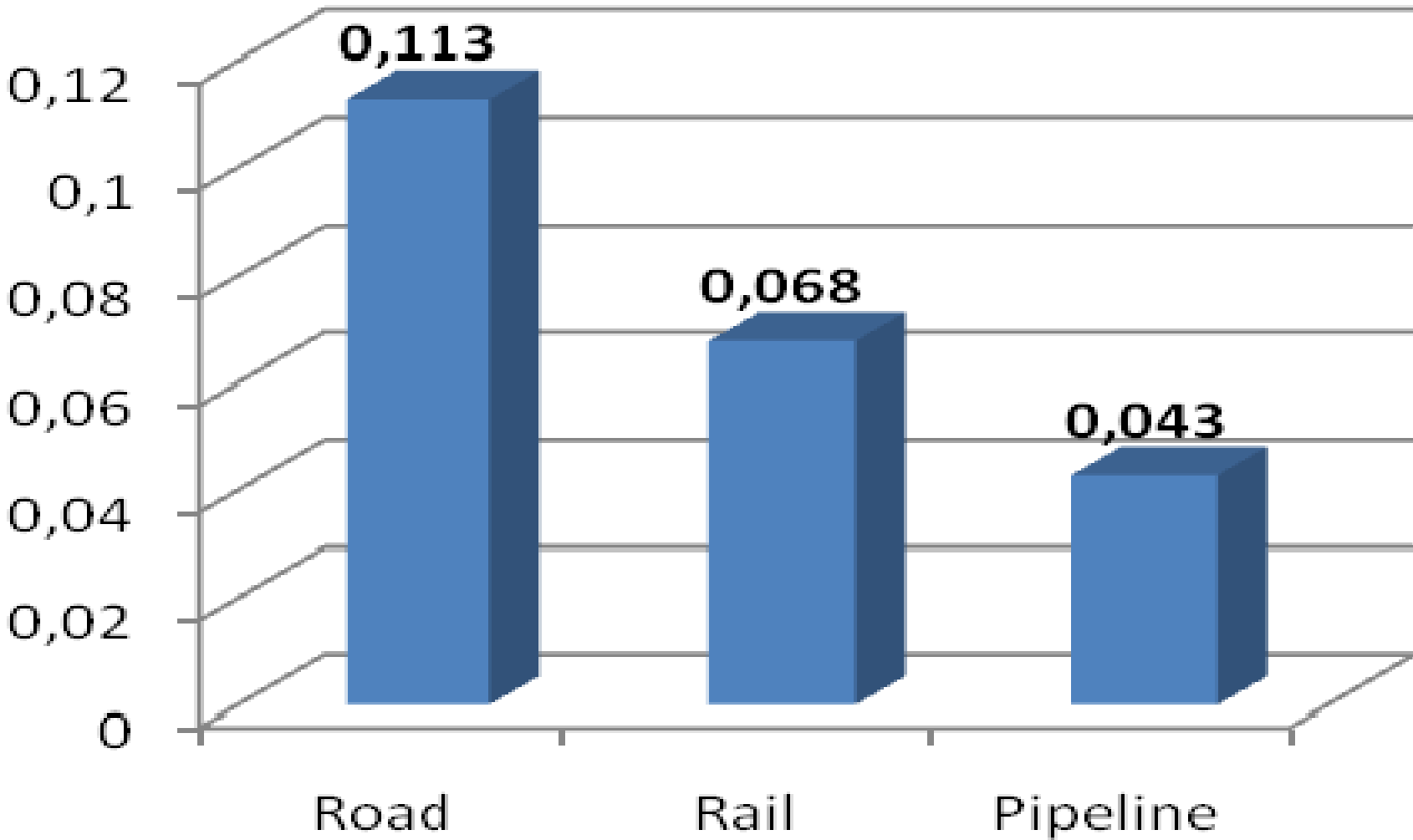
Inland route costs
(freights)
35%

Direct costs of
delays
2%

Clearing fees
+ VAT
3%



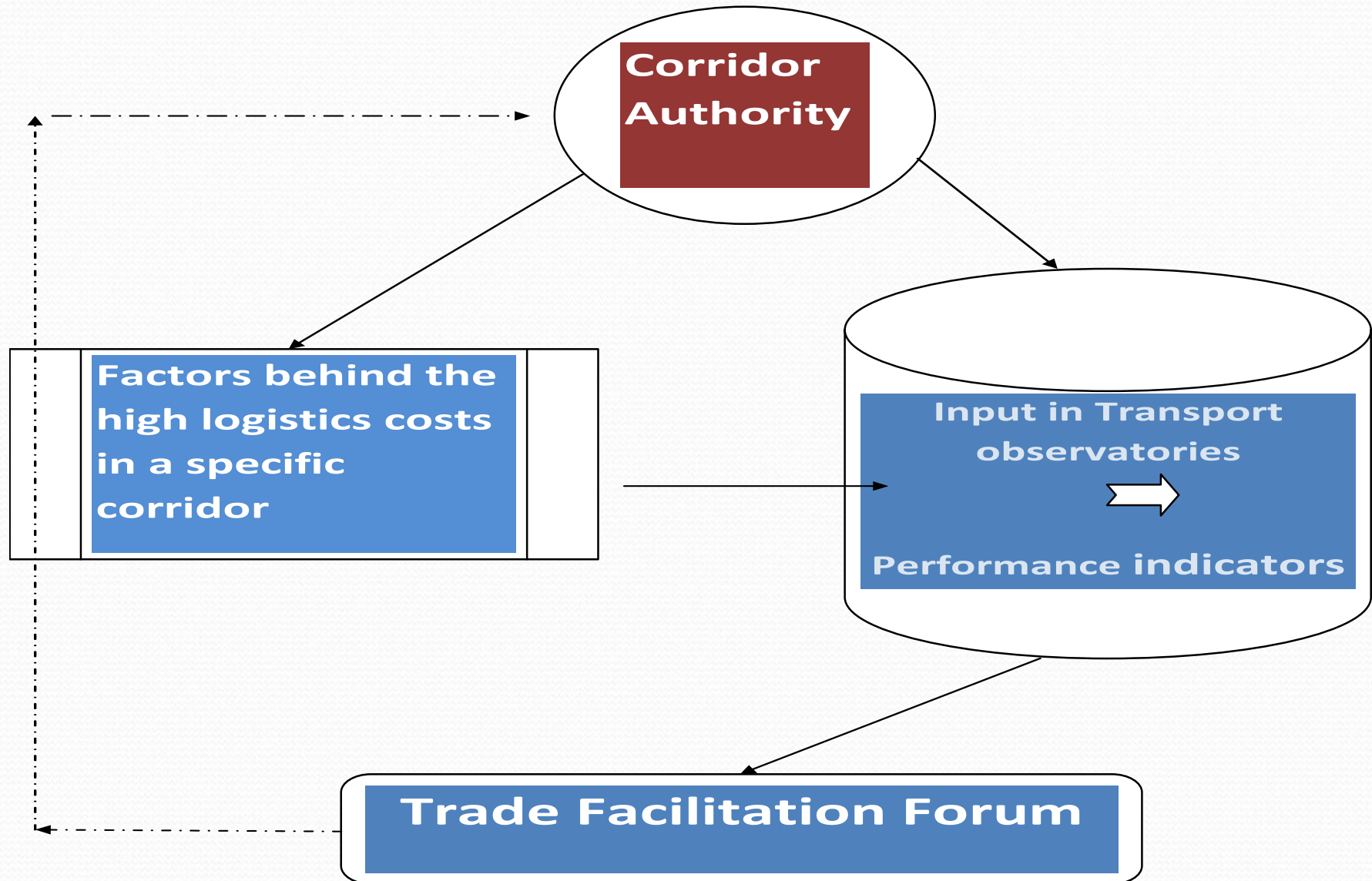
Operating costs per T-km (US\$)





IV-Program activities interconnection

Program activities interconnection





Thank you for your attention