

More on KPI criteria for green transport corridors

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Expected results

A selection of relevant key performance indicators that describe sustainable transport logistics performance in green corridors.

Balance the desire to cover all aspects with practical implementation aspects, as well as user friendliness.

In order to ensure relevance host an expert workshop

Background

The use of key performance indicators

Status reports, management of complex processes

Indicator may change behaviour of organisations

KPI can be counter productive in relation to the original objective due to poor indicator design.

If relevant they may serve the purpose well.

Trade off between short and long term ambitions.

Need to capture relevant data with sufficient accuracy with sufficient effort in order to not put all effort in data capturing itself.

Objective of task 1

The aim is to describe sustainability performance based on a minimum of input data based on easy accessible and accurate data in order to present robust relevant key performance indicators.

Definition of sustainable transport logistics

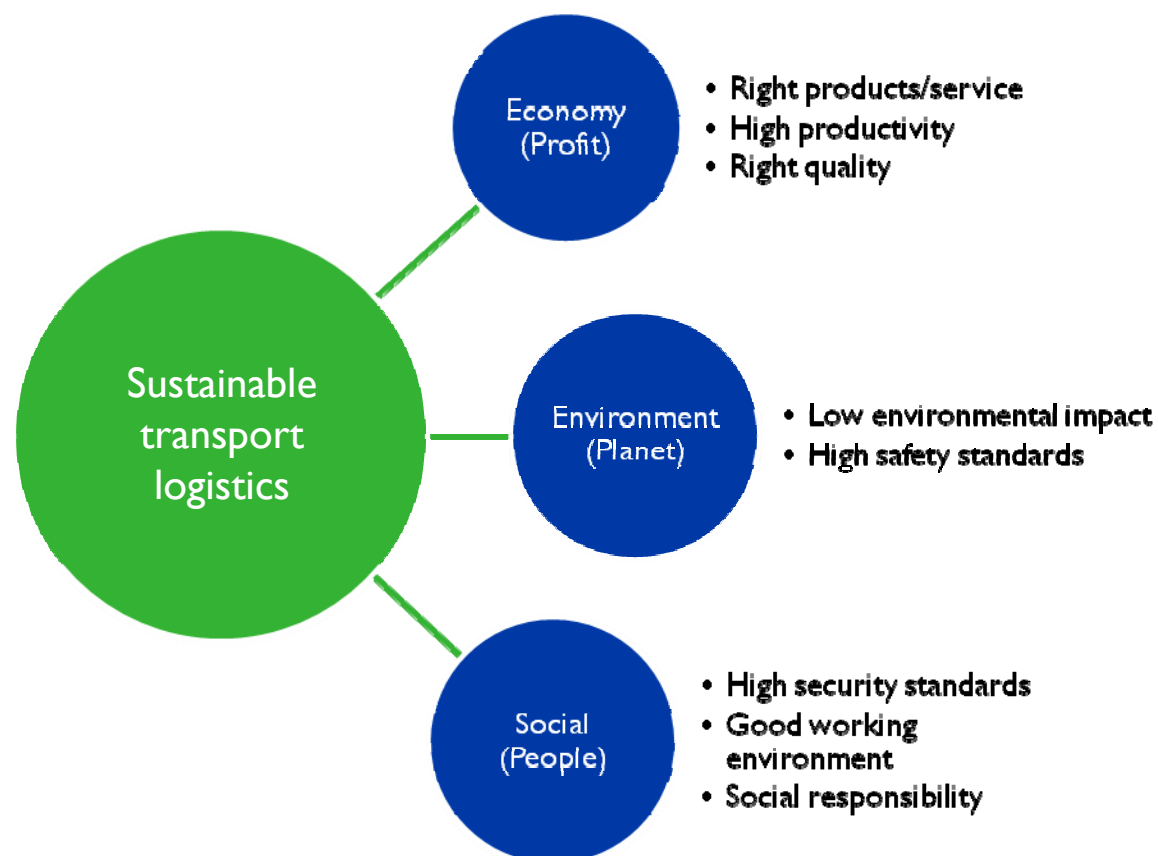
Transport logistics that fulfills or aims at improved economical and environmental performance meanwhile social responsibility is considered.

For companies or other organisations active within the logistics area as provider or user of transport logistics services this means a general aim at:

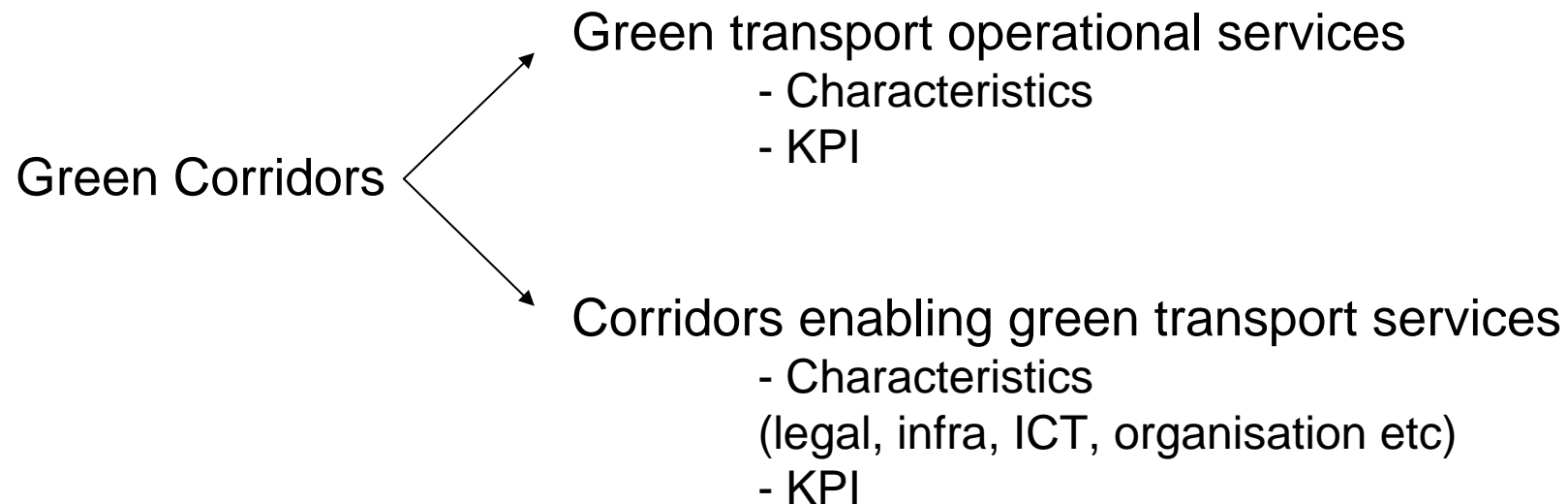
- High productivity
- Right offer of services
- Good quality
- Minimized negative environmental impact
- Active reducing safety and security risks

In addition, sustainable logistics should include and develop human values within and outside the organisation.

Definition of sustainable transport logistics



There are operational and enabling performance indicators

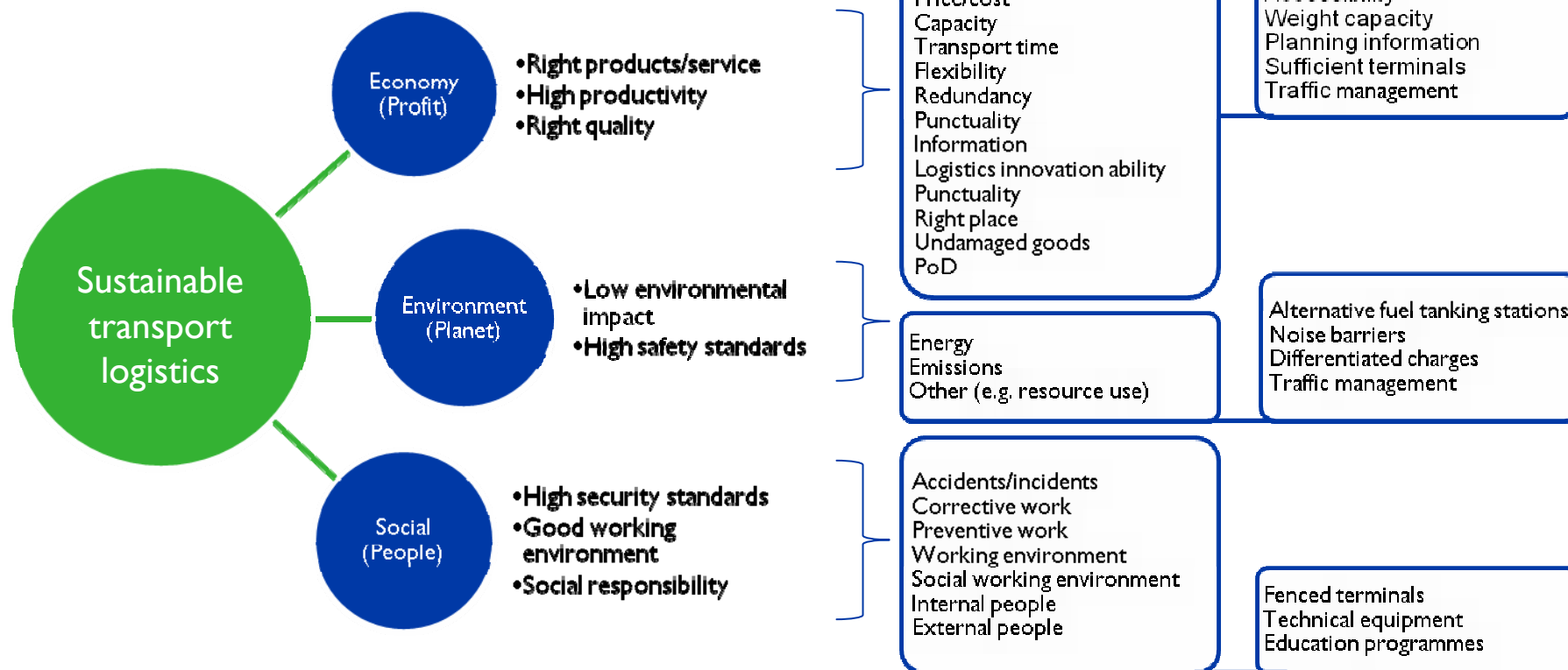


KPI structure

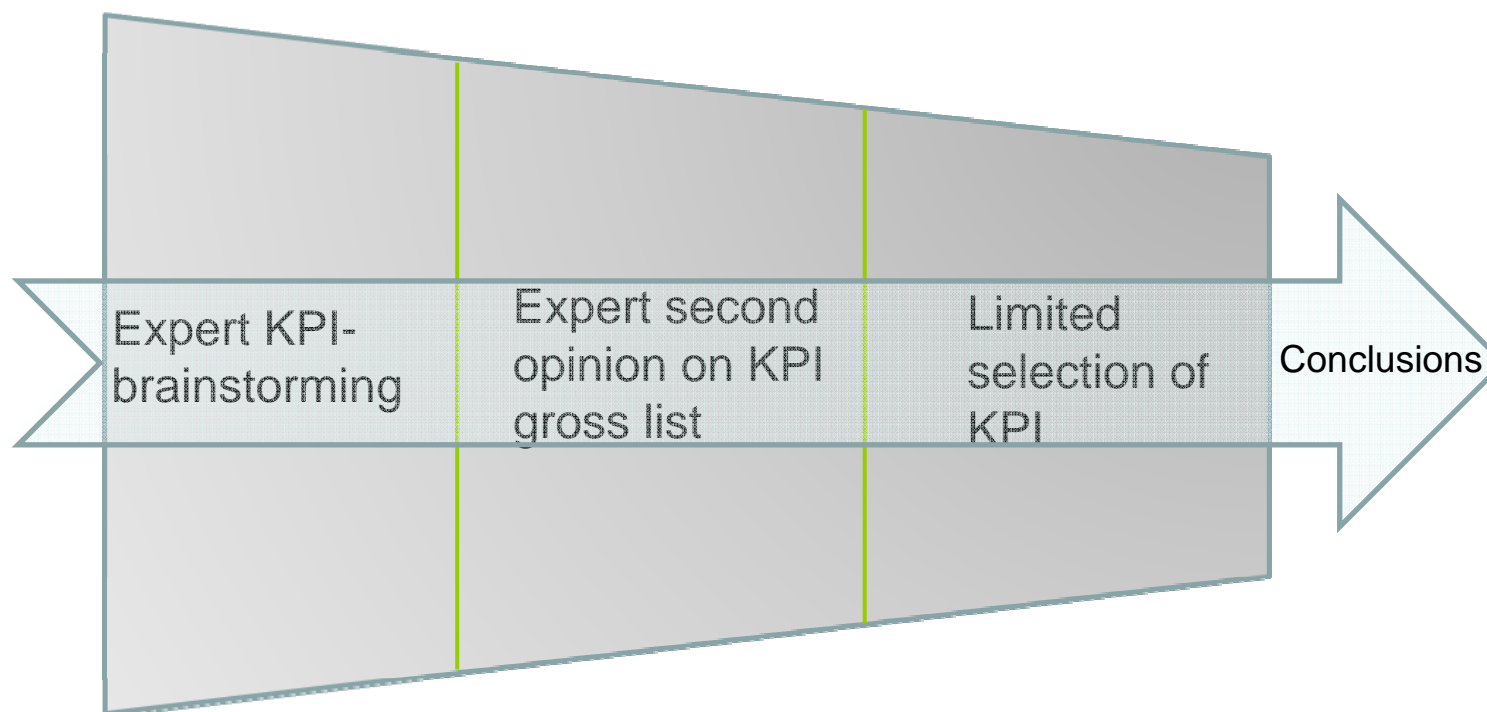
Operational				Enabling			
Transport service		Corridor service		Infrastructure		Policies and standards	
Relative	Absolute	Relative	Absolute	Relative	Absolute	Relative	Absolute



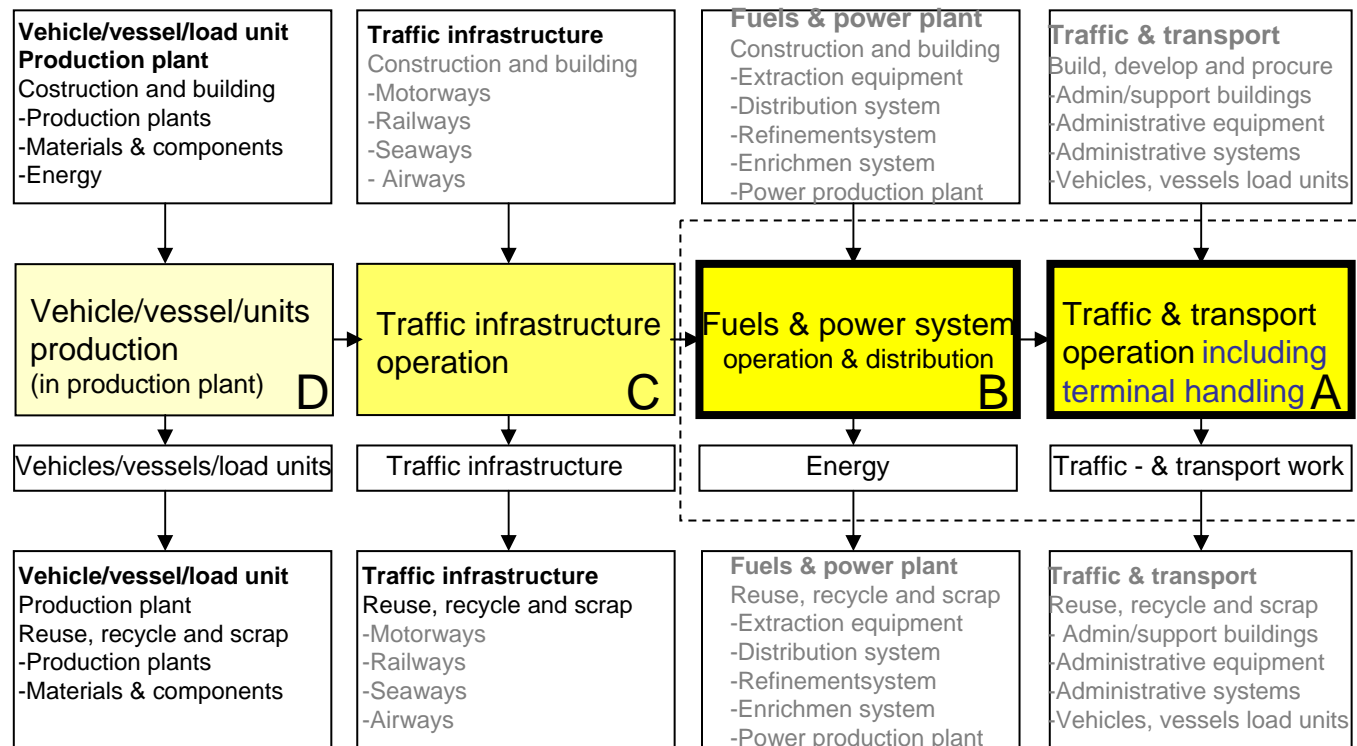
KPIs for sustainable transport logistics

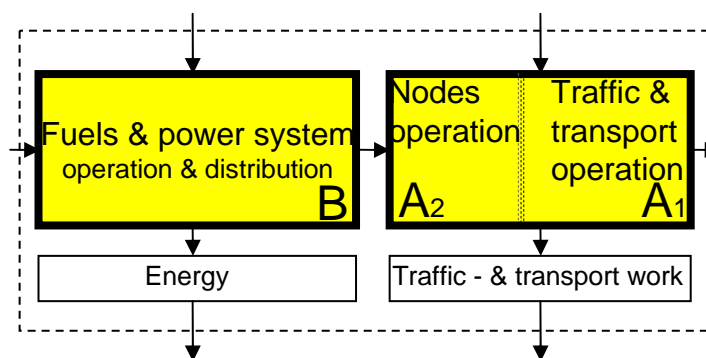


Expert workshop in June



System boundaries





Expert brainstorming

Social

- Security
- Traffic safety
- Working climate

Expert brainstorming

Economy

- Cost
- Production
- Revenue
- Customer

Expert brainstorming

Environment

- Climate
- Nature
- Health
- Energy
- Dangerous goods
- Risk assessment

Supergreen

PIs that are part of the Supergreen selected indicators:

Efficiency; Absolute unit costs [€/tone] & Relative unit costs [€/tkm]

Transport time [hours]

Reliability (time precision) [%]

ICT applications [various quality indicators]

Frequency of service [frequency]

Cargo security [number]

Cargo safety [number]

Greenhouse gases; CO₂-eq [g/tonkm?]

Sulphur oxide, SO_x [g/tonkm?]

Nitrogen oxide, NO_x [g/tonkm?]

Particulate matters, PM_{2.5} or PM [g/tonkm?]₁₀

Congestion [lost hours/tonkm]

Bottlenecks [various quality indicators]

Land use [percentage of specific land use intrusion]

Traffic safety [number]

Noise [percentage of noise intrusion]

Stakeholder	Area	Operative efficiency		Enabling efficiency
		Absolute	Relative	
Transport provider	Profit	Turnover [€]	Turnover per ton goods [€]	
		Volumes [ton]	Utilization, volumes/capacity [%]	
		Number of shipments [n]	Turnover per shipment [€]	
		Cost [€]	Contribution to cover fixed costs [€] per tonkm	Cost per vkm [€/km]
		Result [€]	Margin [%]	Traffic throughput
		Equity [€]	Equity asset ratio [%]	
		Capital employed [€]	Return on capital employed [%] (equity)	
		Capacity [ton]	Capacity/capital employed [ton/€]	Infrastructure capacity
		Redundancy plans [1/0]	n/a	Multimodal terminals availability
		Transport time [h]	n/a	Infrastructure ability
		Transport time tables [1/0]	Transport time tables per mode of transport [%]	Infrastructure ability
		On time delivery [n]	Deviation ratio [%]	Traffic throughput
		Track & trace, PoD [1/0]	n/a	
		Undamaged goods [n]	Undamaged goods per shipment [%]	
		Total number of invoices [n]	Turnover per invoice [€]	
		Invoice errors [n]	Error invoice/total number of invoice [%]	
		Telephone responding time [n signals]	Signals per telephone call [n/call]	
		e-mail responding time [h]	Hours per e-mail [h/mail]	

Perceived performance

	Planet	Total energy use [MJ, kWh]	Energy turnover ratio [kWh/€]	
		Renewable energy use [MJ, kWh]	Renewable energy ratio [%]	Tank stations offering alternative fuels
		Carbondioxide, CO2 [ton]	Carbondioxide, CO2 [g/tonkm]	
		Emissions [engine standard]	Engine standards distribution [%]	
		Dangerous effluents accidents [n]	Ratio of effluents per transport work [n/shipment]	
		Systematic env-work, ISO 14001[1/0]	n/a	
		Systematic DG-work, ISO 9001DG[1/0]	n/a	
	People	Number of thefts	Ratio of thefts per total number of shipments [%]	Fenced infrastructure
		Cost of losses [€]	Ratio of losses costs/turnover [%]	Safe parking
		Cost of prevention [€]	Ratio of prevention cost/profit [%]	Surveying cameras
		Systematic security work, ISO 31000 [1/0]	n/a	
		Traffic incidents reporting [n]	Ratio incidents/total number of shipments [%] (vkm)	
		Systematic traffic safety work, ISO 39000 [1/0]		
		Number of employees		
		Total days short notice sick leave [d]	Rate of short notice sick leave [%]	
		Number of males	Ratio of males [%]	
		Number of females	Ratio of females [%]	

Data capturing

- Accounting
- EDI (Edifact)
- Databases

Shipper

Edifact messages

Booking

Booking confirmation

Shipment ID

Deviation report

Status report

Delivery notification

Invoice information

Invoice

Transport

Booking confirmation

-Mode of transport

-Capacity

-Euroclass

-Utilization (dedicated or shared)

-TFC FC_{Main} + FC_{Aux}

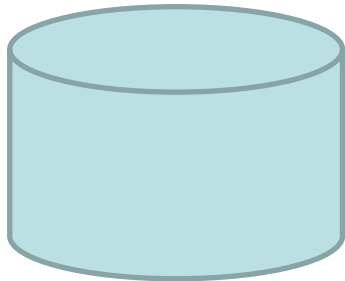
-FQ (c + s)

Status report

-Distance/route

Consignee

Databases



Transport time tables

Road, Rail, Fairway

- Operative and enabling performance
- Electricity
- Risk assessment on thefts/accidents/spill effects

Intermodal terminals

- Operative and enabling performance
- Risk assessment on thefts

Staff

- Sicknes leave
- Education

Vehicle/vessel

- Engine performance
- Fuel quality
- Safety (fire etc)
- Security (fencing)
- Traffic safety (alcolock, safety belt, speed limiters, S&S)

Overall KPI – "profit"

- On time delivery
- Total/relative turnover
- Total/relative costs
- Profit/Margin

Overall KPI – “planet”

- Total/relative energy use
- Total/relative CO2 emissions
- Engine quality (distribution)
- Fuel quality (s + c)

Overall KPI – “people”

- DGMS; ISO 9001Dg (1/0)
- SMS; ISO 31 000 (1/0)
- TSMS; ISO 39 000 (1/0)