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Sustainability Indicators



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Content

- Indicators for SD: definition and principles
- CSD indicators
- (Sustainable) Mobility indicators - GER

Indicators for sustainability: definition and principles

Definition:

Parameters based on collectively measured statistical values characterizing the state and process of SD of a given area or application

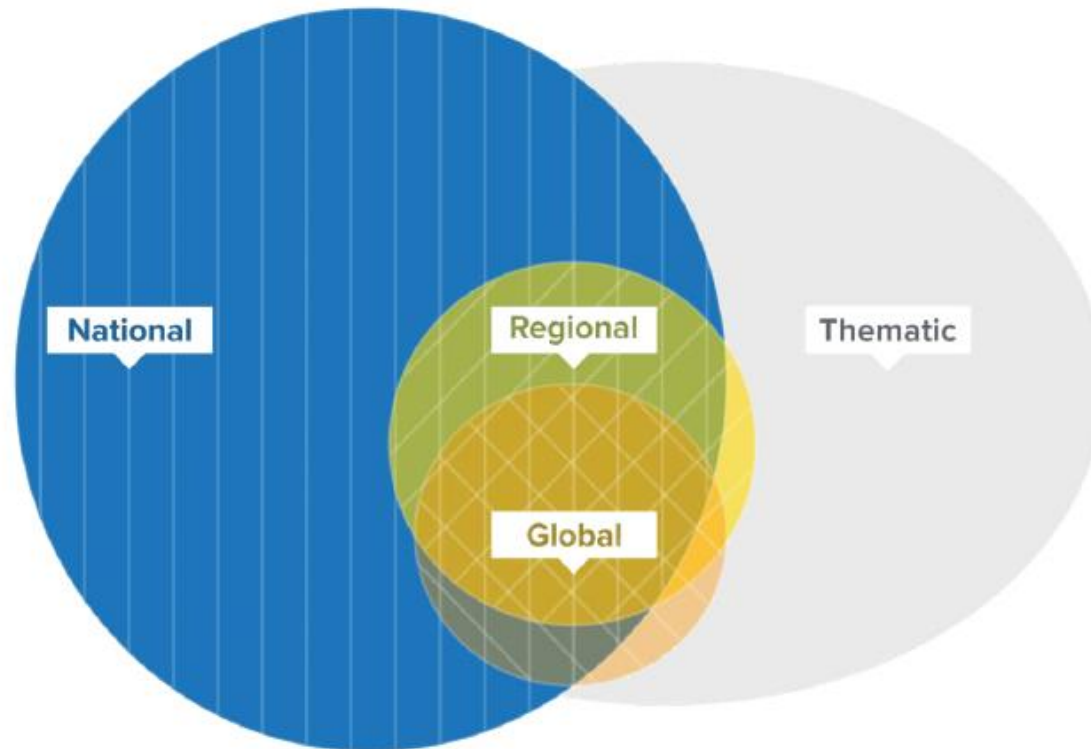
Process: Indicators (at the national) level...

- ...often derived through iterative, dialogue processes
- ...involving diverse stakeholders (incl. Civil society)
- ...allow considering local aspects and different perspectives



Indicators for sustainability: definition and principles

Address level



Indicators for sustainability: definition and principles

Principles for global indicators

Figure 3: Towards an integrated indicator framework: Ten principles for Global Monitoring Indicators

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- Ten principles
1. Limited in number and globally harmonized
 2. Simple, single-variable indicators, with straightforward policy implications
 3. Allow for high frequency monitoring
 4. Consensus based, in line with international standards and system-based information
 5. Constructed from well-established data sources
 6. Disaggregated
 7. Universal
 8. Mainly outcome-focused
 9. Science-based and forward-looking
 10. A proxy for broader issues or conditions

Source: LCSDSN, 2015.

Indicators for sustainability: definition and principles

Exemplary global indicators

Indicator number	Potential and Indicative Indicator	Potential lead agency or agencies	Other goals indicator applies to
Goal 1. End poverty in all its forms everywhere			
1	Proportion of population below \$1.25 (PPP) per day (MDG Indicator)	World Bank	8
2	Proportion of population living below national poverty line, by urban/rural (modified MDG Indicator)	World Bank, UN DESA	11
3	Multidimensional Poverty Index	UNDP, World Bank, UNSD, UNICEF	2, 3, 4, 8, 11
4	Percentage of eligible population covered by national social protection programs	ILO	8, 10, 11
5	Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected.	FAO, UNDP, UN-Habitat	2, 5, 10, 11
6	Losses from natural disasters, by climate and non-climate-related events (in US\$ and lives lost)	UNISDR, FAO, WHO, CRED	2, 6, 11, 13
7	Total fertility rate	UN Population Division, UNFPA	
	Complementary National Indicators:		
	1.1. Poverty gap ratio (MDG Indicator)		
	1.2. Percentage of population using banking services (including mobile banking)		
	1.3. [Indicator on equal access to inheritance] – to be developed		
	1.4. [Disaster Risk Reduction Indicator] – to be developed		

Source: LCSDSN, 2015.

Indicators for sustainability: definition and principles

Exemplary global indicators

Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all			
<i>See Annex 1 (page 67) for a synthesis of how indicators track sustainable energy for all across all goals</i>			
50	Share of the population using modern cooking solutions, by urban/rural	Sustainable Energy for All, IEA, WHO	1, 3, 5, 9, 11, 12
51	Share of the population using reliable electricity, by urban/rural	Sustainable Energy for All, IEA, World Bank	1, 3, 5, 9, 11, 12
52	Implicit incentives for low-carbon energy in the electricity sector (measured as US\$/MWh or US\$ per ton avoided CO ₂)	IEA, UNFCCC	11, 13
53	Rate of primary energy intensity improvement	Sustainable Energy for All, IEA	11, 13
	Complementary National Indicators: 7.1. Primary energy by type 7.2. Fossil fuel subsidies (\$ or %GNI) 7.3. Share of energy from renewables		

Source: LCSDSN, 2015.

Indicators for sustainability: definition and principles

Exemplary global indicators

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation			
<i>See Annex 1 (page 67) for a synthesis of how indicators track industrialization across all goals</i>			
58	Access to all-weather road (% access within [x] km distance to road)	World Bank	2, 7, 11
59	Mobile broadband subscriptions per 100 inhabitants, by urban/rural	ITU	2, 11, 17
60	Index on ICT maturity	ITU	17
61	Manufacturing value added (MVA) as percent of GDP	World Bank, OECD, UNIDO	8, 11
62	Total energy and industry-related GHG emissions by gas and sector, expressed as production and demand-based emissions (tCO ₂ e)	UNFCCC, OECD, UNIDO	7, 11, 13
63	Personnel in R&D (per million inhabitants)	OECD, UNESCO	8, 17
Complementary National Indicators:			
9.1. Percentage of households with Internet, by type of service by urban/rural areas			
9.2. Employment in industry (% of total employment)			
Goal 10. Reduce inequality within and among countries			
<i>See Annex 1 (page 67) for a synthesis of how indicators track inequalities across all goals</i>			
64	[Indicator on inequality at top end of income distribution: GNI share of richest 10% or Palma ratio]	UNSD, World Bank, OECD	1, 8
65	Percentage of households with incomes below 50% of median income ("relative poverty")	World Bank, OECD, UNSD	1, 8
Complementary National Indicators:			
10.1. Gini Coefficient			
10.2. Income/wage persistence (intergenerational socioeconomic mobility)			
10.3. Human Mobility Governance Index			
10.4. Net ODA to LDCs as percentage of high-income countries' GNI (modified from MDG Indicator)			
10.5. Indicator on share of LDCs / LIC representatives on boards of IMF / WB (and other institutions of governance)			
10.6. [Remittance transfer costs] – to be developed			

Source: LCSDSN, 2015.

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CSD Indicators:

Areas for global indicators

CSD indicator themes

- Poverty
 - Governance
 - Health
 - Education
 - Demographics
 - Natural hazards
 - Atmosphere
 - Land
 - Oceans, seas and coasts
 - Freshwater
 - Biodiversity
 - Economic development
 - Global economic partnership
 - Consumption and production patterns
-

Source: UN, 2007.

CSD Indicators:

Areas for global indicators

<i>Theme</i>	<i>Sub-theme</i>	<i>Core indicator</i>	<i>Other indicator</i>
Poverty (continued)	Access to energy	Share of households without electricity or other modern energy services	Percentage of population using solid fuels for cooking
	Living conditions	Proportion of urban population living in slums	
Governance	Corruption	Percentage of population having paid bribes	
	Crime	Number of intentional homicides per 100,000 population	

Source: UN, 2007.

CSD Indicators:

Areas for global indicators

Theme	Sub-theme	Core indicator	Other indicator
Consumption and production patterns	Material consumption	Material intensity of the economy	Domestic material consumption
	Energy use	Annual energy consumption, total and by main user category	Share of renewable energy sources in total energy use
		Intensity of energy use, total and by economic activity	
	Waste generation and management	Generation of hazardous waste	Generation of waste
		Waste treatment and disposal	Management of radioactive waste
	Transportation	Modal split of passenger transportation	Modal split of freight transport
		Energy intensity of transport	

CSD Indicators: Showing the interlinks

	Poverty	Governance	Health	Education	Demographics	Natural hazards	Atmosphere	Land	Oceans, Seas and Coasts	Fresh Water	Biodiversity	Economic Development	Global economic partnership	Cons. and Product. Patterns
Population growth rate					■									
Total fertility rate					■									
Dependency ratio					■									
Ratio of local residents to tourists in major tourist regions					■				■					■
Percentage of population living in hazard prone areas	■		■		■	■		■						
Human and economic loss due to natural disasters	■		■		■	■		■						
Emissions of greenhouse gases							■							■
Carbon dioxide emissions							■							■
Consumption of ozone depleting substances							■							■
Ambient concentration of air pollutants in urban areas	■		■				■							■
Land use change	■		■		■		■	■						■
Land degradation	■		■		■		■	■						■
Land affected by desertification	■		■		■		■	■						■
Arable and permanent	■		■		■		■	■						■

CSD Indicators: Showing the interlinks

	Poverty	Governance	Health	Education	Demographics	Natural hazards	Atmosphere	Land	Oceans, Seas and Coasts	Fresh Water	Biodiversity	Economic Development	Global economic partnership	Cons. and Product. Patterns
Intensity of energy use, total and by sector							■					■		■
Generation of waste			■									■		
Generation of hazardous waste			■				■	■	■	■			■	
Management of radioactive waste		■	■											
Waste treatment and disposal		■	■				■	■				■		
Modal split of passenger transportation		■					■	■				■		■
Modal split of freight transport		■					■	■				■		■
Energy intensity of transport							■	■				■		■

CSD Indicators: Adapting the indicators to a particular country / topic

Relevance ←

	Relevant	Related indicator relevant	Relevant but missing	Irrelevant
Available				
Potentially available				
Related data available				
Not available				

Data availability ↑

Legend		To be used		To be identified
		To be modified		To be removed

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Mobility Indicators in GER: global level

Nr.	Indicator
Directly referring to transport	
11a	Transport intensity of freight transport (tonne-km/GDP)
11b	Transport intensity of passenger transport (passenger-km/GDP)
11c	Proportion of freight transported by rail
11d	Proportion of freight transported by inland shipping
Indirectly referring to transport (cross-sectoral)	
1a	Energy Productivity
1b	Primary energy consumption within the territory of Germany
2	Greenhouse gas emissions
3a	Proportions of energy consumption from renewable energy
4	Land use for housing and transport
13	Concentration of air pollutants
14	Premature mortality (all causes)

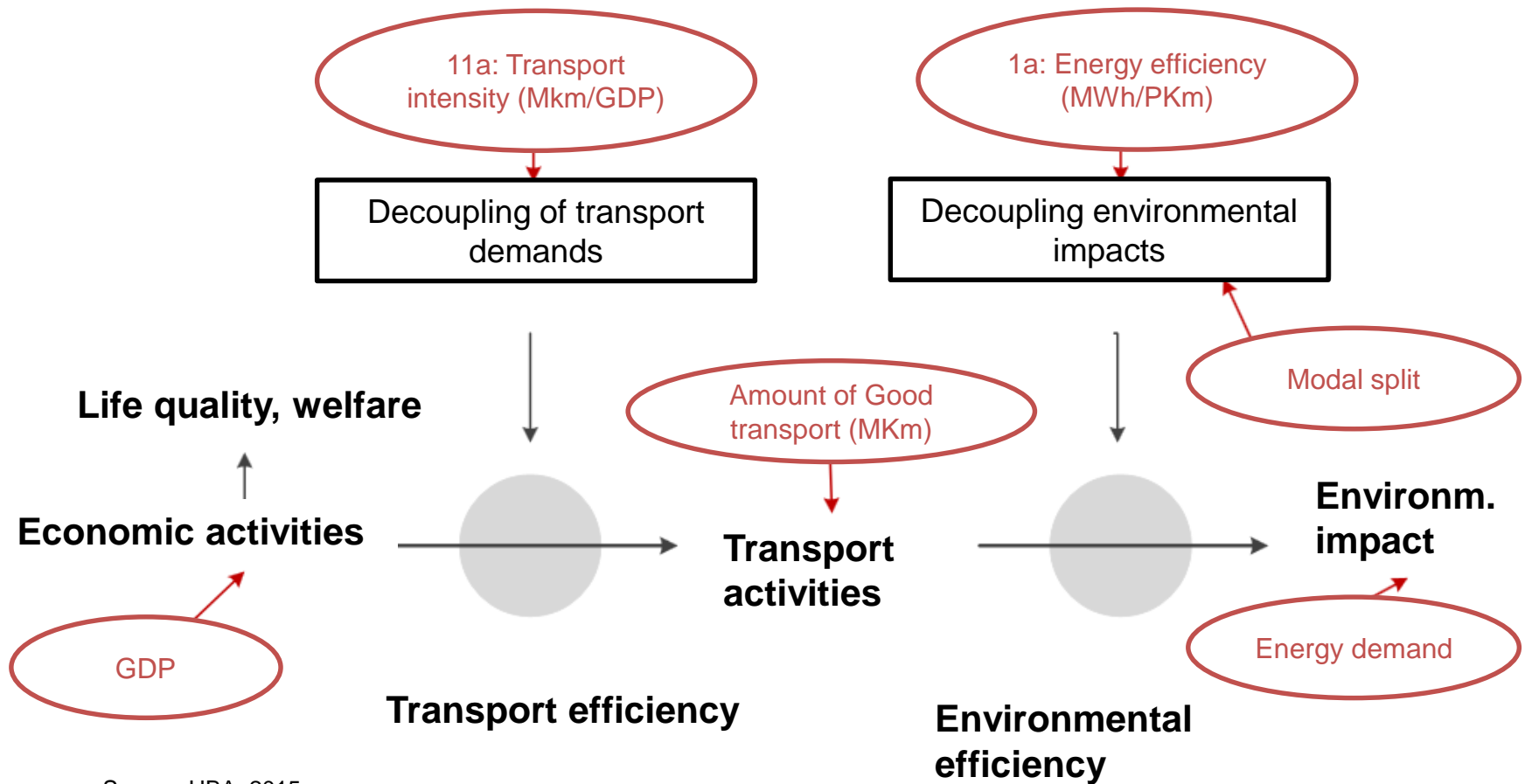
Source: UBA, 2015

Mobility Indicators in GER: global level

Field of action	Indicator in the sustainability strategie relating to the field of action
Directly referring to transport	
1. Environmentally Friendly Transport	Indicator 11a „Transport intensity of freight transport“ Indicator 11b „Transport intensity of passenger transport“ Indicator 11c „Proportion of freight transported by rail“ Indicator 11d „Proportion of freight transported by inland shipping“
2. Guaranteeing Mobility	No indicator included
Indirectly referring to transport (cross-sectoral)	
3. Use of Energetic Resources	Indicator 1 „Primary energy consumption within the territory of Germany“ Indicator 3a „ Proportions of energy consumption from renewable energy“
4. Climate Change	Indicator 2 „Greenhousegas emissions“
5. Air Quality	Indicator 13 „Concentration of air pollutants“
6. Noise	No indicator included
7. Additional Consumption and Fragmentation of Land	Indicator 4 „Land use for housing and transport“
8. Traffic Safety	Indicator 14 „Premature mortality (all causes)“
9. Financial Sustainability	Indicator 7 „Gross fixed capital formation in relation to GDP“

Source: UBA, 2015

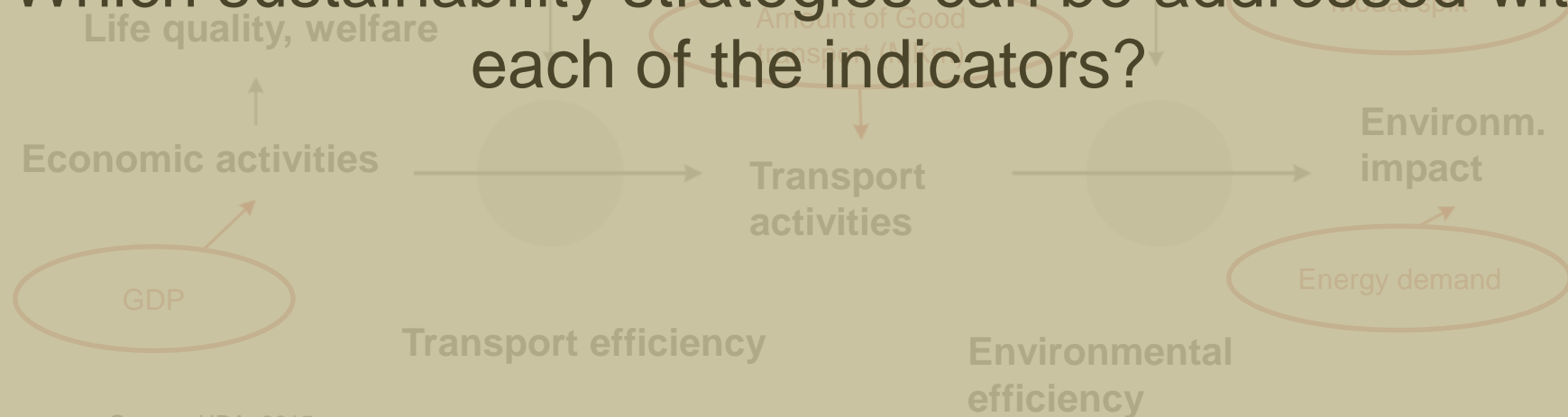
Mobility Indicators in GER: global level



Mobility Indicators in GER: global level



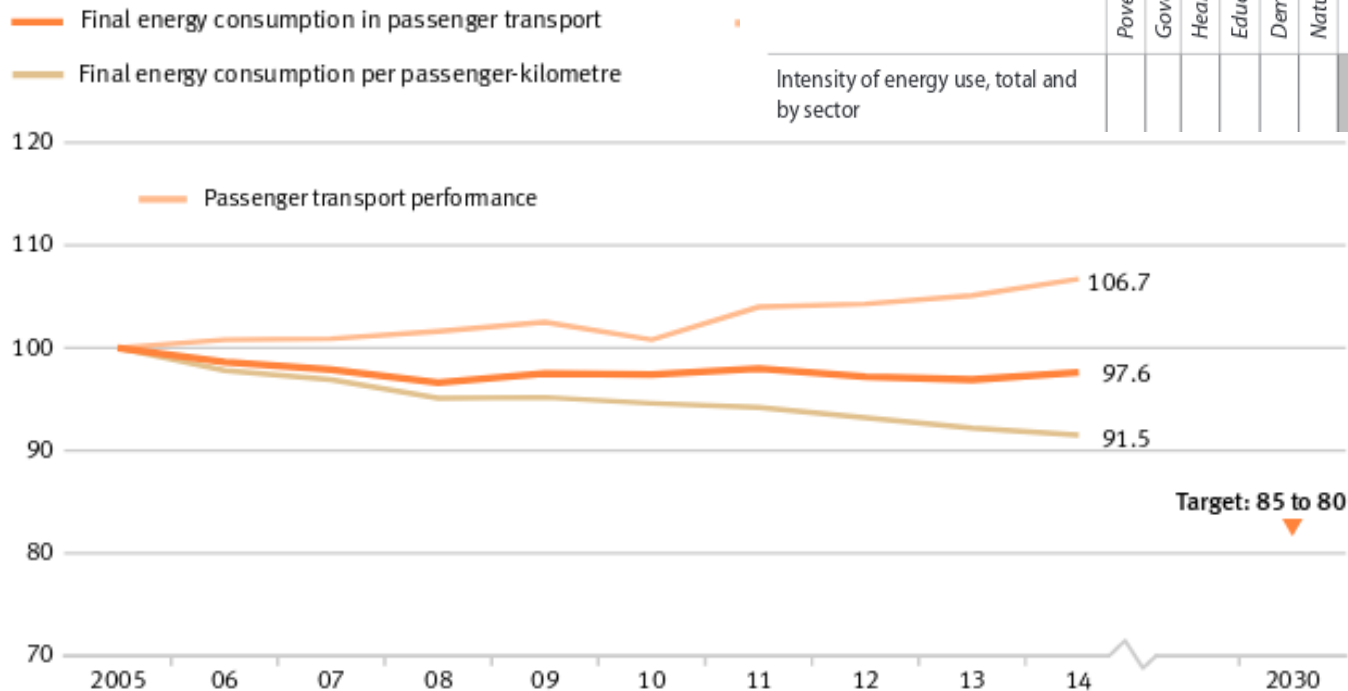
Which sustainability strategies can be addressed with each of the indicators?



Mobility Indicators in GER: global level

Field of action	Indicator in the sustainability strategy relating to the field of action
Directly referring to transport	
1. Environmentally Friendly Transport	Indicator 11a „Transport intensity of freight transport“ Indicator 11b „Transport intensity of passenger transport“ Indicator 11c „Proportion of freight transported by rail“ Indicator 11d „Proportion of freight transported by inland shipping“
2. Guaranteeing Mobility	No indicator included
Indirectly referring to transport (cross-sectoral)	
3. Use of Energetic Resources	Indicator 1 „Primary energy consumption within the territory of Germany“ Indicator 3a “ Proportions of energy consumption from renewable energy“

Final energy consumption in passenger transport 2005 = 100



Source: Federal Ministry of Transport and Digital Infrastructure, Institute for Energy and Environmental Research

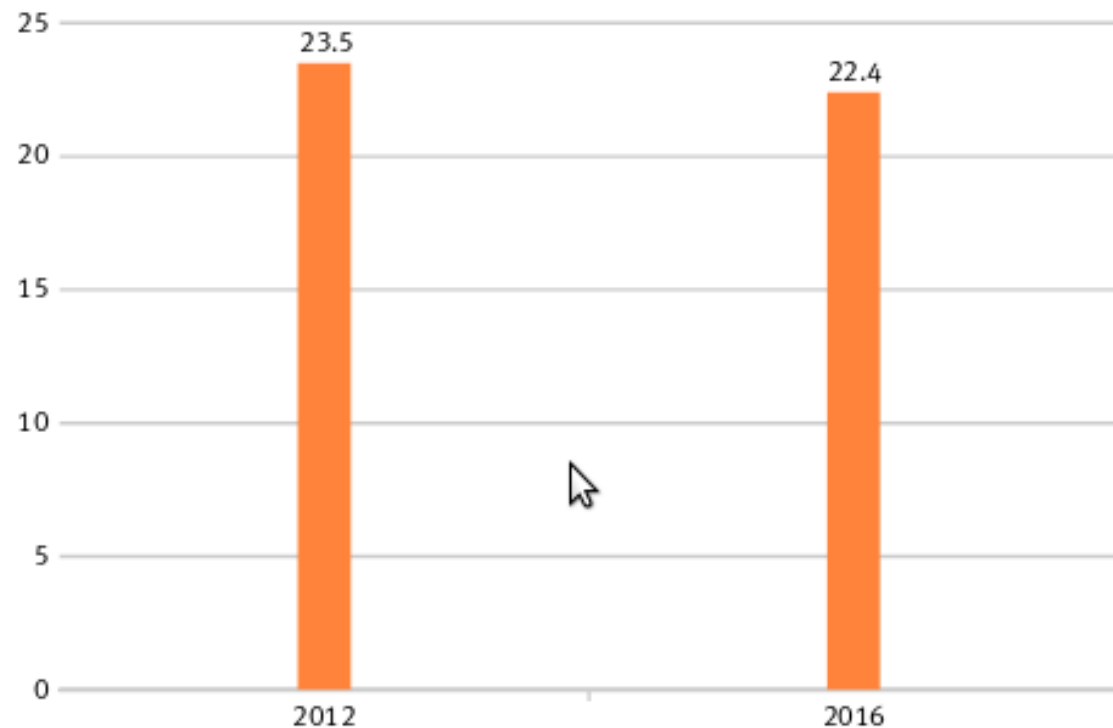
Source: Destatis, 2017

Mobility indicators in GER: national level

**Field of action
within national
sustainability
strategy:**

2. Guaranteeing
Mobility

Travel time by public transport to the nearest medium-sized
or large city
in minutes



Source: Federal Institute for Research on Building, Urban Affairs and Spatial Development

References

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- UBA 2015 (Ed.). Entwicklung von Indikatoren im Bereich Mobilität für die Nationale Nachhaltigkeitsstrategie. ISSN 1862-4804Dessau-Roßlau, Februar 2015 Link: https://www.umweltbundesamt.de/sites/default/files/medien/378/publikationen/texte_12_2015_entwicklung_von_indikatoren_im_bereich_mobilitaet.pdf, Last accessed: 20.03.2019