

Proposed Harmonised Guidelines Valuing Changes in Accident Risks

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General Approach

- Pragmatic approach based on best practice
 - Consider data availability
- Consistency of values between countries important
 - Context: TEN-T projects
- Report costs and physical impacts
- Recommendation of minimum standard
- Provision of “fall-back” values for every country

Scope for Valuing Accident Risks

Changes in accident costs are determined by

a) the change in accident risks due to a project

- we assume that a risk model is available
- if risk rates are based on accident statistics we recommend correcting for underreporting

b) the valuation of impacts

- main focus of the guidelines

General recommendation:

- Use existing country-specific values based on state-of-the-art methods.
- In the absence of such data use „fall-back“ values.

Accident Impacts Considered

Fatality: death caused by the accident

Serious injury: injury requiring hospital treatment and having lasting injuries (excl. fatalities)

Slight injury: injury not requiring hospital treatment or effects quickly subside

Accidents with material damages only

- associated costs small compared to casualties; cost data assumed to be available in different countries

Cost components and Requirements for National Values

Value of safety per se: WTP to reduce accident risks

- requirement: values from up-to-date stated preferences studies

Direct cost: medical and rehabilitation cost, legal cost, emergency services and property damage cost.

- requirement: cost data for the country under assessment

Indirect cost: production capacity lost for economy

- requirement: cost data for the country under assessment

Calculation Procedure Safety

- a. Quantify changes in the number of casualties and property damages due to a project using local or national risk functions for
 - Fatalities,
 - Serious injuries,
 - Slight injuries,
 - Property damages (€) due to material damage only accidents.
- b. Adjust for underreporting (if not included in a.).
- c. Multiply endpoints with cost factors.
- d. Report costs and physical impacts.

Increase of values with time: income elasticity of 1.0 (0.7)

➤ Importance of good modelling of future demand!

Recommended Correction for Unreported Accident Impacts

- a) Road transport: use country-specific values if detailed studies are available (e.g. for DK, DE, SE, UK, CH, NO). Otherwise use following correction factors:

	Fatality	Serious injury	Slight injury	Average injury	Damage only
Average	1.02	1.50	3.00	2.25	6.00
Car	1.02	1.25	2.00	1.63	3.50
Motorbike/moped	1.02	1.55	3.20	2.38	6.50
Bicycle	1.02	2.75	8.00	5.38	18.50
Pedestrian	1.02	1.35	2.40	1.88	4.50

- b) Other modes: underreporting is not an issue. Use evidence if available, otherwise use correction factor 1

Derivation of Fall-back Values for Casualties

Value of safety per se based on UNITE

- fatality €1.25 million (2002 factor cost)
- severe injury 13%, slight injury 1% of fatality
- Transfer to country-specific values based on GDP per capita (PPP) with income elasticity of 1.0

Direct and indirect economic costs

- for fatality 10% of the value of safety per se
- severe and slight injury based on European Commission (1994)

Fall-back Values for Casualties (€₂₀₀₂, factor price)

Country	Value of safety per se			Direct and indirect economic costs			Total		
	Fatality**	Severe injury	Slight injury	Fatality	Severe injury	Slight injury	Fatality	Severe injury	Slight injury
Austria	1,530,000	199,000	15,300	153,000	32,300	3,000	1,683,000	231,300	18,300
Belgium	1,460,000	189,000	14,600	146,000	55,000	1,100	1,606,000	244,000	15,700
Cyprus	920,000	120,000	9,200	92,000	9,900*	400*	1,012,000	129,900	9,600
Czech Republic	850,000	110,000	8,500	85,000	8,100*	300*	935,000	118,100	8,800
Denmark	1,520,000	198,000	15,200	152,000	12,300	1,300	1,672,000	210,300	16,500
Estonia	570,000	74,000	5,700	57,000	5,500*	200*	627,000	79,500	5,900
Finland	1,410,000	183,000	14,100	141,000	25,600	1,500	1,551,000	208,600	15,600
France	1,410,000	183,000	14,100	141,000	34,800	2,300	1,551,000	217,800	16,400
Germany	1,360,000	176,000	13,600	136,000	33,400	3,500	1,496,000	209,400	17,100
Greece	970,000	126,000	9,700	97,000	10,500*	800*	1,067,000	136,500	10,500
Hungary	730,000	96,000	7,300	73,000	7,000*	300*	803,000	103,000	7,600
Ireland	1,670,000	217,000	16,700	167,000	18,100*	1,300*	1,837,000	235,100	18,000
Italy	1,360,000	176,000	13,600	136,000	14,700*	1,100*	1,496,000	190,700	14,700
Latvia	490,000	63,000	4,900	49,000	4,700*	200*	539,000	67,700	5,100
Lithuania	520,000	68,000	5,200	52,000	5,000*	200*	572,000	73,000	5,400
Luxembourg	2,650,000	345,000	26,500	265,000	87,700	700	2,915,000	432,700	27,200
Malta	1,030,000	134,000	10,300	103,000	8,800*	400*	1,133,000	142,800	10,700
Netherlands	1,520,000	198,000	15,200	152,000	25,600	2,800	1,672,000	223,600	18,000
Norway	1,870,000	243,000	18,700	187,000	64,000	2,800	2,057,000	307,000	21,500
Poland	570,000	74,000	5,700	57,000	5,500*	200*	627,000	79,500	5,900
Portugal	960,000	125,000	9,600	96,000	12,400	100	1,056,000	137,400	9,700
Slovakia	640,000	83,000	6,400	64,000	6,100*	200*	704,000	89,100	6,600
Slovenia	930,000	121,000	9,300	93,000	9,000*	400*	1,023,000	130,000	9,700
Spain	1,180,000	154,000	11,800	118,000	6,900	300	1,298,000	160,900	12,100
Sweden	1,430,000	186,000	14,300	143,000	53,300	2,700	1,573,000	239,300	17,000
Switzerland	1,640,000	214,000	16,400	164,000	48,800	3,700	1,804,000	262,800	20,100
United Kingdom	1,470,000	191,000	14,700	147,000	20,100	2,100	1,617,000	211,100	16,800