



***UNECE EG on Assessment of Climate Change Impacts and Adaptation for Inland Transport
Consideration of physical climate change risks in transport planning and
operational processes***

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**Policies, regulations and standards in support of
integrating consideration of physical climate change
risks into transport planning and operations**

Regina Asariotis

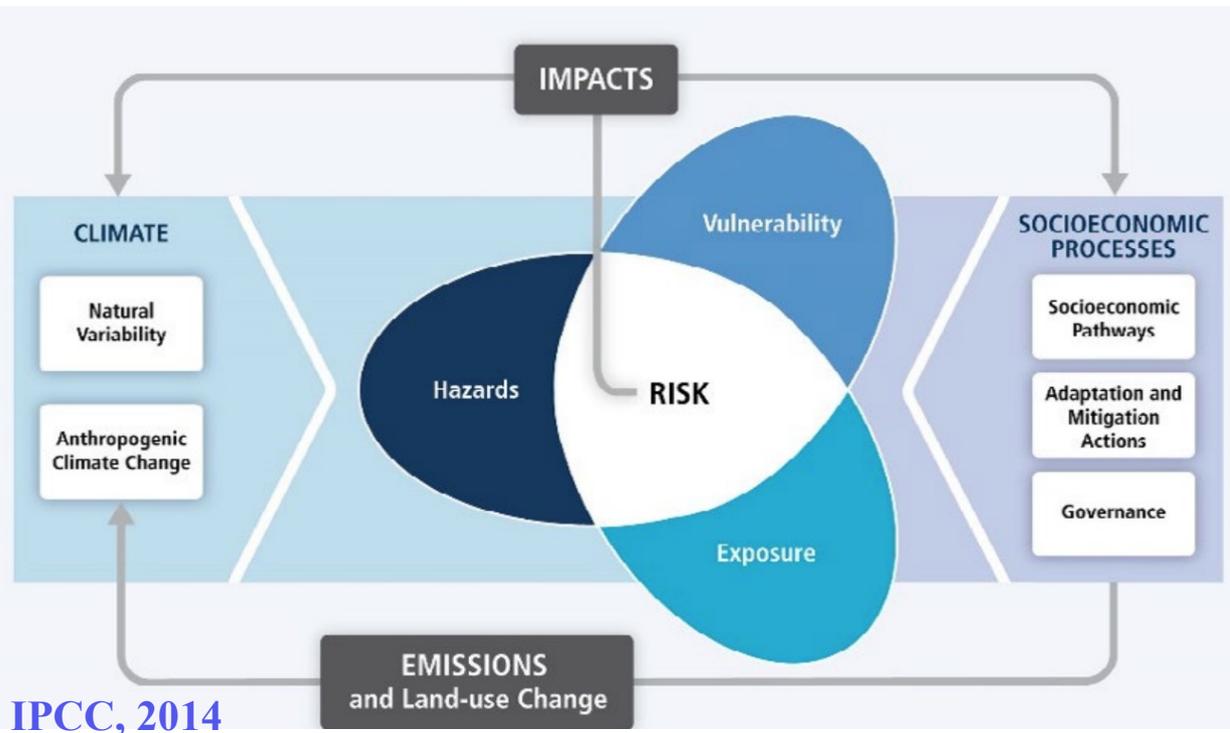
Chief, Policy and Legislation Section, TLB/DTL, UNCTAD

policy.legislation@unctad.org

unctad.org/ttl/legal



Risk under Climate Variability and change (CV & C)



Risk is a function of:

Climatic hazards - changing climatic factors

Exposure of the transport infrastructure/operations to hazards

Vulnerability – depends on capacity to respond to factors that make transport infrastructure prone to damages/losses from hazards, e.g. availability of technologies and materials; elevation; human and financial resources; **policy, legislation and management**

Note: The IPCC risk definition differs from that of the Insurance Industry which defines risk as a function of the probability of the damaging event(s) and the magnitude of damages/losses: low probability events incurring large losses are high risks



Policies, Regulations and Standards: Key tools for adaptation and resilience building

- Policies, regulations, standards: important tools for implementing policy objectives
- Climate resilience / adaptation for (critical) transport infrastructure / systems is a matter of strategic economic importance – and key for progress on implementation of international agreements (incl. 2030 Agenda, Paris Agreement, Sendai Framework)
- Need for risk assessments (based on best available science), innovative adaptation responses, and mainstreaming of adaptation into transport planning / operations
- Adaptation strategies need to be underpinned by **strong legal, regulatory and policy frameworks**; as well as **standards, guidance, methodological tools**

See also

- UNECE 2020 [Climate Change Impacts and Adaptation for International Transport Networks'](#)
- UNCTAD 2020 [Climate Change Impacts and Adaptation for Coastal Transport Infrastructure: A Compilation of Policies and Practices;](#)
- EU [Climate ADAPT platform](#)

Policies, plans and strategies at national, sub-national and regional level

- cross-cutting or sectoral; - inform legislation and actions

Examples in the ECE region include:

- German Strategy for Adaptation to Climate Change (2008)
- National Climate Change Adaptation Plans of France (2011, 2018)
- Finland's National Climate Change Adaptation Plan 2022 (2014)
- Transport, Climate Change Sectoral Adaptation Plan of Ireland (2019)
- UK National Adaptation Programme and the Third Strategy for Climate Adaptation Reporting (2018)
- Polish National Strategy for Adaptation to Climate Change (NAS2020)

- California's Climate Adaptation Strategy (2018)
- Scotland's National Transport Strategy (2020) and Second Scottish Climate Change Adaptation Programme 2019-2024 (2019)

- ICPDR Strategy on Adaptation to Climate Change (2013)
- EU Strategy on Adaptation to Climate Change (2021) – to 2050 building on 2013 strategy



EU Strategy on Adaptation to Climate Change, COM(2021) 82 final

- Underlines the increasing frequency and severity of climate and weather extremes and recognizes that CC impacts have **knock-on effects across borders and continents**

“... the disruption of port infrastructure could hamper or even close down trade routes, both for commodities and goods, with potential cascading effects across international supply chains.”

- Highlights need for **systemic approach to mainstreaming climate change resilience considerations** in all relevant policy fields applicable to both public and private sectors

- Refers to **slow onset sea level rise** as an increasing worry for EU coastal areas, which produce ~ 40% of EU GDP and are home to ~40% of its population

- Impact Assessment (SWD(2021) 25 final) underlines risks to **transport infrastructure**:

“In the transport sector, ... incremental climate change effects ... can result in transportation infrastructure damages, operational disruptions, and pressures on supply chain capacity and efficiency. As part of the new EU Adaptation Strategy, planning and climate risk management will be reinforced by e.g. strengthening climate-proofing transport.”



EU Strategy on Adaptation to Climate Change (2021)

Inter alia,

To enhance adaptation-related knowledge, the strategy envisages:

- improvement of state of the art on adaptation modelling, risk assessment and management tools – towards “asset-level modelling”; actions aiming at more and better climate-related risk and losses data.

To reduce climate-related risk, the strategy envisages European Commission action to:

- enhance climate proofing guidance and promote its use;
- develop an EU-wide climate risk assessment and strengthen climate considerations in EU disaster risk prevention / management;
- increase cooperation with standardisation organisations to climate-proof standards and to develop new ones for climate adaptation;
- support integration of climate resilience considerations into criteria applicable to construction and renovation of buildings and critical infrastructure.



Legal and regulatory frameworks: Key tools for adaptation and resilience building

- Adaptation strategies must be underpinned by strong legal/regulatory frameworks
- Given that transport infrastructures form complex systems and are often linked to urban agglomerates, planning regulation can play a particularly important role as a facilitator of climate change adaptation
- Legal and regulatory tools may further provide economic incentives to fund climate change adaptation efforts, promote transfer of adaptation technologies and contribute to availability of accurate climate data and tools
- At the same time, important that legal and regulatory approaches do not inadvertently foster 'maladaptation' that may limit or lock-in future adaptation options



Legal and regulatory framework

Relevant **international conventions and legal instruments** include:

- 1992 United Nations Framework Convention on Climate Change (UNFCCC)
- 2015 Paris Agreement
- 1998 Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters
- 1991 Espoo Convention on Environmental Impact Assessment in a Transboundary Context and 2003 Protocol on Strategic EIA
- 2008 ICZM Protocol to Barcelona Convention

So far relatively few **national and sub-national legal instruments** in ECE region specifically address climate change impacts, adaptation and resilience building, including for transport

e.g. 2008 UK Climate Change Act; 2016 Public Resources Code, State of California, USA

However, several **supranational legal instruments at EU level** are relevant



Legal and regulatory instruments of relevance at EU level include

- Flood Risk Directive (2007/60/EC)
 - preliminary assessments to **identify** river basins and coastal areas at **flood risk** by 2011; comprehensive flood risk **maps** by 2013; flood risk **management plans** by 2015;
 - **Review of plans by December 2021 to take into account ‘the likely impact of climate change on the occurrence of floods’**
- EIA Directive (2014/52/EU)
 - requires **vulnerability to climate change to be taken into account** as part of environmental impacts assessments for large infrastructure projects
- Regulation 2018/1999 on Governance of the Energy Union and Climate Action
 - Inter alia Member States need to **report on national adaptation plans and actions** by 15/3/2021, including on:
 - Goals, objectives, institutional framework
 - CC projections including weather extremes, cc impacts, assessment of climate vulnerability and risks and key climate hazards
 - Adaptive capacity
 - Adaptation plans and strategies
 - Monitoring and evaluation framework
 - Progress in implementation (incl good practices and changes to governance)



Recent developments

- Regulation 1315/2013 on EU TEN-T guidelines
 - Art. 5 already envisages ... *adequate consideration of the vulnerability of transport infrastructure with regard to a changing climate as well as natural or man-made disasters, with a view to addressing those challenges*

See: European Parliament resolution of 20.1.2021 on revision of TEN-T guidelines:

- (12) ... *calls on the Commission to propose a legislative framework to improve the risk-management, resilience and climate adaptation of transport infrastructure on the core network, all modes included*
- *K ...; whereas the development of efficient and resilient transport infrastructure should be at the heart of all European and national [COVID-19] recovery plans and efforts, with a particular focus on multimodal transport links between ports, airports, railways and roads*
- Proposal for a Directive on Resilience of Critical Entities (amending European Critical Infrastructure Directive 2008), December 2020
- Proposal for a Regulation on an EU Climate Law, March 2020



Proposed EU Climate Law (COM(2020) 80 final) – latest draft text
(Council) 14171/20, 17 December 2020

Article 4

Adaptation to climate change

1. The relevant Union institutions and the Member States shall ensure continuous progress in enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change in accordance with Article 7 of the Paris Agreement.
- 1a. The relevant Union institutions and the Member States shall also ensure that policies on adaptation in the Union and in the Member States are mutually supportive, provide co-benefits for sectoral policies, and work towards better integration of adaptation to climate change into all policy areas.
2. Member States shall develop and implement adaptation strategies and plans [...], based on robust climate and vulnerability baselines and progress assessments.



Standards for adaptation and resilience building

Also key are **standards**, guidance and methodological tools for organizations

Particularly worth noting

- ISO 14090 Adaptation to climate change – principles, requirements, guidelines (June 2019)
- First international standard on climate adaptation
- *Framework covering any organization, adopting a systems approach; encourages and facilitates a structured and flexible approach to decision-making and mainstreaming of climate change considerations into planning and decision-making*
- Important step forward in facilitating risk-assessment and development of adaptation measures (including hard, soft, ecosystem – and low cost)
- ISO 14091:2021 Adaptation to climate change — Guidelines on vulnerability, impacts and risk assessment (February 2021)



Policies, regulations and standards in support of integrating consideration of physical climate change risks into transport planning and operations

Questions for discussion in this session:

1. Which policies, regulations and standards facilitate climate impact assessment and adaptation for transport infrastructure and operations in your sector/area of work?
2. In respect of which types of issues do you think there is a need for additional / different / improved policies, regulations or standards, to speed up the process of integrating consideration of physical climate change risks into transport planning and operations? - e.g.
 - climate impact and risk assessments;
 - early warning systems;
 - climate risk disclosure;
 - technical adaptation measures;
 - risk management;
 - data availability, etc.



Policies, regulations and standards in support of integrating consideration of physical climate change risks into transport planning and operations

Questions for discussion in this session:

3. Where do you think cooperation among policy makers and stakeholders in respect of relevant policies, regulations and standards is particularly important or needs to be improved? e.g.

- enhanced multi-stakeholder involvement in decision-making processes;
- improved data availability;
- dissemination;
- targeted capacity building, etc.