



Third workshop on **Climate Change Adaptation in the Transport Sector**

Experience from Project Preparation and
Network Management

7th of April 2022 – Online

Agenda

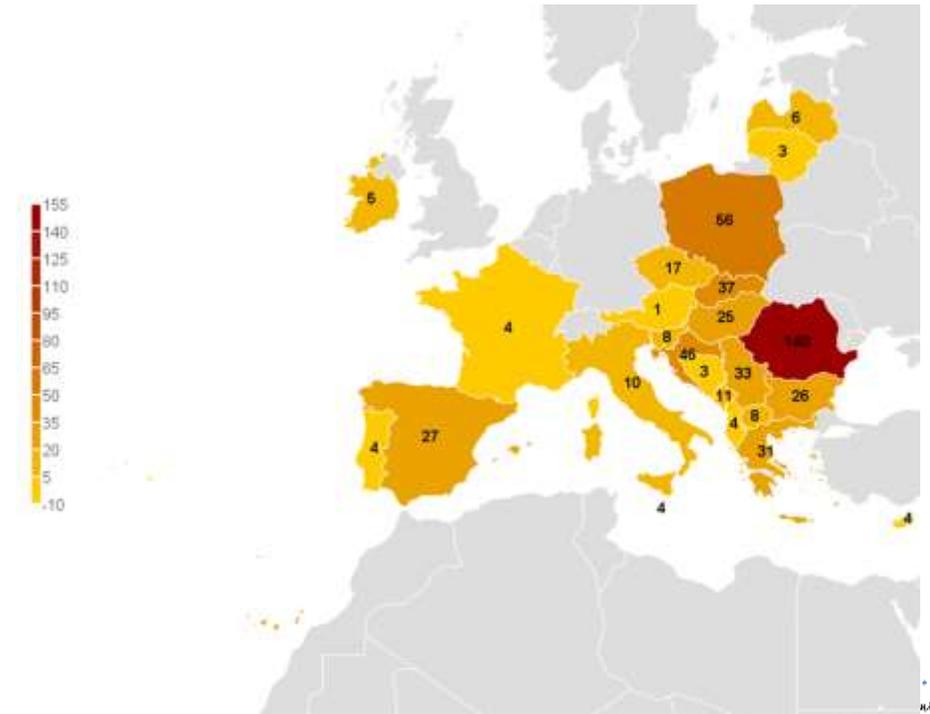
- 10:00 Opening and Welcome,
- 10:10 Introductory presentations: DG CLIMA, DG REGIO, DG MOVE, JASPERS
- 10:45 **Session 1 – Climate change adaptation of transport networks**
- 12:30 *Lunch break*
- 13:30 **Session 2 – Preparing climate change resilient transport investments**
- 15:30 Conclusions
- 16:00 *Close*

(approx.)



‘Joint Assistance to Support Projects in European Regions’

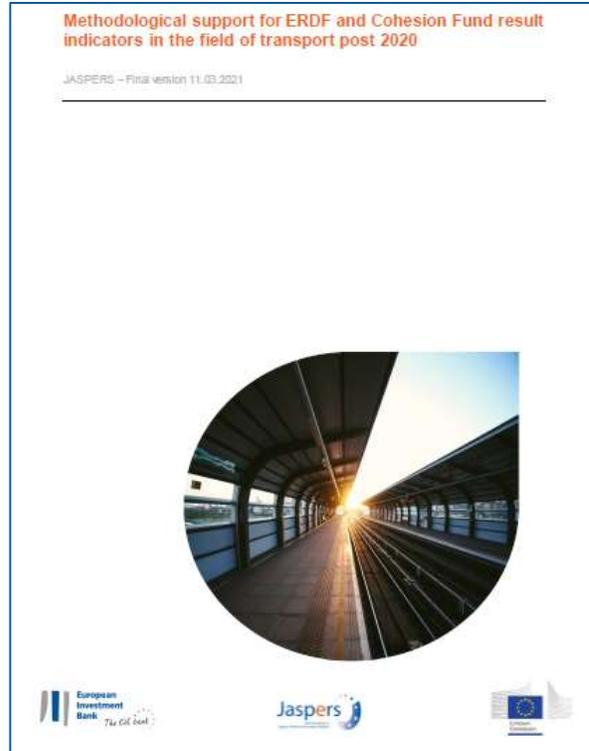
- A partnership between Commission’s [DG Regional and Urban Policy](#), and [EIB](#) active since 2006.
- Provides **independent advice and capacity building** support to [beneficiary countries](#) to help prepare and assess high quality projects to be co-financed by [EU Structural and Cohesion Funds](#) (including JTF), by the [Instrument for Pre-accession Assistance \(IPA\)](#) and by the [Connecting Europe Facility \(CEF\)](#).
- JASPERS assistance is **funded by EC and EIB**
- **Available to EU 27 + IPA region**
- Supports project preparation over the **whole project cycle**, from supporting strategies and identifying related project pipelines, to preparation for implementation.
- Capacity Building, knowledge sharing and support to strengthening of public administrations and final beneficiaries



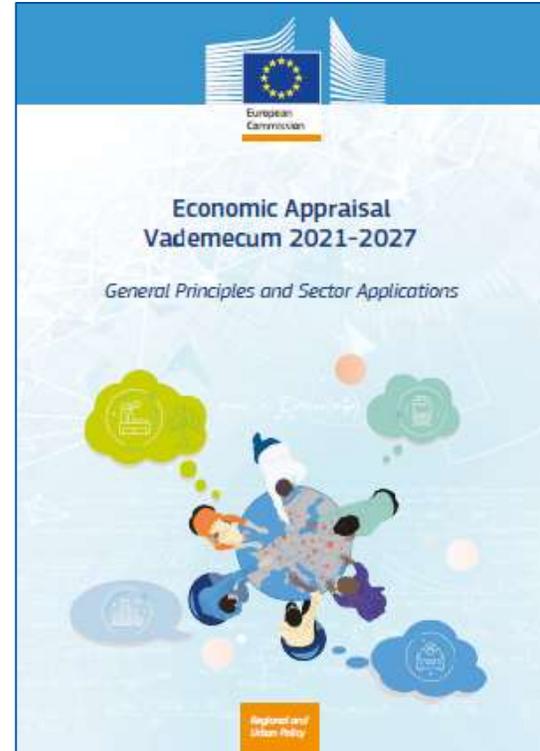
- ✓ JASPERS Networking Platform programme of **EU-level (multi-country) capacity building, training & knowledge sharing** – agreed with DG REGIO
- ✓ **In-country technical capacity building** assignments – based on requests by MSs for targeted capacity building and institutional strengthening assignments (including train-the-trainers)
- ✓ Supporting **development of EC technical guidelines**, preparation of JASPERS **technical notes/working papers**, dissemination of good practices
- ✓ **Advisory on horizontal issues relevant to project preparation** - climate change, environmental issues, economic appraisal, state aid implications for projects
- ✓ Dedicated **Web portal**: www.jaspersnetwork.org



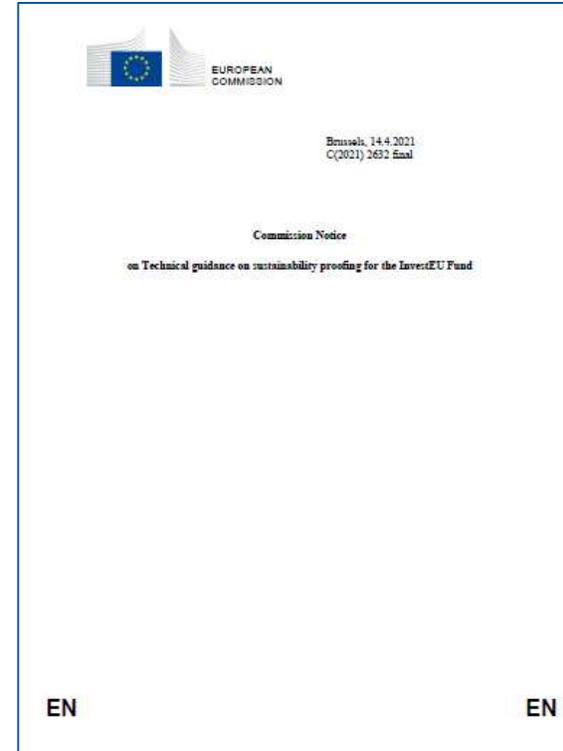
Support to develop EC guidelines – highlights 2021



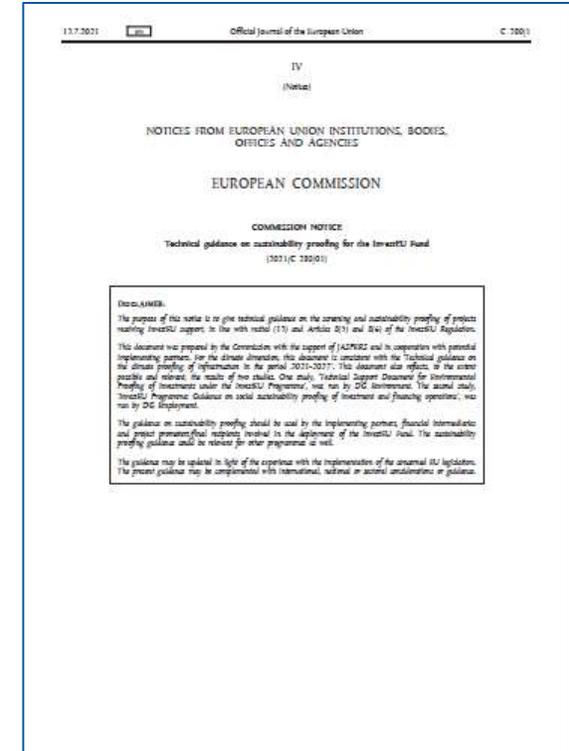
Result indicators in transport



Economic Appraisal Vademecum



InvestEU Sustainability Proofing



Climate Proofing of Infrastructure



Current planning of Multicountry CB activities 2022



- ✓ Webinars on **Bus Fleet Decarbonisation** – 22 and 29 March
- ✓ **Webinar on Climate Adaptation in Transport** – 7 April
- ✓ Webinar on InvestEU **Sustainability Proofing** Guidance – May
- ✓ Closing Webinar on **WFD requirements in project** – May
- ✓ Technical webinars on **sustainable underground infrastructures** – May-June 2022 (date tbc)
- ✓ Good practices for preparation of **digital education** projects in 2021-27 – June 2022 (date tbc)
- ✓ Workshops on good practices and lessons learned for projects under the **Just Transition Fund** – tent. Q3 2022
- ✓ Webinar on good practices and lessons learned for **project appraisal in 2021-27** - Q3 2022
- ✓ Webinar/workshops on application of **State Aid requirements to projects** – Q3/Q4 2022
- ✓ Joint **EWRC** REGIO – JASPERS workshop – October 2022
- ✓ Technical workshops on preparation of **Circular Economy** projects – tent. Q4 2022
- ✓ Webinars on **Economic Appraisal of projects** in 2021-27 – dates to be defined



Building capacity on Climate Change

Knowledge sharing & dissemination activities at EU-level

- [Second seminar on Climate Change Adaptation in the Transport sector – June 2019](#)
- [Climate Change Adaptation in the Transport Sector – Experience from Project Preparation and Network Management – December 2017](#)
- [Follow-up meeting on climate change requirements for major projects in 2014-2020 - June 2017](#)
- [Knowledge sharing event on climate adaptation in projects - June 2016](#)
- [Climate change requirements for major projects in 2014-2020 - September 2015](#)
- [Climate change adaptation, risk prevention and management in the Water Sector - October 2014](#)

Knowledge transfer & technical capacity building at country level

- JASPERS activities based on MSs requests and part of Country Work Programmes
- Technical capacity building and institutional strengthening of public authorities and final beneficiaries (e.g. GR, HR, PL, PT, RO, SK, ES, SI, RO)
- Support to the development/updates of national guidelines and toolkits (e.g. PL, SI, RO)
- Support in streamlining climate objectives in strategies/plans, project pipelines and investment programmes at national and regional level (e.g. IT, ES)



Climate Change Adaptation on Transport

Workshop

- [Second Workshop on Climate Change Adaptation in the Transport sector](#), Brussels, June 2019

Agenda

- 9:30 Opening and Welcome, plus Introductions
- 10:00 **Session 1 – Experience of analysing climate change vulnerability and risks for transport projects**
- 13:00 *Networking lunch*
- 14:00 Briefing on discussion outcomes
- 14:30 **Session 2 – Integrating climate change in transport networks management**
- 16:00 Conclusions and next steps
- 16:30 *Close*

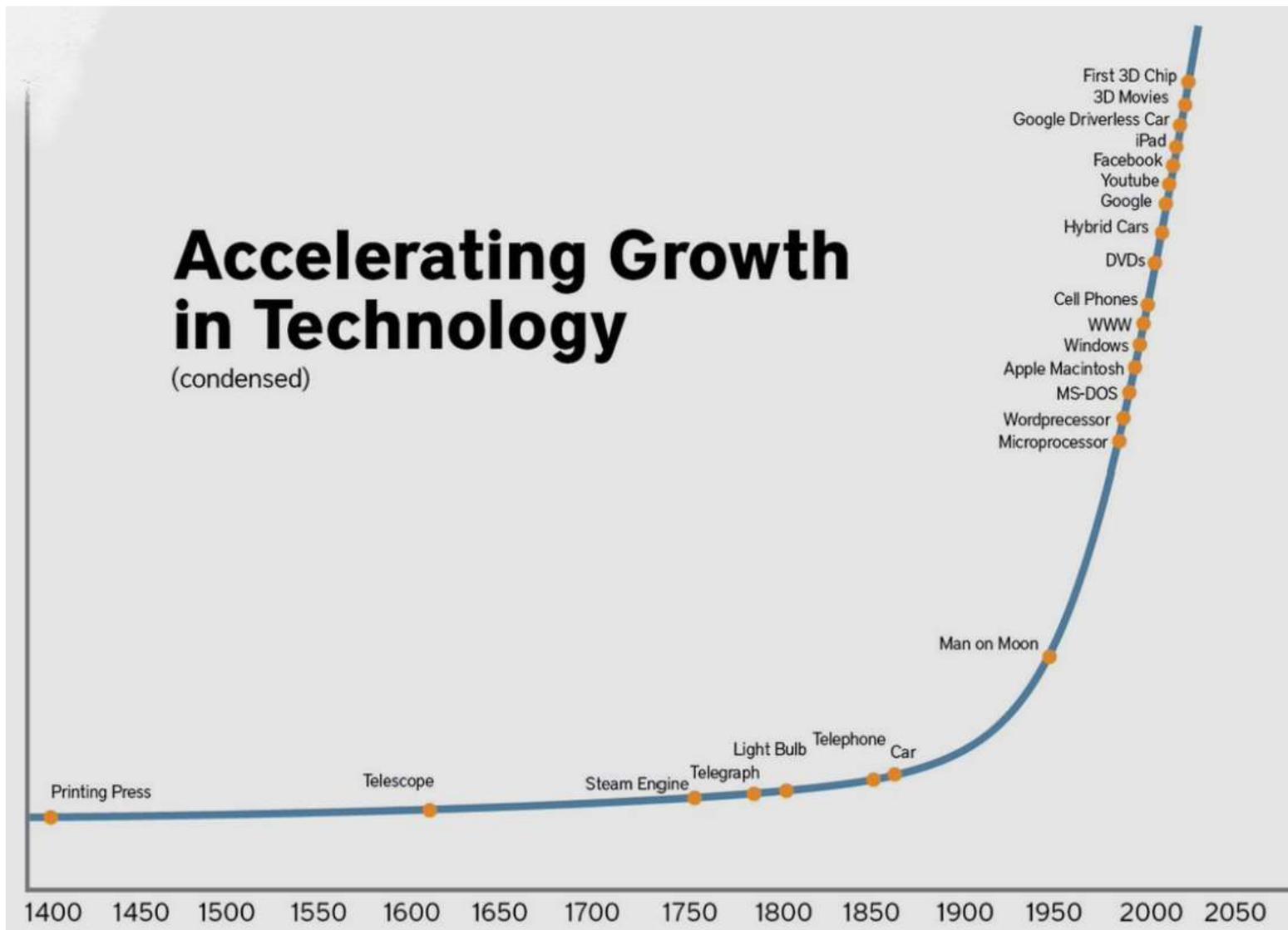
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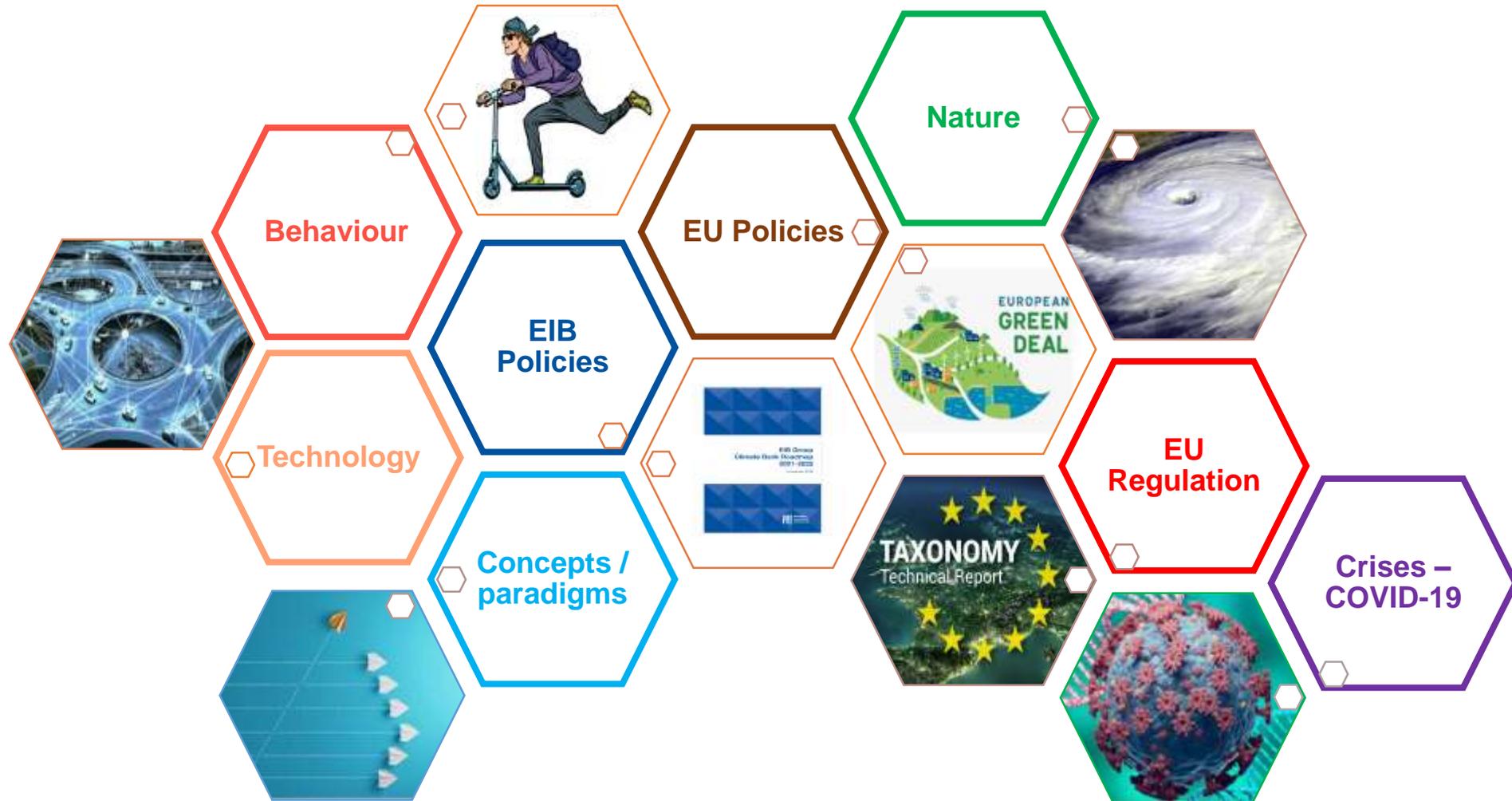
Best Practice Case Studies

- Climate change vulnerability and risk assessment for Linha do Minho railway project
Paulo Soares de Melo - Infraestructuras de Portugal, Portugal
- Studies on climate change and risk assessment for two high speed rail lines under construction in Spain
Violeta Gonzalez Aleñar - ADIF, Spanish Railway Manager, Spain
- Climate change impact assessment on Rail Baltica
Antti Roose - Tartu Regional Energy Agency, Estonia
- Climate change risk assessment: moving from a network approach to project assessments
Alberto Compte Anguela - Ministerio de Fomento, Spain
- Climate Change adaptation on the national road network
Grzegorz Łutczyk - GDDKiA, Polish National Road Administration, Poland
- The case of adaptation of the French railway company SNCF
Vivian Depoues - IACE, France
- Analysis of climate change impacts and adaptation for Polish Railway network
Magdalena Kozyra - PKP, Polish National Railways, Poland

Speed of change



Drivers of change



Examples of change

Climate Change



How to mitigate?
How to adapt?

Technology



How to accommodate?
How to adapt?

Policy/Regulation



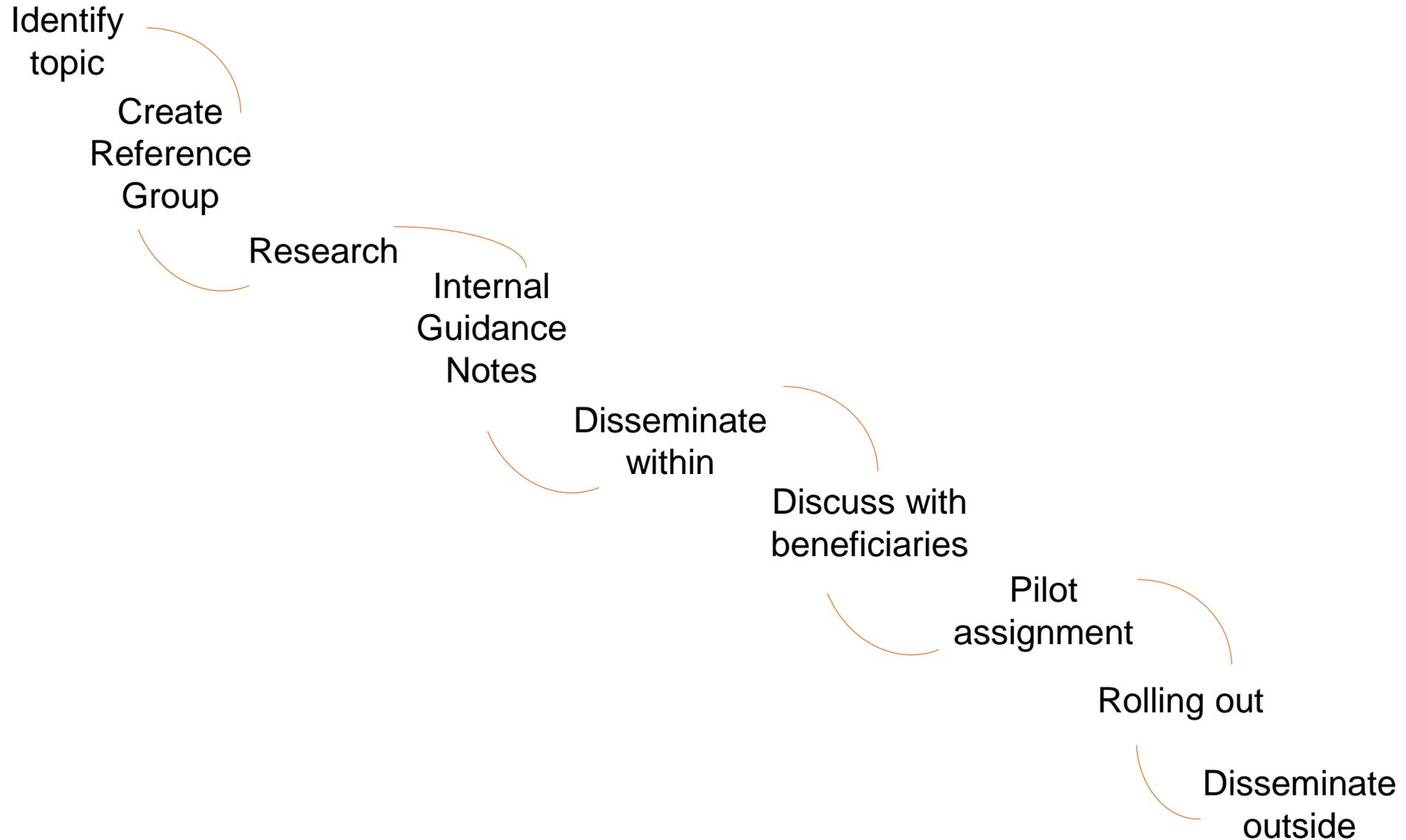
**EIB Group
Climate Bank Roadmap
2021-2025**
November 2020

EIB's New TLP (2022)



How to adapt?
How to comply?

Updating the advisory toolbox



Climate change adaptation of transport networks

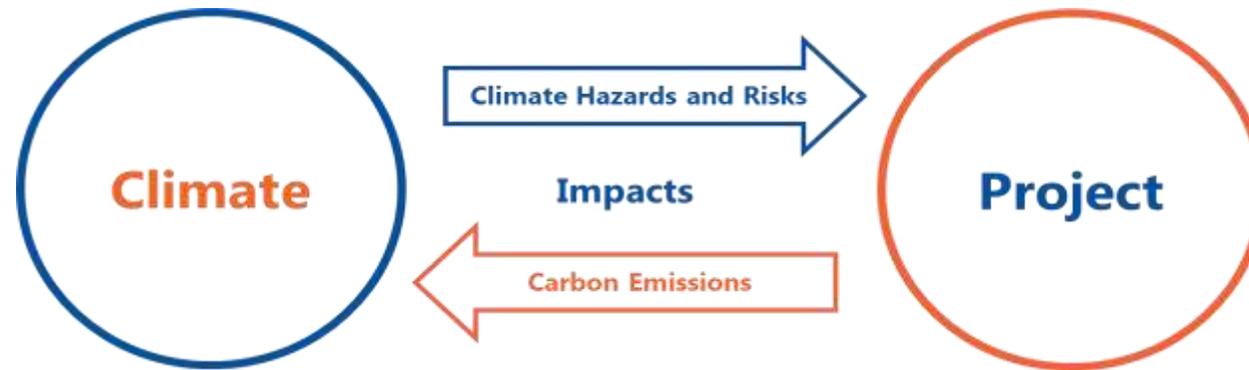


- **JASPERS Introduction on climate adaptation in transport and focus on transport networks**

Elisabet Vila Jordà, Senior Transport Engineer, RTAD, JASPERS

- **Best Practice Case Studies**

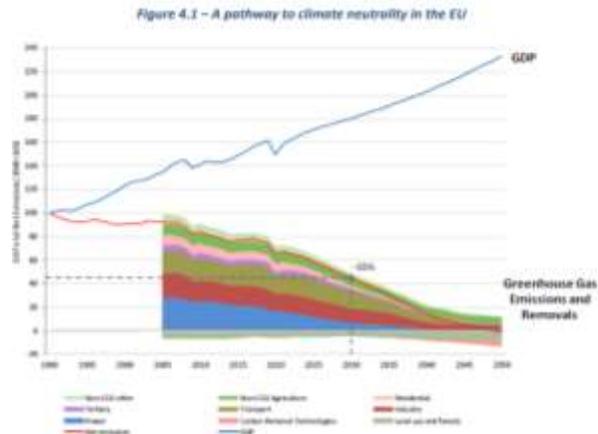
- There are two main components of dealing with climate change: mitigation and adaptation.
 - **Mitigation** is about dealing with the causes of climate change, by reducing greenhouse gas emissions (GHGs).
 - **Adaptation** is about dealing with the inevitable consequences of climate change and attempting to lower the risks.



- Transport is one of the most critical sectors for both:
 - Over 20% of GHG emissions in Europe come from the transport sector, the second largest emitter after the energy sector
 - Climate hazards impact critical infrastructure; expected increasing impact on energy and transport infrastructure

Paris Agreement Alignment & EU objectives

Climate Neutrality (Mitigation)



Transport:

- 2050: 90% GHG emissions reduction

Climate Resilience (Adaptation)

Become Climate Resilient by 2050

Transport: Resilient Mobility

Climate Change Impacts on Transport

WEATHER Project, 2011

*Transport costs related to extreme climate hazards 1998-2010:
**Direct EUR 2.5 bn/yr +
EUR 1 bn/yr of indirect costs,
rising by 20% until 2040-50.***

EWENT Project, 2012

*Total costs of extreme climate impacts on transport estimated at:
EUR 15 billion/year*

World Bank, 2020

*“Natural hazards cost about \$ 15 billion per year on average in **direct damage** to global transport infrastructure”*

Climate change impacts and adaptation in Europe. JRC PESETA IV, 2020

*“Within the EU, losses from extreme weather events **already average over EUR 12 billion per year**”*

Climate change impacts and adaptation in Europe. JRC PESETA IV, 2020

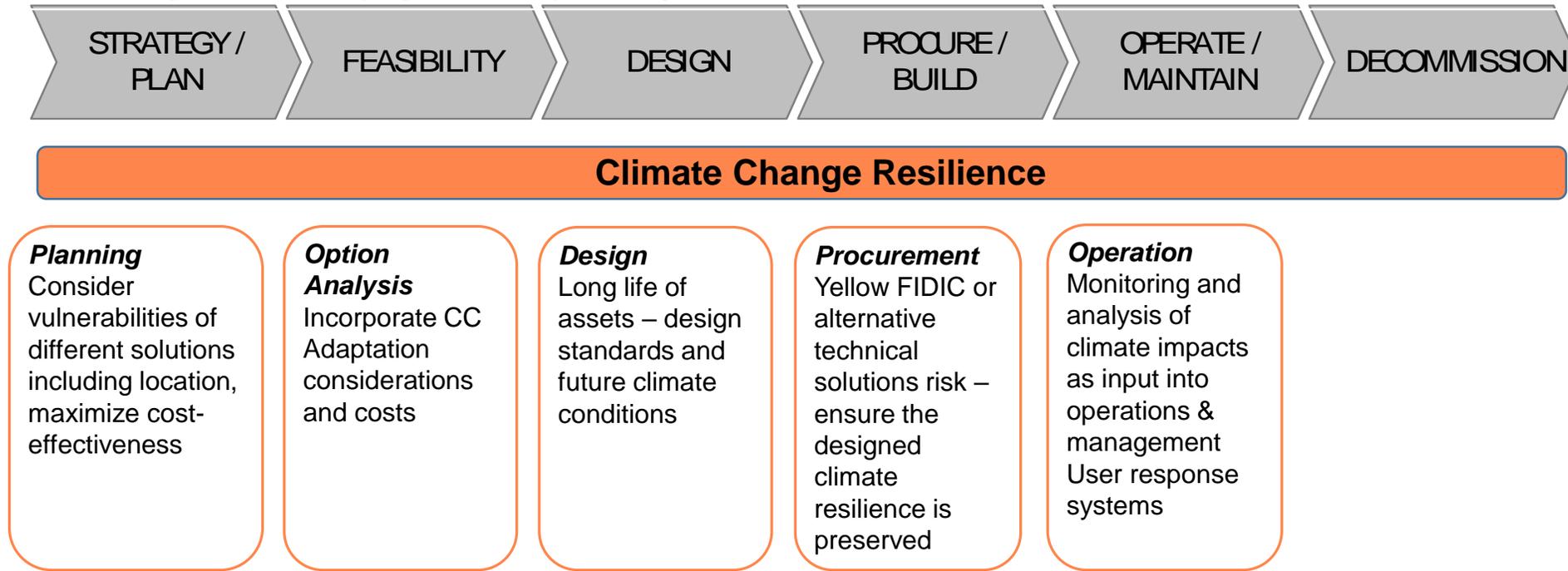
*“River flood losses would reach nearly **EUR 50 billion per year**; people exposed to coastal inundation could reach **2.2 million per year**, and **annual coastal flood losses could climb to EUR 250 billion in 2100**”*



Need of **Climate Change Adaptation Action**

Climate Change in the Project Cycle

Climate resilience at all stages of project cycle

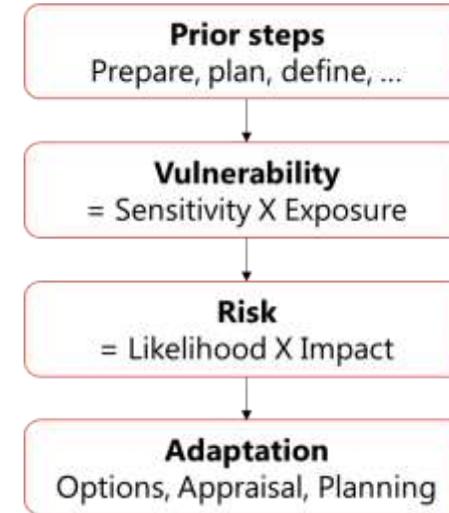


As early as possible in Project Development Cycle  Broader set of resilient options

Climate Change Vulnerability and Risk Assessment (CCVRA)

CC VRA as a basis for Climate Change Proofing for adaptation pillar for EU co-financing in 2021-2027:

- Identify which climate hazards the project is vulnerable to, assess the level of risk and integrate adaptation measures to reduce that risk to an acceptable level
- Cover current climate variability and future climate change



Climate Risk Assessment (CRA) is also a key tool for assessing climate resilience of EIB operations.

EU 2014-2020



- [Climate change and major projects](#)
- [JASPERS Guidance – The Basics of Climate Change Adaptation Vulnerability and Risk Assessment](#)

EU 2021-2027



- [Technical guidance on the climate proofing of infrastructure 2021-2027](#)

Climate Change Adaptation on Transport

Related types of JASPERS support

Transport and mobility planning

Support preparation of strategies and plans

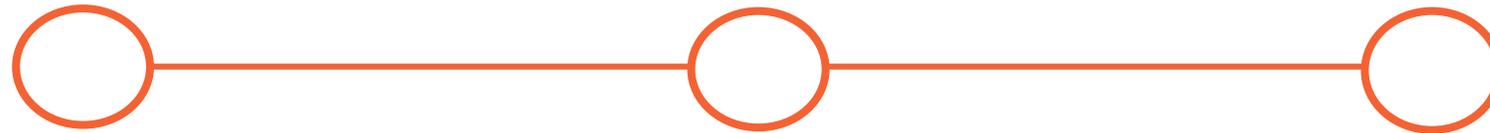
National/ Regional/ SUMP
(including ToR advice)

Project preparation support

Advice integrating CCVRA results in Option Analysis, appraisal of adaptation solutions (e.g. MCA based on robust technical criteria, CBA, etc.)

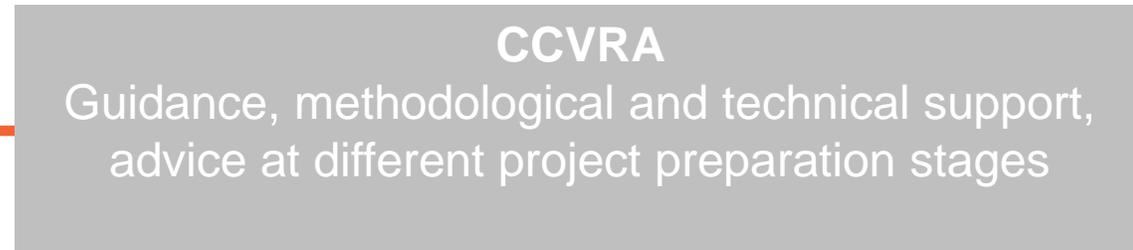
Capacity building

Regular project “hands-on” support, horizontal assignments (e.g. climate change adaptation for transport networks), international workshops/seminars, country trainings



“Adaptation: Area of greatest uncertainty for project applicants in 2014-2020.

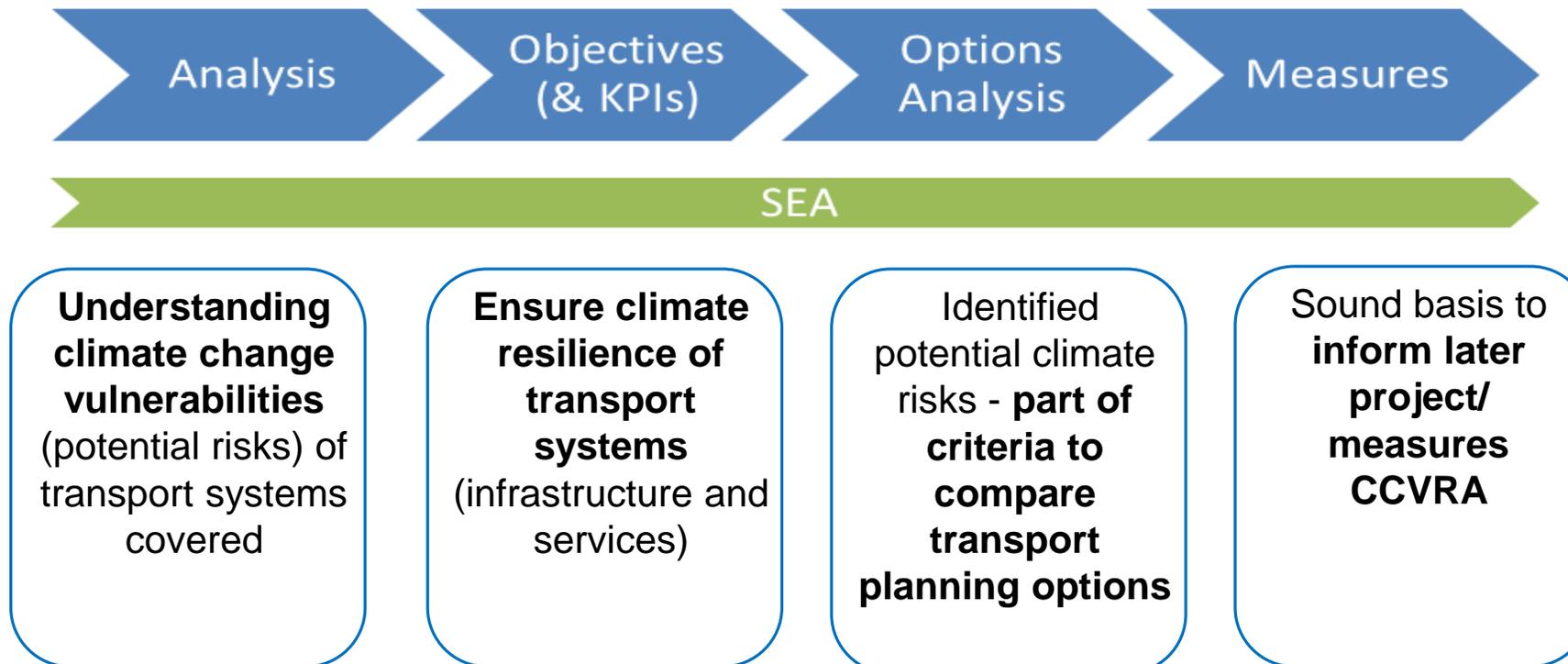
JASPERS assistance has therefore increased on the topic. Significant improvement in knowledge and understanding of the topic since the start of last programming period.”



Climate Change Adaptation in Transport Planning

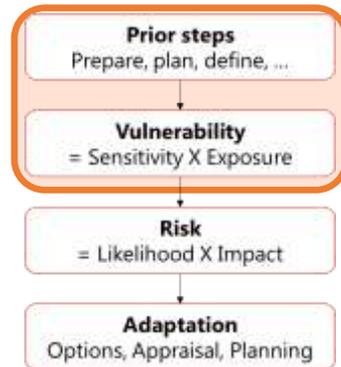
Climate Change Adaptation - Resilience of transport systems

Key elements of Transport Planning



Transport Networks Climate Change Vulnerability Analyses

Integrating climate change aspects into road network development, JASPERS 2018



Forging a climate-resilient Europe – the new EU Strategy on Adaptation to Climate Change, EC 2021



COMMISSION OF EUROPEAN UNION

Smarter adaptation

Faster adaptation

More systemic adaptation

Stepping up international action for climate resilience

Next steps

Development of the strategy

Next steps

Dissemination

Studies

The European Commission adopted the new EU strategy on adaptation to climate change on 20 February 2021.

The new strategy sets out how the European Union can adapt to the unavoidable impacts of climate change and reduce climate risk by 2030.

The strategy has four principal objectives: to make adaptation smarter, faster and more systemic, and to step up international action on adaptation to climate change.

Smarter adaptation

Adaptation actions must be informed by robust data and full assessment from the available to all – from families building homes, businesses to coastal regions and farmers planting their crops.

To achieve this, the strategy proposes actions that cover the frontiers of knowledge on adaptation so that we can gather more and better data on climate-related risks and trends, and enhance [Climate-RESILIT](#) on the European platform for adaptation knowledge.

Faster adaptation

The effects of climate change are already being felt, and so we must act now, quickly and comprehensively.

The strategy therefore focuses on developing and rolling out adaptation solutions to help reduce climate-related risks, increase climate protection, and safeguard the availability of fresh water.

More systemic adaptation

Climate change will have impacts on all areas of society, with the most serious of the economy, as adaptation actions translate to systems.

The Commission will continue to actively measure and monitor climate resilience considerations in all relevant policy fields.

It will support the further development and implementation of adaptation strategies and plans at all levels of government with three cross-cutting priorities:

- Integrating adaptation into cross-sector policy
- Reduce budgetary burdens for adaptation
- Lead adaptation action

Stepping up international action for climate resilience

The EIB Climate Adaptation Plan, EIB 2021

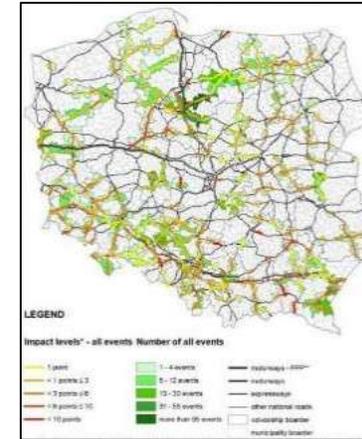


The process of Climate Resilience Analysis for Road Networks



JASPERS Advisory examples

- Adaptation to Climate Change for National Roads in Poland, GDDKiA

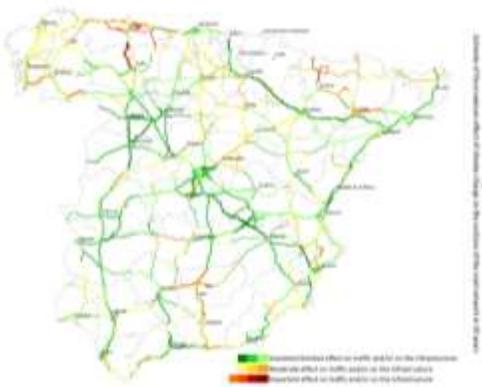


Both building upon solid mapping of current climate vulnerabilities

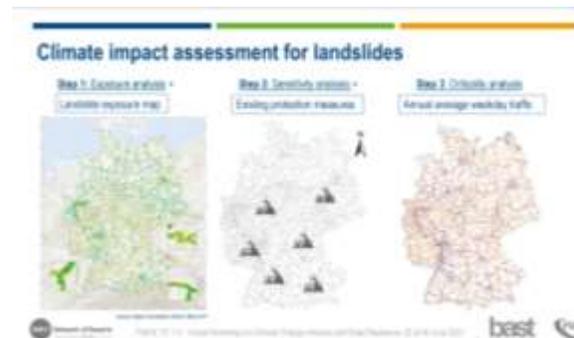
- Advisory support for Infraestruturas de Portugal to prepare their Climate Change Resilience Plan



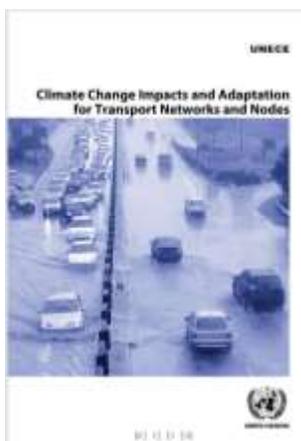
Other examples



[Sections of state-owned inland transport infrastructure that merit priority attention because of climate variability and change, Spain, 2018](#)



Climate impact assessment for the federal trunk road network of Germany, BAST, PIARC June 2021



[Climate Change Impacts and Adaptation for International Transport Networks](#), UNECE, February 2020



Mapping climate change risks on road and rail network and prioritization of adaptation interventions, Trafikverket (Sweden)

Why do network assessments matter?

- **Mapping climate vulnerabilities/ potential risks** of transport networks (**Exposure, Sensitivity, Criticality...**)
- **Defining adaptation responses** to different risk levels
- **Informing climate resilience assessments** for planning and later preparation of future investments (e.g. CCVRA for future projects)
- Integrating **climate resilience into operation** of existing networks (e.g. register and monitor climate events & provide early user warning and response systems; revising O&M contracts specifications)
- **Identifying & prioritizing climate adaptation investment needs** (e.g. road rehabilitation resilient programs) on existing networks

Major opportunity to invest in improvements of existing road networks:

- Identified immediate climate adaptation needs complementing sound maintenance strategy
- EU & EIB financing and advisory resources are available for climate change adaptation
- Tackling other key needs jointly (safety, ITS, deployment of alternative fuels infrastructure etc.)

Climate change adaptation of transport networks

- Climate change resilience plan for IP networks

Maria Pinheiro- Infraestructuras de Portugal, Portugal

- Climate Change Adaptation for National Roads in Poland, GDDKiA & JASPERS Project

Grzegorz Łutczyk - CEUPT and former GDDKiA

Elisabet Vila Jordà - JASPERS

- Managing road and rail networks in a climate change prospective

Markus Lundkvist - Trafikverket, Sweden

- FORESEE, Future proofing strategies for resilient transport networks against extreme events – Guidelines to select Resilient and Service indicators set target objectives

Iñaki Beltran Hernando - Fundación Tecnalia

Contact us

Neri di Volo – Principal Expert, Regional Transport Advisory Division, JASPERS, EIB
n.divolo@eib.org

Birgitte Keulen – Mobility Department Climate Advisor, EIB
b.keulen@eib.org

Massimo Marra – Principal Advisor - Networking Platform and Capacity Building Coordinator, JASPERS, EIB
m.marra@eib.org

Markus Pfeffer – Principal Advisor, Regional Transport Advisory Division, JASPERS, EIB
m.pfeffer@eib.org

Marian Purtz – Senior Transport Engineer, Regional Transport Advisory Division, JASPERS, EIB
m.purtz@eib.org

Elisabet Vila Jordà – Senior Transport Engineer, Regional Transport Advisory Division, JASPERS, EIB
e.vilajorda@eib.org

Inge Vermeesch – Head of Division, Regional Transport Advisory Division, JASPERS, EIB
i.vermeesch@eib.org

More information:

JASPERS Website:

jaspers.eib.org

JASPERS Networking Platform:

www.jaspersnetwork.org

More Information

For info or further questions on this webinar please contact the JASPERS Networking Platform team:

jaspersnetwork@eib.org

JASPERS Networking Platform:

www.jaspersnetwork.org

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