



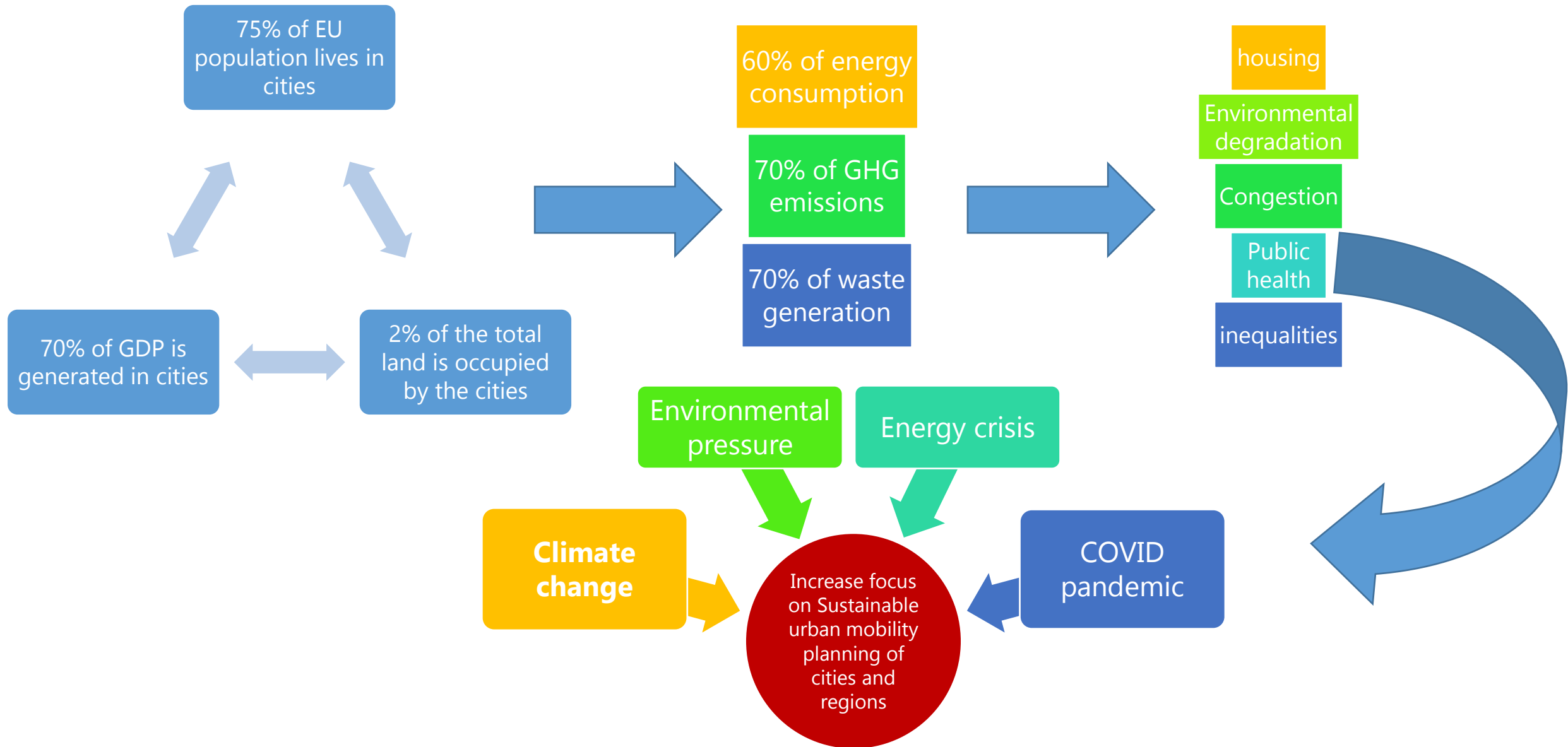
# Climate Change in Cities: Integrated Urban Planning and Sustainable Transport

Florence, EUI – 21<sup>st</sup> November 2023

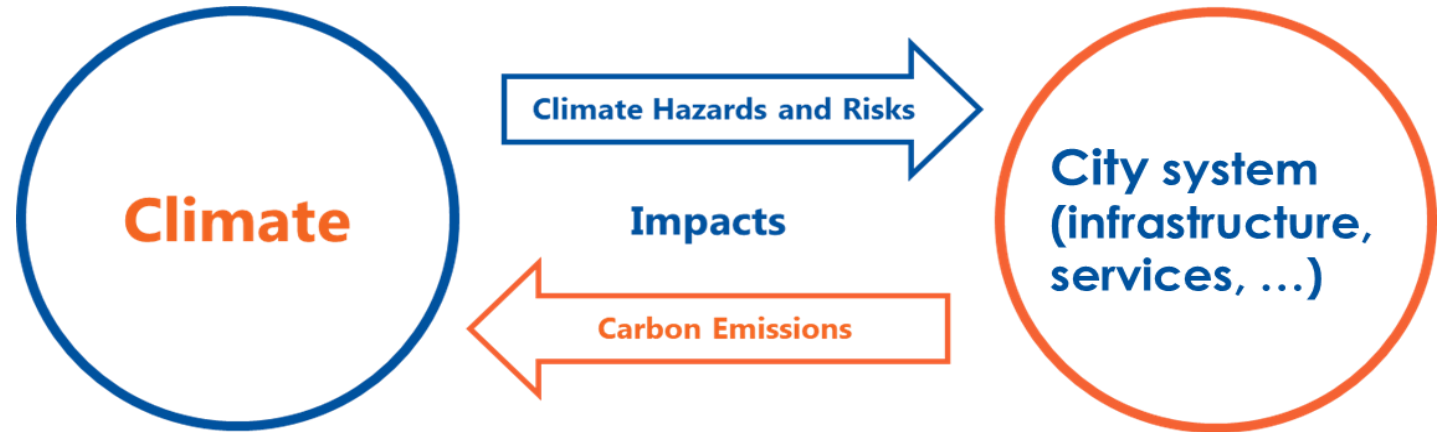
*Neri di Volo – EIB/JASPERS*



# Current Main Urban Transport Challenges



# Climate Change and Transport



- Transport is one of the most critical sectors in the fight against Climate Change - over 20% of GHG emissions in Europe (second largest emitter after the energy sector)
- Expected increasing impact on city infrastructure and services (including energy and transport) triggered by climate events – both short and long term effects (including economic impacts)
- -> Need for **climate change action**:
  - early as possible in Project Development Cycle
  - broader set of CC-targeted options (Mitigation & Adaptation)

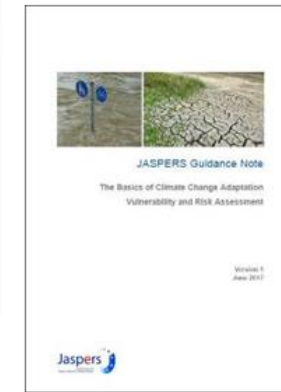


# Climate Change Strategic Framework & the EU

Climate Change related requirement for infrastructure projects for EU co-financing in 2014-2020 financial prospective and further enhanced 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
- Ensure climate risks considered as part of general risk assessment
- Different assessment frameworks possible, key is to demonstrate clear logic.

## EU 2014-2020

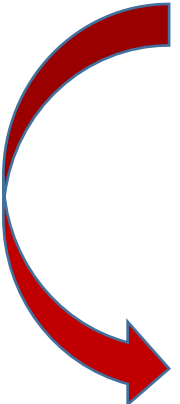


- [Climate change and major projects](#)
- [JASPERS Guidance – The Basics of Climate Change Adaptation Vulnerability and Risk Assessment](#)

## EU 2021-2027

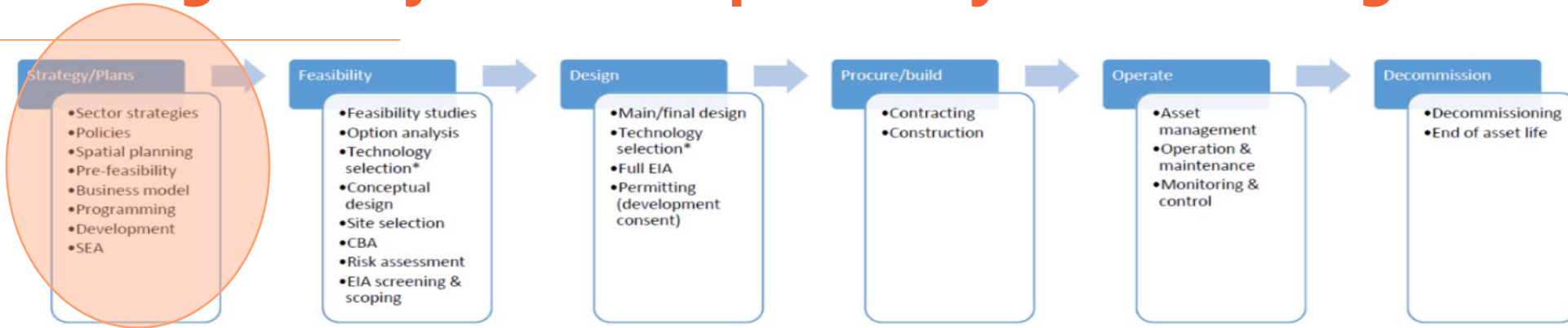


[Technical guidance on the climate proofing of infrastructure 2021-2027](#)



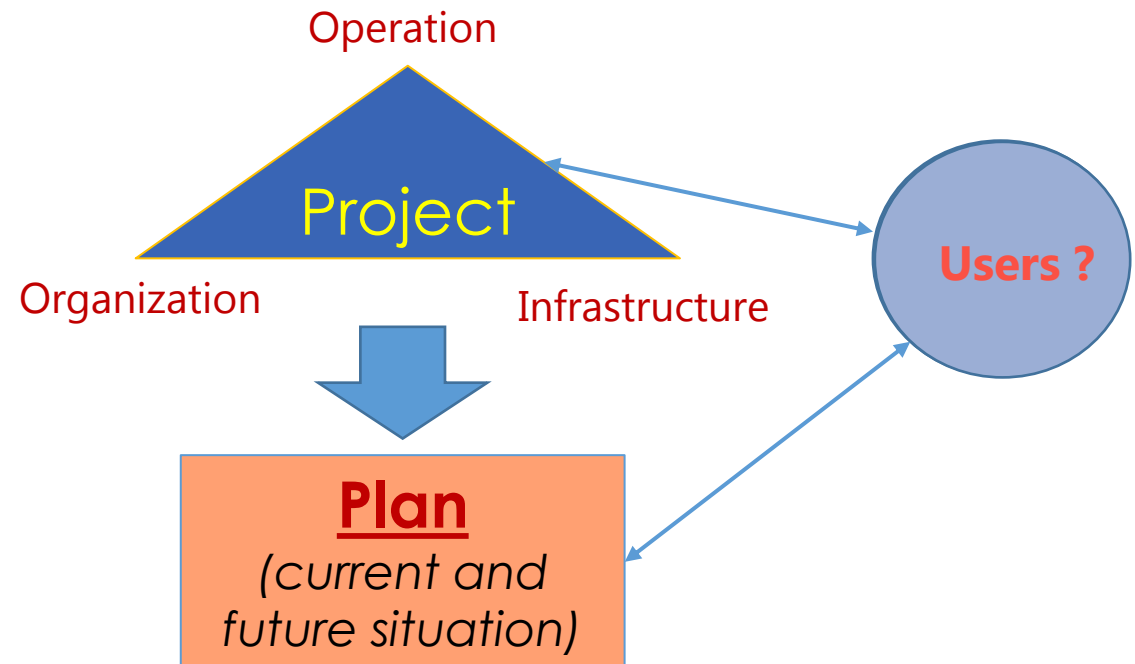
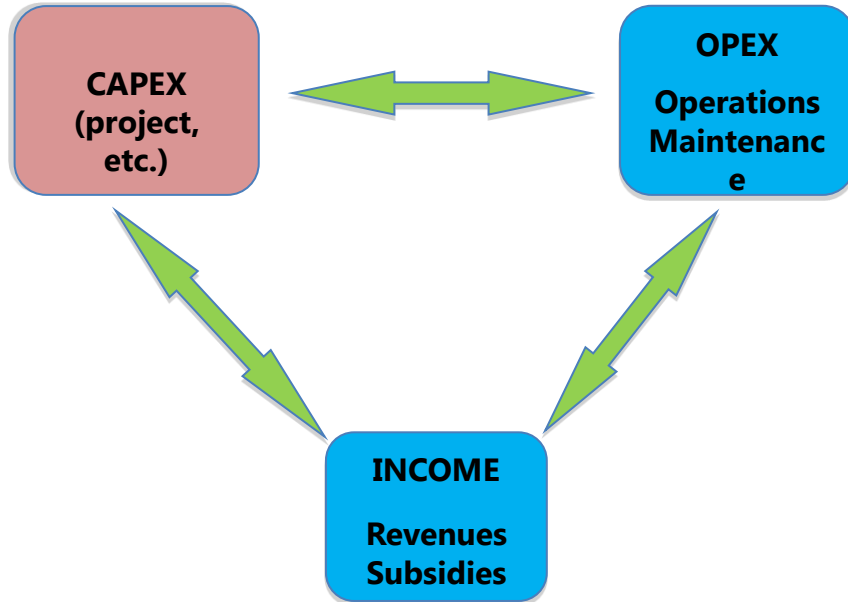
**2021-2027 Climate Proofing:** Process to *prevent infrastructure from being vulnerable to potential long-term climate impacts* whilst ensuring that the '*energy efficiency first*' principle is respected and that the level of *GHG emissions* arising from the project is *consistent with the climate neutrality objective in 2050*

# Climate Change / Project Development Cycle / Planning

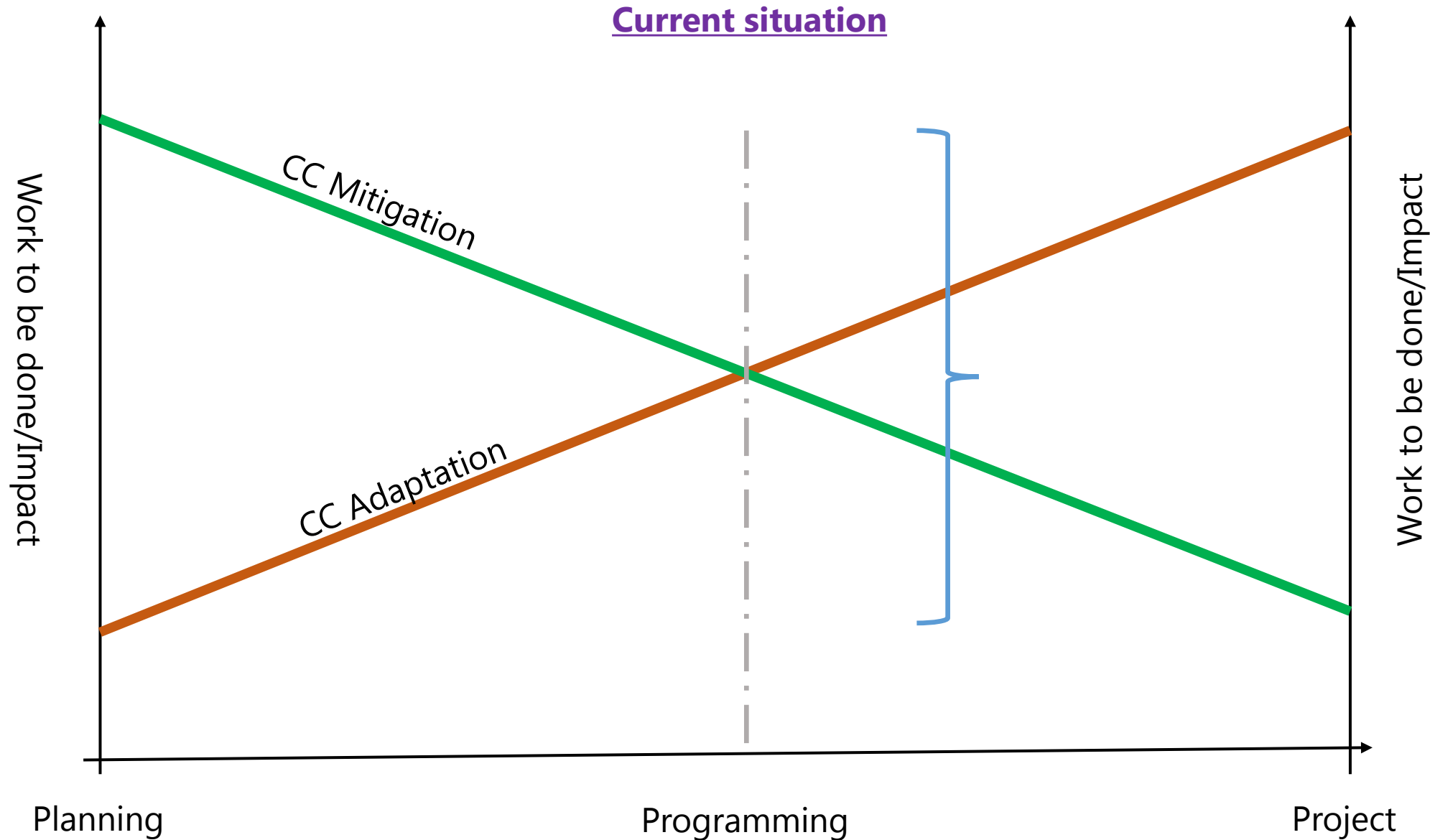


*How do we achieve an effective and sustainable system ?*

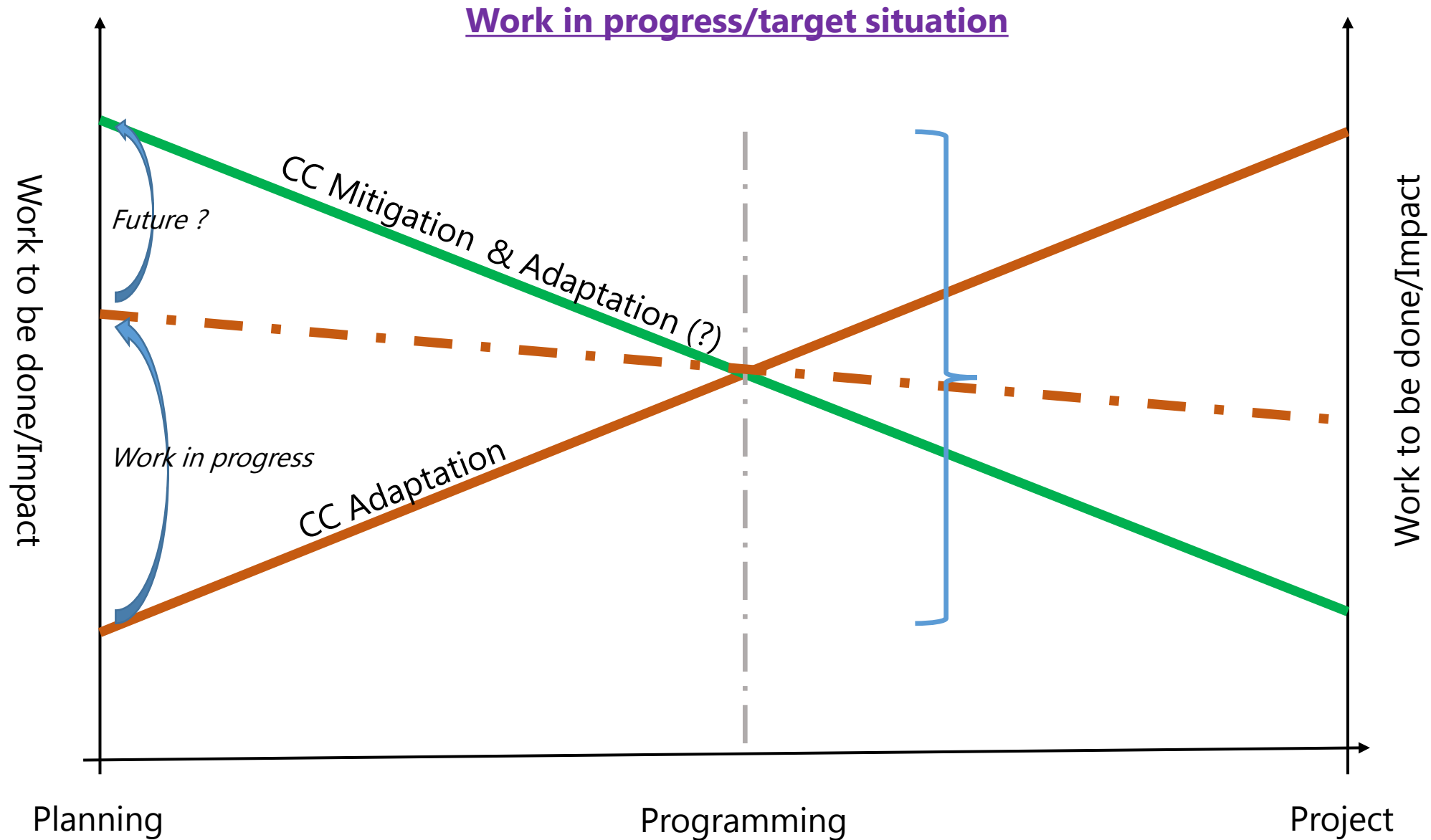
Answers to the questions:



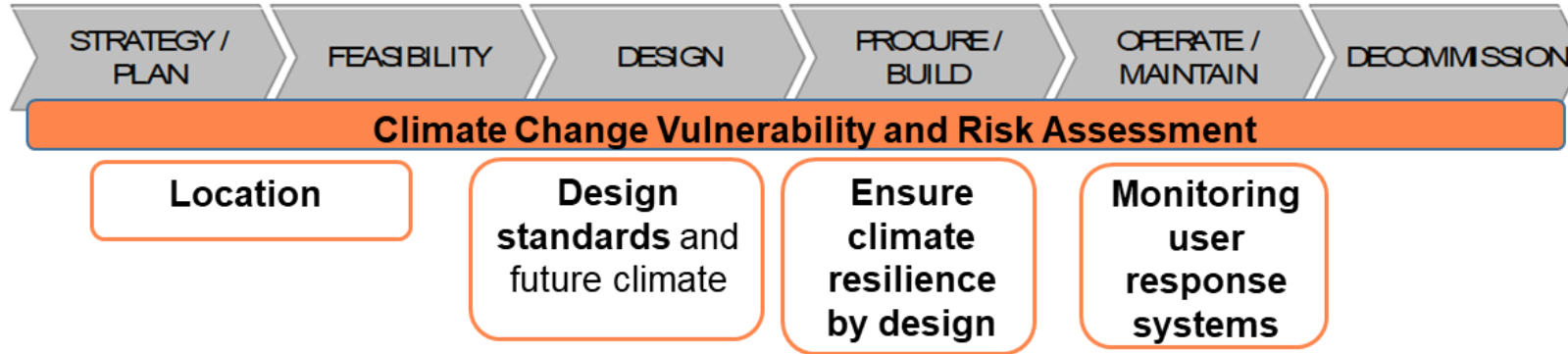
# Climate Change and Project Cycle – current/traditional approach



# Climate Change and Project Cycle – towards a new & more effective/streamlined approach



# Planning and CC adaptation



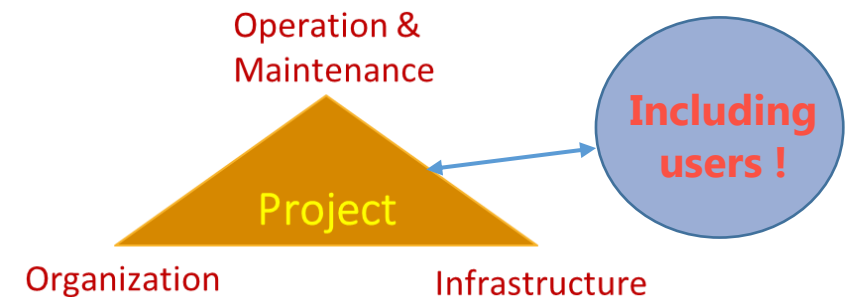
## At planning level provides...

- A set of **reference climate data and climate change forecasts**
- Identification of **main climate hazards, highly exposed corridor/areas & sensitivity levels** of transport systems
- **Mapping/assessment of climate change vulnerabilities**
- Develop **efficient O&M strategy** (incl. adequate financing) to ensure climate resilience of the systems, including monitoring, early warning and response systems

- **As early as possible in Project Development Cycle**

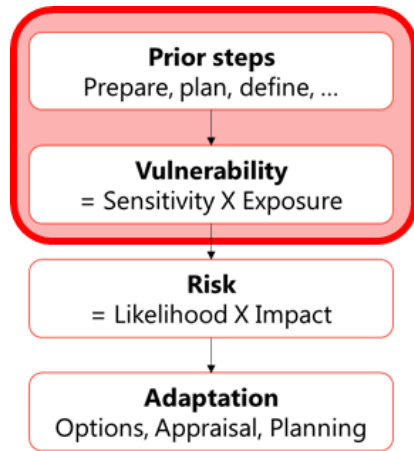


- **Broader set of resilient options**

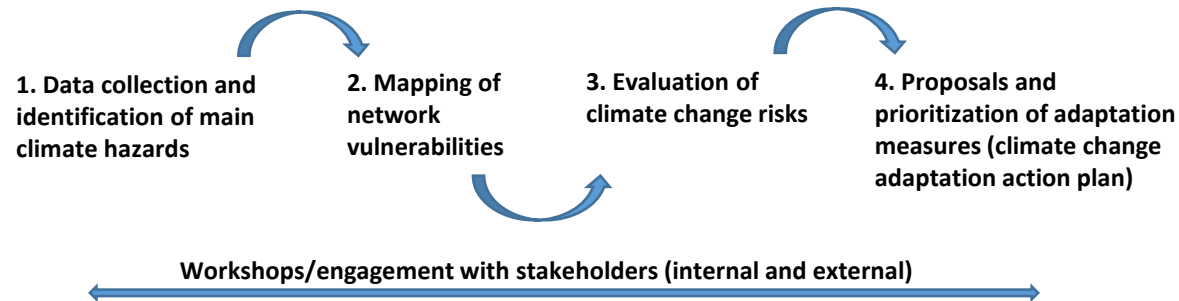




## Integrating climate change aspects into transport network development



### The process of Climate Resilience Analysis for Transport Networks



*This approach should enable network operators integrating climate change resilience into networks management including implementing relevant rehabilitation resilience programs or planning new resilient investments - sound basis to define Climate resilience considerations for planning & design, climate resilience considerations for O&M of the network, climate adaptation financing needs of networks, e.g. rail/road resilience rehabilitation programs*



***This working method and approach can fit all the main linear networks – transport, energy distribution, broadband/digital communication, ...***

# Some relevant examples of JASPERS activities on CC & Transport / Urban – ES, PT, IT, PL, GR, ...

- Spain:** Andalucia (PAAC, SUMP, CC Mitigation & Adaptation in transport plans/SUMPs, ...) , Murcia (SUMP with CC focus & transport network CC), National (MITMA – CC Adaptation of motorways, ADIF CC Adaptation)
- Poland:** Climate Action Plans 10 cities, Adaptation Plan National Roads, SUMP, DNAH & CC, Wroclaw Polish Water Utility adaptation inv. program
- Italy:** National OP Metro & JTF, Sicily, Sardinia, Campania, Calabria, Puglia – CC one of the main focus; CC proofing national guidelines; other under discussion
- Portugal:** IP (network CC), Lisboa (CC in urb. dev.), ...
- Greece:** Support to SUMP, integrated urban development, CC proofing
- EU-wide:** SUMP Training Program, SUMP Topic Guide on Decarbonisation of Urban Mobility (possible follow-up on Adaptation ?)



## Identified main needs and priorities in relation to CC (a)

- ✓ Preparation of strategic & action plans to face the CC emergency – from a focus mainly on mitigation/green transition to streamlining approach to resilience/adaptation
- ✓ Integration of CC adaptation considerations and priorities also into plans (sectoral/multisector/integrated)
- ✓ For Transport: development of Transport Plans/Strategies/SUMPs with a strong focus on CC – not only Mitigation but also and even more Adaptation
- ✓ Sustainable urban development taking CC as one of the primary focuses – how to improve resilience and liveability of cities considering expected weather changes (flooding, heat waves, wind, fires, ...) – with particular reference to social impacts and vulnerable users -> vulnerability assessment should not be limited to the infrastructure side but expanded to incorporate the perspective of users & operators

## Identified main needs and priorities in relation to CC (b)

- ✓ Identification of project pipelines – multisector/sectorial – enhancing CC adaptation objectives – based on strategic targets and priorities (including policy & funding priorities – EU/national etc.), on planning and enhanced analyses such as:
  - ✓ an integrated approach for improving resilience of linear networks – transport (rail, roads), energy distribution and broadband/telecommunication networks, ...
  - ✓ the development of fundamental tools and data sets – available for all - in particular:
    - a.** maps with grids indicating the level of risk (exposure) for each (relevant) climate hazard – current and forecast and
    - b.** general standardized table indicating the main sensitivities per type of measure/project/sector and macro-construction techniques and materials
- > The combination of **a)** & **b)** gives a quick and straightforward tool to identify the main climate risks for projects/measures in a certain area – fundamental for the CC Adaptation upstream definition (in particular planning and programming/selection of projects pipelines).