

# DEI, Sustainability, Environmental Justice and large infrastructure projects in the EU

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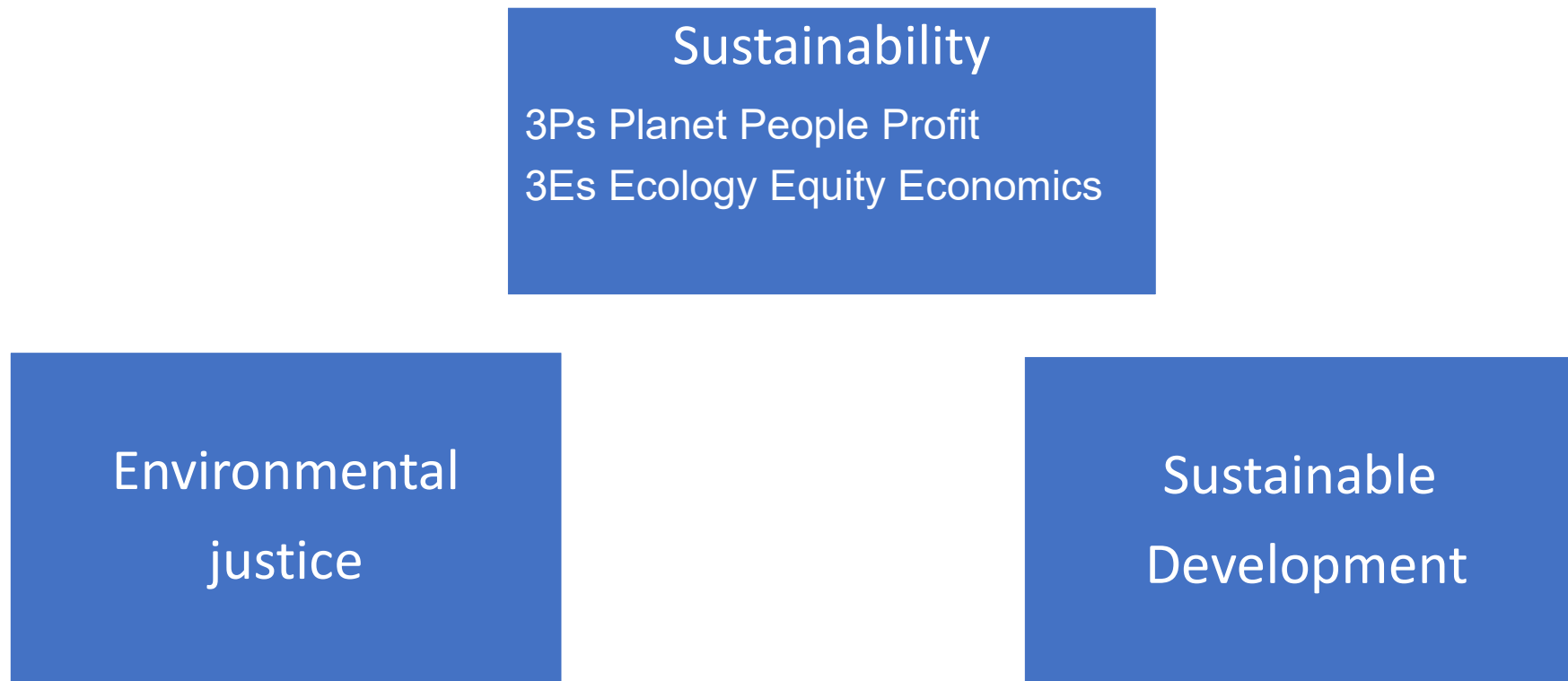
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# Sustainability, sustainable development and environmental justice in large infrastructure projects



## **Economic Appraisal for large investment projects for cohesion in the EU: From mandatory CBA to additional sustainability checks and alternative appraisal methods**

- CBA has been used in Cohesion Policy since 1990s and has been a requirement since 2000
- CBA in EU was initially focused on economic efficiency and not on environmental justice
- Gradually more sustainability elements were introduced in the CBA as a couple of dimensions of environmental (in)justice became apparent:
  - distributive ones, which look at the distribution of resources ('goods' and 'bads', ie benefits and burdens), be it political, economic or environmental;
  - procedural ones, which examine the institutional voice and access to decision-making; and
  - corrective ones, which observe access to legal remedies to address environmental harms.

## **The procedural and corrective dimensions of environmental justice are what is usually understood as ‘environmental justice’ in the EU**

- the Aarhus Convention 1998
  - United Nations Economic Commission for Europe (UNECE) – Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (adopted on 25 June 1998 in Aarhus), available at [www.unece.org/fileadmin/DAM/env/pp/documents/cep43e.pdf](http://www.unece.org/fileadmin/DAM/env/pp/documents/cep43e.pdf)
    - The ‘three pillars of environmental democracy’:
      - the right of access to environmental information,
      - the right of public participation in environmental decision-making, and
      - the right of access to justice in environmental matters.
  - The Aarhus Convention in the EU is usually celebrated as a success story. The EU institutions adopted a range of regulations and directives to implement the Convention’s provisions, applicable to both the Member States and the EU itself.

## **On the distributive dimension there is no clear guiding rule**

- The issues and discussions on introducing distributional concerns in CBA:
  - The role of distributional effects on policy choice is disputed:
    - the policy that maximize net benefits should be selected and distributional concerns should be addressed through other measures, such as tax and transfer programs
    - or CBA should be supplemented with distributional analysis and decision makers should weigh efficiency and distribution in policy choice. The separation of efficiency and distribution is misleading. (Hammitt,2020, Accounting for the distribution of benefits & costs in benefit-cost analysis)
  - Most common approaches:
    - Traditional CBA with additional policy recommendations
    - The Social Welfare Function Approach (maximising the sum of all the individual utilities)
    - Weighted CBA

| Europe 2020 Targets | Effects quantifiable through the CBA                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Employment          | The effect, in terms of employment used by the project, is captured by applying the Shadow Wage Conversion Factor to labour cost. The effect, in terms of employment spilling over from the project, is captured by the additional profit created, e.g. by new spin-off companies.                                                                                                                                                                                                                |
| Innovation          | The contribution to the innovation objective is assessed by: <ul style="list-style-type: none"> <li>- the economic returns generated by license deals; and</li> <li>- the technological progress generated by the project.</li> </ul>                                                                                                                                                                                                                                                             |
| Climate change      | The responses to climate change are assessed by estimating costs and benefits of integrating: <ul style="list-style-type: none"> <li>- climate change mitigation measures, by measuring the economic value of greenhouse gas (GHG) emissions emitted in the atmosphere and the opportunity cost of the energy supply savings;</li> <li>- climate change adaptation measures, resulting from the assessment of the project's risk-exposure and vulnerability to climate change impacts.</li> </ul> |
| Education           | The contribution to a higher level of education is assessed by estimating the expected increased income of students and researchers due to better positioning on the job market, as well as the economic value of knowledge outputs (e.g. scientific articles).                                                                                                                                                                                                                                   |
| Poverty             | Effects on poverty reduction may be assessed by evaluating the equity dimension of the project through the consideration of the households affordability (ability-to-pay), in particular the less wealthy to access a given public service and the computation of a set of welfare weights.                                                                                                                                                                                                       |

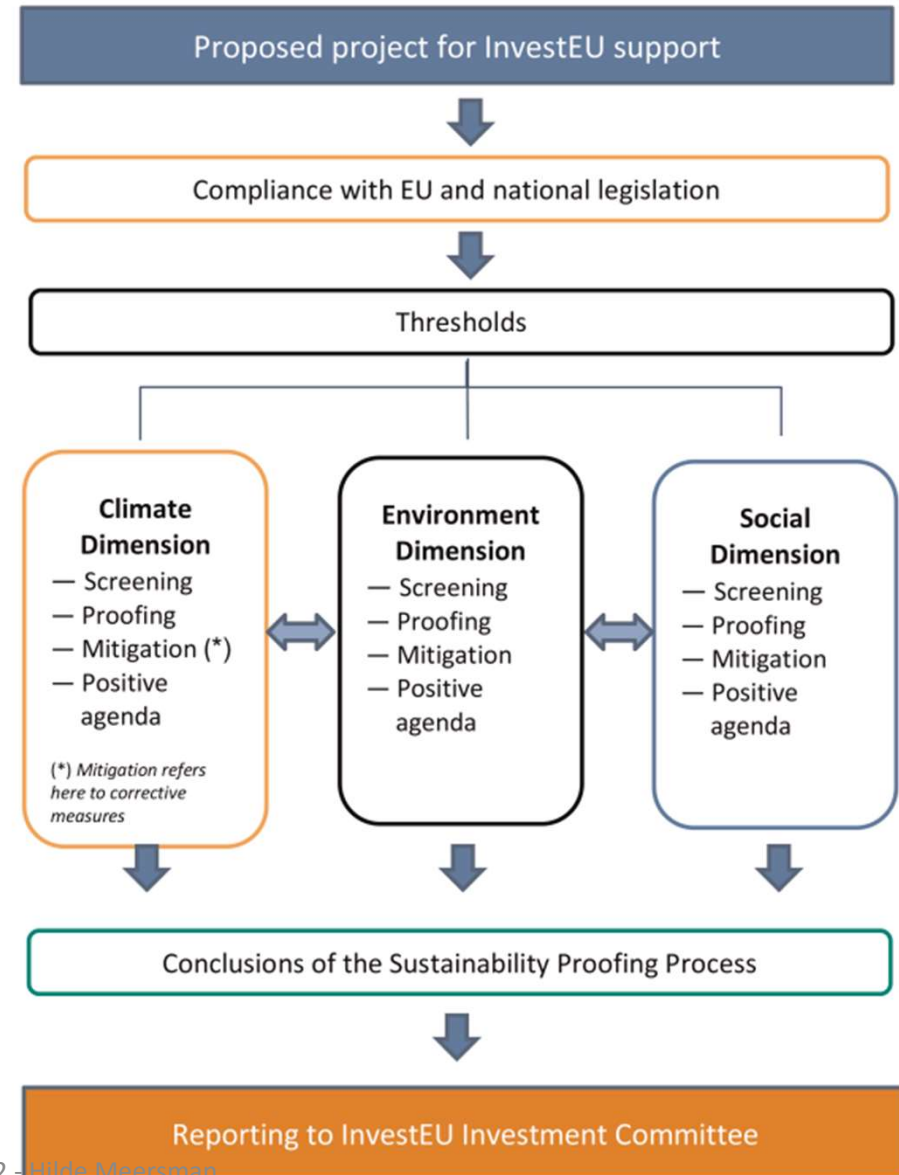
## Guide to cost-benefit-analysis of investment-projects for cohesion policy 2014-2020

[https://ec.europa.eu/regional\\_policy/en/information/publications/guides/2014/guide-to-cost-benefit-analysis-of-investment-projects-for-cohesion-policy-2014-2020](https://ec.europa.eu/regional_policy/en/information/publications/guides/2014/guide-to-cost-benefit-analysis-of-investment-projects-for-cohesion-policy-2014-2020)

# The Sustainability Proofing Process 2021

Regulation (EU) 2021/523 of the European Parliament and of the Council of 24 March 2021 establishing the InvestEU Programme and amending Regulation (EU) 2015/1017  
<http://data.europa.eu/eli/reg/2021/523/oj>

European Commission (2021), *Technical guidance on sustainability proofing for the InvestEU Fund*, C(2021) 2632 final, European Commission, Brussels [https://europa.eu/investeu/investeu-fund/about-investeufund\\_en](https://europa.eu/investeu/investeu-fund/about-investeufund_en)



## **EU Economic Appraisal Vademecum 2021-2027 General Principles and Sector Applications**

([https://ec.europa.eu/regional\\_policy/sources/docgener/guides/vademecum\\_2127/vademecum\\_2127\\_en.pdf](https://ec.europa.eu/regional_policy/sources/docgener/guides/vademecum_2127/vademecum_2127_en.pdf))

- ‘...make Cohesion Policy rules simpler and leaner, to reduce administrative burden for beneficiaries, especially for SMEs and promoters of small projects...’

([https://ec.europa.eu/regional\\_policy/sources/docgener/guides/vademecum\\_2127/vademecum\\_2127\\_en.pdf](https://ec.europa.eu/regional_policy/sources/docgener/guides/vademecum_2127/vademecum_2127_en.pdf))

- Several appraisal methods can be used:
  - Cost Benefit Analysis CBA
  - Least Cost Analysis LCA
  - Cost-Effectiveness Analysis CEA
  - Multi-criteria Analysis MCA

# EU Economic Appraisal Vademecum 2021-2027: Suggested EA methods by investment area

Cost Benefit Analysis CBA, Least Cost Analysis LCA, Cost-Effectiveness Analysis CEA  
Multi-criteria Analysis MCA

| Area                        | Investment area                                                         | Project type     |                          |
|-----------------------------|-------------------------------------------------------------------------|------------------|--------------------------|
|                             |                                                                         | Small projects   | Large/strategic projects |
| <b>Water and wastewater</b> | Water and wastewater infrastructure (efficiency driven) <sup>(23)</sup> | LCA/CEA          | CBA                      |
|                             | Water and wastewater infrastructure (exclusively compliance driven)     | LCA/CEA          | LCA/CEA                  |
|                             | Flood prevention                                                        | Simplified CBA   | CBA                      |
| <b>Transport</b>            | Transport infrastructure (all modes)                                    | (Simplified) CBA | CBA                      |
|                             | Transport infrastructure: compliance-driven project (all modes)         | CEA/MCA          | CEA/MCA                  |
|                             | New technology in transport                                             | CEA/MCA          | CBA/CEA/MCA              |
| <b>Healthcare</b>           | Disease prevention / treatment programmes / new technology              | CEA              | CEA                      |
|                             | Healthcare infrastructure                                               | Simplified CBA   | CBA                      |

Full table available at

[https://ec.europa.eu/regional\\_policy/sources/docgener/guides/vademecum\\_2127/vademecum\\_2127\\_en.pdf](https://ec.europa.eu/regional_policy/sources/docgener/guides/vademecum_2127/vademecum_2127_en.pdf)

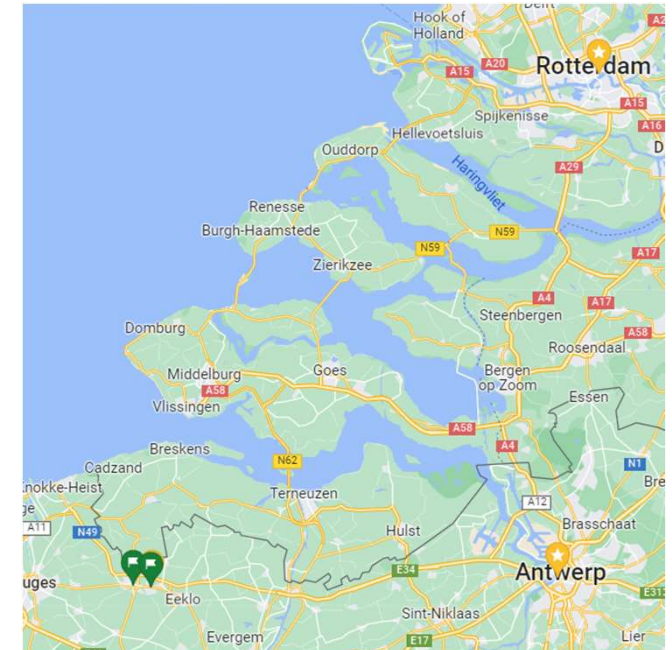
## Stakeholder engagement (SE)

- Stakeholder identification and an analysis of the distributional effects of the project are useful complements to the results of the CBA, helping to meet the objective of putting into practice a clear decision making process
- To secure successful project implementation and operations, stakeholders should be involved during the process of project preparation following a participatory approach but also **during** the implementation (Stakeholder management and path dependence).
- One of the first attempts proposed in the international literature related to the introduction of SE **within** CBA was that of Pagliara and Di Ruocco (2018) 'How public participation could improve public decisions on rail investments?', Regional Science Policy & Practice, Vol. 10, pp. 383–403 .

## Case: Expansion of the port of Antwerp on the left bank of the river Scheldt

- Illustration of the importance of governance structure and stakeholder engagement in large-scale port development (1960-2010)

M. Dooms et al. (2013) Stakeholder management and path dependence in large-scale transport infrastructure development: the port of Antwerp case (1960–2010) / Journal of Transport Geography 27 (2013) 14–25



- the Napoleon era (1800–1815): plans to build a maritime city on the left bank.
- 1850–1914: several plans to develop the left bank, designed and financed by private parties but rejected by the Antwerp City Council
- 1955–1965: a 10-year development scheme on the right bank ended (space limitations)
- 1959: beginning of industrial activity in municipality on the left bank (3M in 1962)
- 1964: announcement of plan to reconvert 10,000 hectare of agricultural area on the left bank into a maritime and industrial development area - protests
- 1968: start of implementation of the plan (expropriations)
- 1978-1995: slowdown of infrastructural and economic development on left bank
- 1995: plan for a large tidal container dock: Deurganckdock It opened in 2005 (after a lot of protest)
- 2013: plan for 2<sup>nd</sup> tidal container dock: Saeftinghedock but a lot of protest and legal procedures
- March 2022: agreement to stop the legal procedures against the expansion of the port of Antwerp



The large protest of stakeholders on the left bank are mainly the consequences of

- Procedural issues mainly due to the governance structure of the Antwerp Port Authority (APA) and the port of Antwerp
  - Left and right bank belong to different regions and municipalities
  - Two governing bodies: APA and the “Left Bank Company (LBC)”
  - Initially APA had a considerable share in the LBC but not the other way round
- Distributive issues linked to the governance structure of the port of Antwerp and the Left Bank Company combined with changes in the development plans
  - two important planning decisions were proposed by the APA and right bank stakeholders, and consequently approved by various higher government levels
    - the decision to transform agricultural areas into port and industrial areas in 1965 (the issue of Doel);
    - the decision in 1998 to transform what was mainly believed by left bank stakeholders to be future maritime-industrial areas (to be managed by the LBC) into maritime cargo handling and distribution facilities (to be managed by the APA).

# What did we learn and what do we need?

- **Data**
  - Whatever method we want to use for appraisal of large infrastructure projects, taking account for equity and fair distributions needs data on the groups which are impacted differently (income, race, location,...)
- **Indicators of broad social welfare:**
  - Beyond pure financial welfare
  - Intertemporal, intergenerational welfare
  - Fair distribution of welfare
  - Interregional, international welfare
- **Clarity, transparency and openness** in de appraisal methods on the distributional and equity assumptions
- **Stakeholder involvement** during project preparation but also during and even after the implementation is necessary
- Incorporate the design of **appropriate governance structures**
- **Social license to operate**