

# Cost-Benefit Analysis

*Dr. Sarunas Bruzge*



This Project is funded by the European Union



Project implemented by Human Dynamics Consortium

# CBA is a way of thinking



This Project is funded by the European Union



Project implemented by Human Dynamics Consortium

# Main CBA questions for evaluator

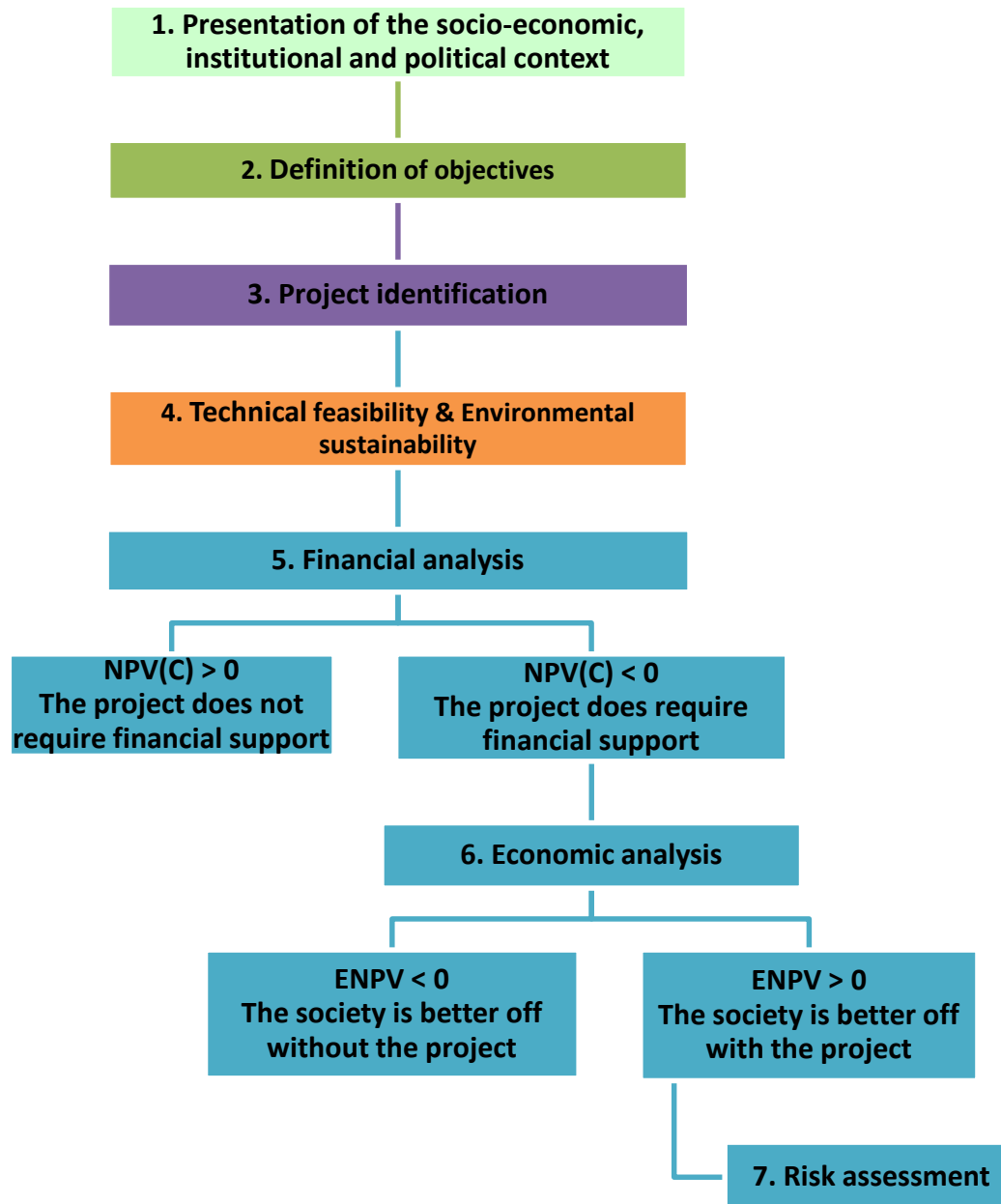
- assess whether the project is worth co-financing (from an economic point of view);
- assess whether the project needs co-financing (from a financial point of view).



This Project is funded by the European Union



Project implemented by Human Dynamics Consortium



# Methodology of CBA: Financial analysis

Important aspects:

- Incremental costs and revenues
- Reference period
- Replacement costs and residual value
- Discount rate



This Project is funded by the European Union



Project implemented by Human Dynamics Consortium

# Methodology of CBA: Financial analysis

The Financial analysis shall include:

- Financial profitability of the investment (FNPV/C; FRR/C)
- Determination of contribution from the Funds
- Financial sustainability of the project
  - Aspects of loan financing;
  - PPP and cost-recovery;
  - Impact of affordability level.



This Project is funded by the European Union



Project implemented by Human Dynamics Consortium

# Methodology of CBA: Economic analysis

The Economic analysis shall include:

- Fiscal corrections
- Conversion of market to accounting (shadow) prices
- Evaluation of non-market impacts and corrections for externalities

*Financial revenues in the form of user fees, charges and tariffs shall be excluded from the economic analysis, and replaced with estimation of the direct effects on users, either through 'willingness to pay' or accounting prices.*



This Project is funded by the European Union



Project implemented by Human Dynamics Consortium

# Methodology of CBA: Economic analysis

Calculation of the economic performance indicators:

- Social discount rate
- Economic Net Present Value (**ENPV**) (ENPV should be more than 0)
- Economic Rate of Return (**ERR**) (ERR should be more than 5 %);
- Benefit/Cost ratio (**B/C**) (B/C ratio should be more than 1);



This Project is funded by the European Union



Project implemented by Human Dynamics Consortium



# Methodology of CBA: Specific aspects of environmental projects

**Compliance with the polluter-pays principle requires that:**

- a) user charges recover the full cost of environmental services;
- b) the environmental costs of pollution and preventive measures are borne by those who cause pollution;
- c) charging systems are proportional to the costs (capital costs, costs of pollution, costs of preventive measures, costs of resources).



This Project is funded by the European Union



Project implemented by Human Dynamics Consortium

# Methodology of CBA: Specific aspects of environmental projects

**Compliance with the full-cost recovery principle includes that:**

- a) tariffs aim to recover the capital cost, the operating and maintenance cost, including environmental and resource costs;
- b) the tariff structure maximises the project's revenues before public subsidies, while taking affordability into account.



This Project is funded by the European Union



Project implemented by Human Dynamics Consortium

# Methodology of CBA: Specific aspects of environmental projects

## Affordability

1. Users do not pay more than what they can afford.
2. In order to ensure that the service or good is affordable for the most disadvantaged groups states may cap the level of charges or subsidise the tariff for these groups.
3. Where affordability is a relevant aspect, the requirement for **minimum-cost recovery** should enable covering at least the operating, maintenance and replacement costs.
4. Provision of information on the affordability ratios for average and low-income groups is advisable.



# Thank you!



This Project is funded by the European Union



Project implemented by Human Dynamics Consortium