

Developing practices for supporting EIA with Multi-Criteria Decision Analysis (MCDA)

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IMPERIA Project

”Improving environmental assessment by adopting good practices and tools of MCDA”

This presentation:
”**Opportunities** of MCDA to support EIA”



Premises of the IMPERIA Project

Practitioners

**Need to
improve
consistency and
transparency
of EIA**



MCDA Experts

**Structured
approach of
MCDA**

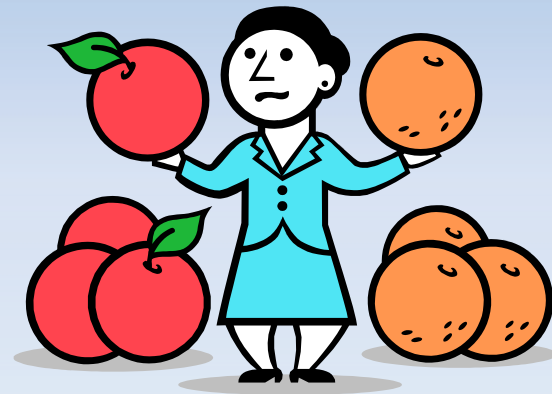
Structured view with MCDA model

Facts

Values



+






Traditional holistic comparison



Criteria: Price, color, speed, ...

Structured analysis of MCDA

Criteria			
Price	\$35k	\$25k	\$30k
Color	Good	Bad	Very good
Speed	150mph	100mph	130mph
⋮			
Overall Score	93	87	96

Advantages of MCDA

Learning of the
problem

Identification of trade-offs
of different stakeholders

Systematic structuring
of objectives

Transparent assessment
of alternatives

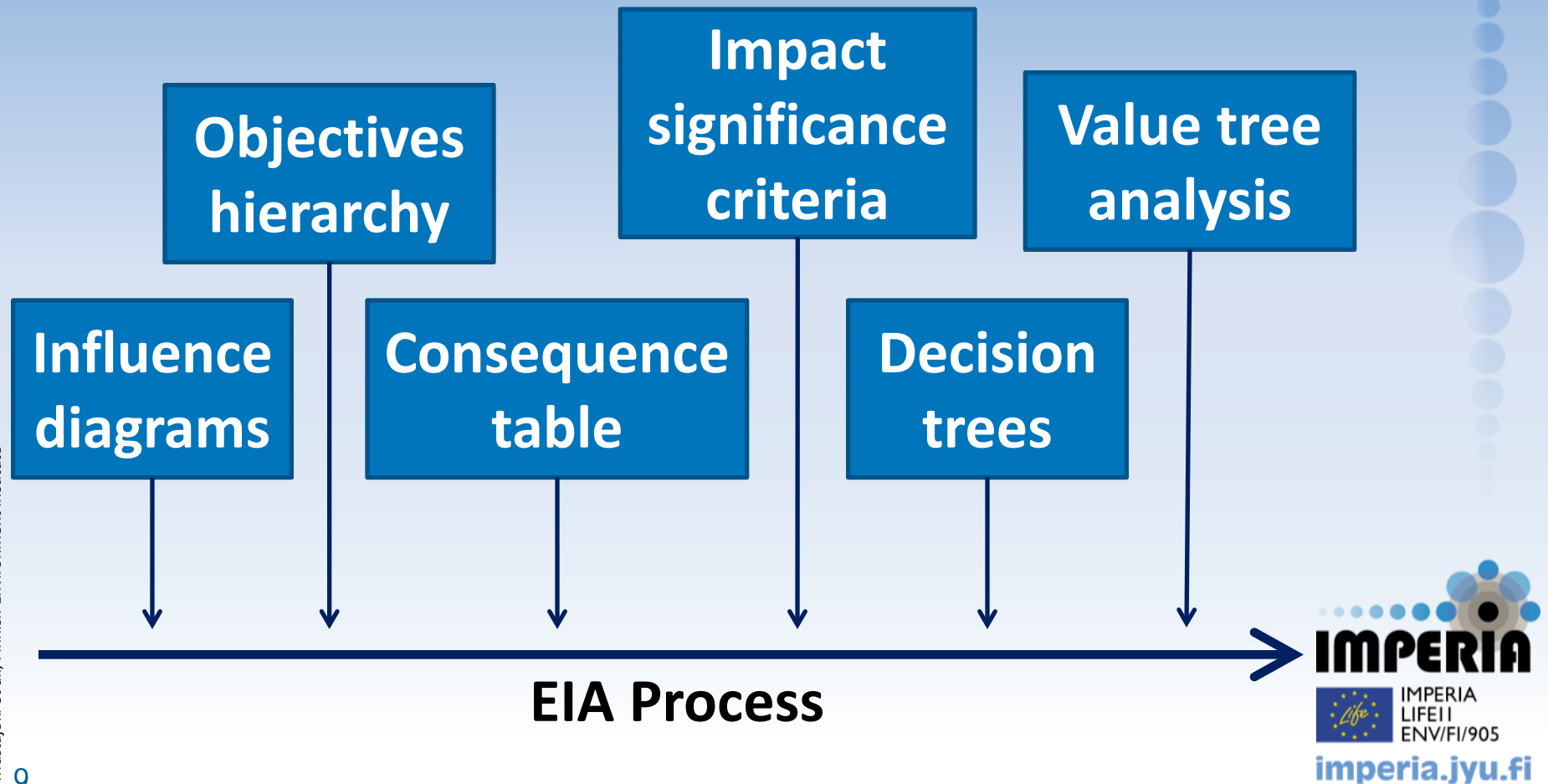
Accommodation of
incommensurable effects

MCDA in short...

Divide
and
conquer



Various MCDA tools available to support EIA process



Opportunities of MCDA to support EIA

Potential areas of MCDA identified in **IMPERIA**:

1. Initial scoping of the impacts
2. Impact significance assessment
3. Stakeholder participation
4. Evaluation of alternatives

1. Support for initial scoping of the impacts with objectives hierarchy

Wind power example

Impacts to be assessed

Impacts to nature

Impacts to human well-being

Impacts to societal objectives and land use

Birds

Other fauna

Flora

Natura 2000

Water bodies

Ground and bedrock

Health values

Recreational activities

Community economy

Cultural environment

CC mitigation objectives

Land use

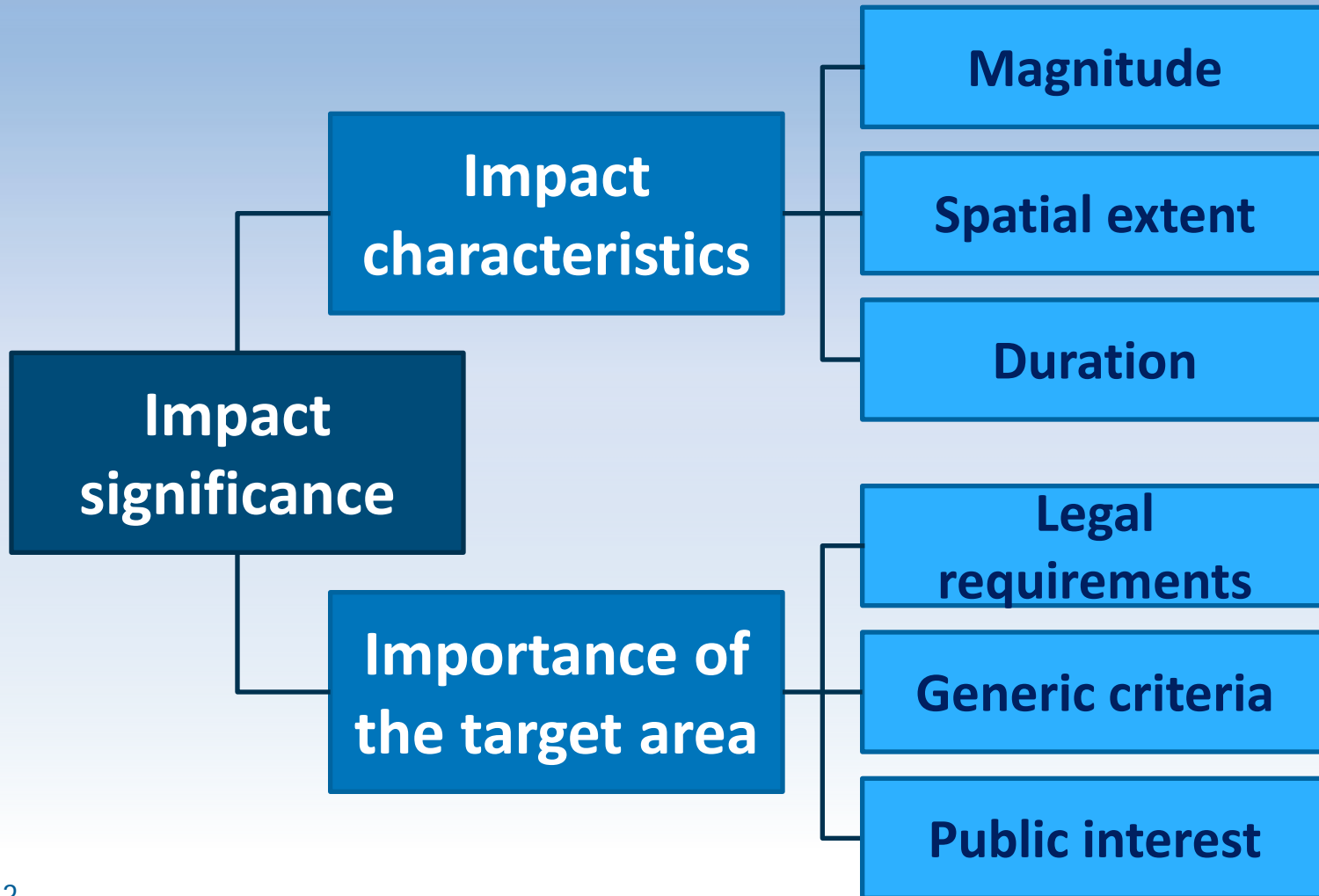
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2. Support for impact significance assessment



“How large impact is significant?”

Structured MCDA framework for impact significance assessment

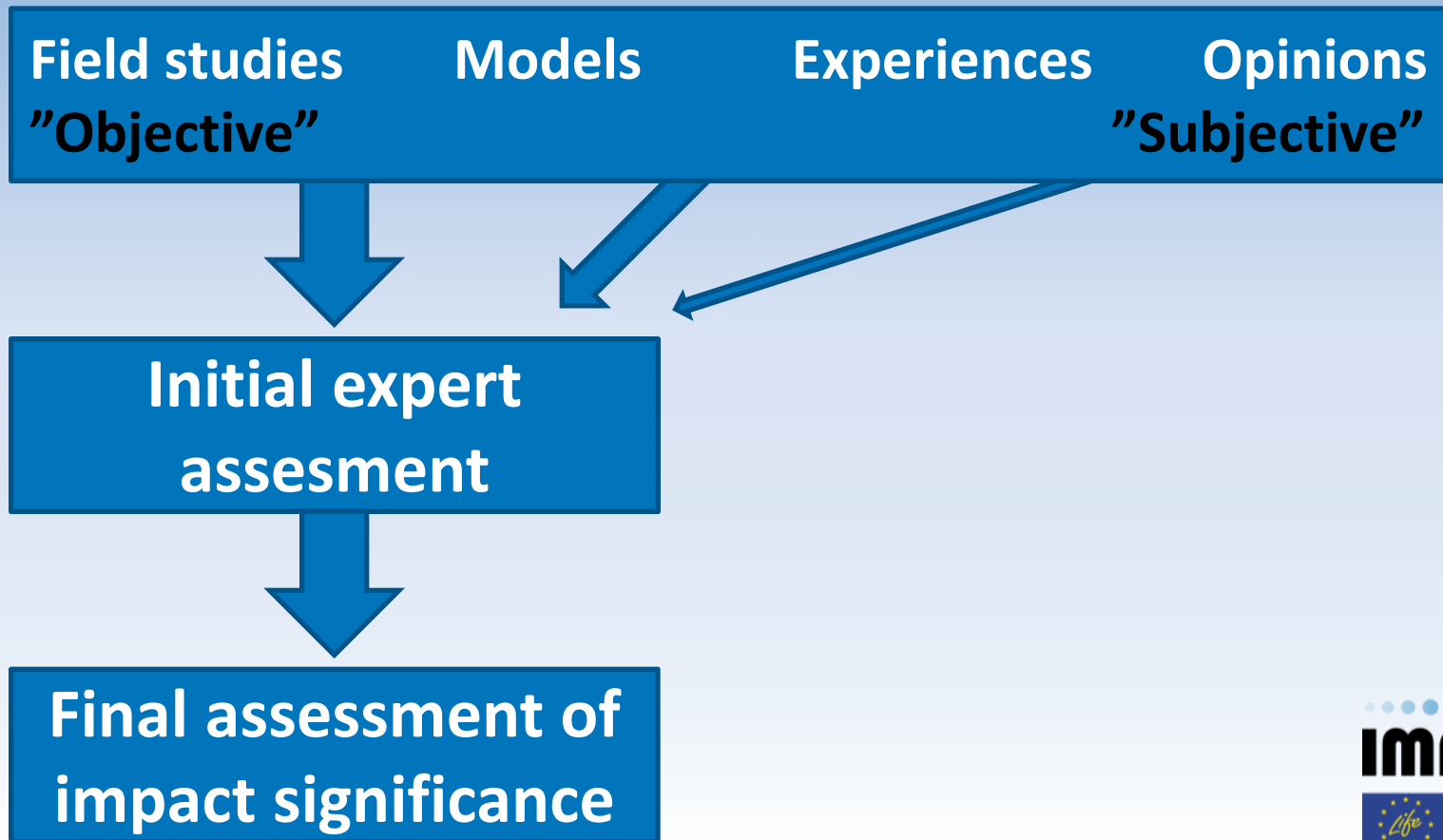


IMPERIA tool for impact significance assessment

		Alternative 1									
		Significance			Direction		Impact magnitude		Magnitude		Spatial e
		Overall estimate	Suggestion		Estimate	Suggestion					
8	Impacts on nature							Small - - - - - Large			
9	Birds	- Small	- Small	↓	- Small		█ _ _ _	Small		Local	
10	Local										
11	Migratory										
19	Mammals	-- Medium	-- Medium	↓	--- Large		█ █ █ █	Large		National	
20	Game										
21	Other										
23	Plants	- Small	- Small	↓	- Small		█ █ █ _ _ _	Small		Areal	
24	Natura 2000										

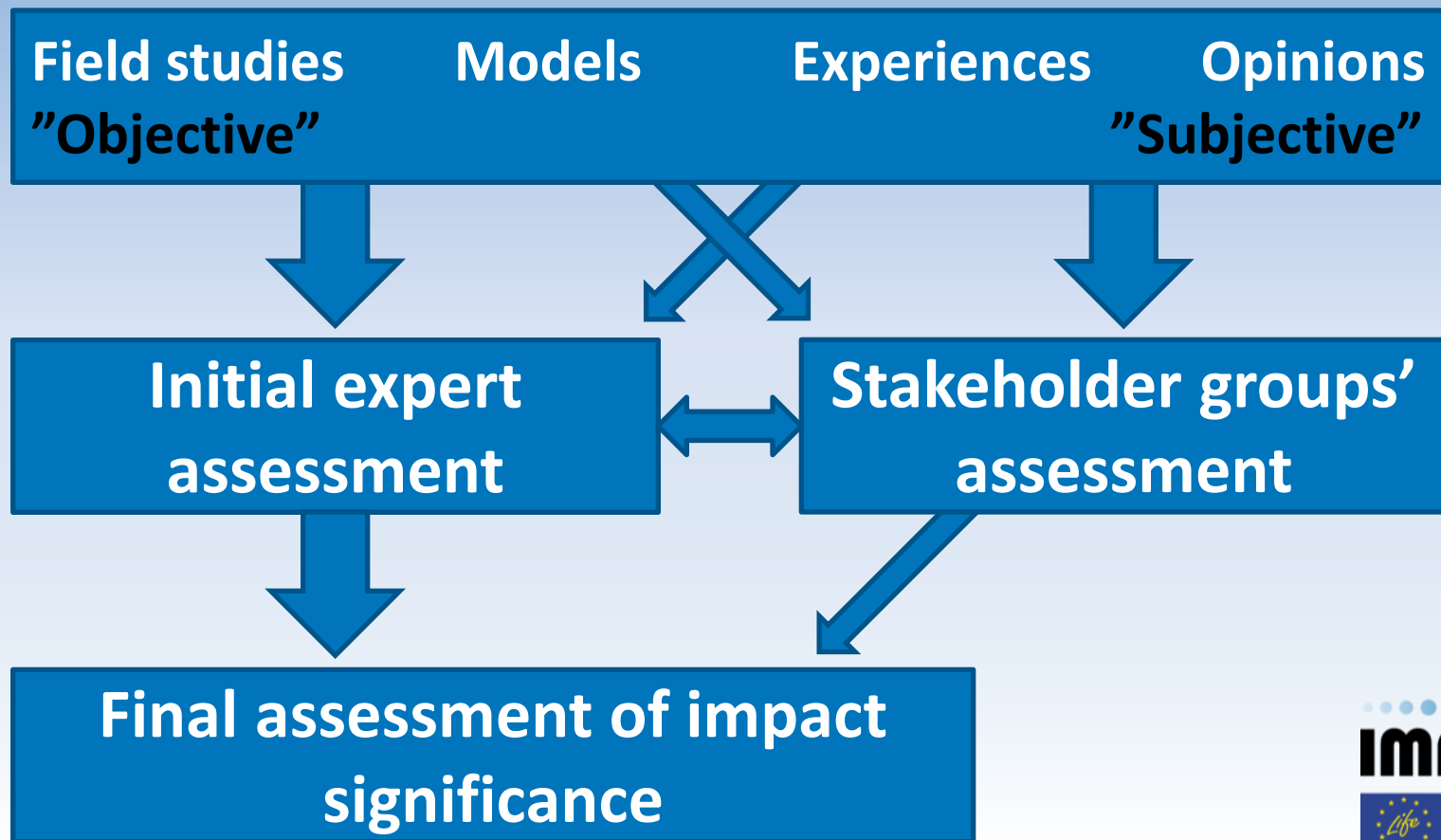
3. Support for participating stakeholders

Pure expert assessment

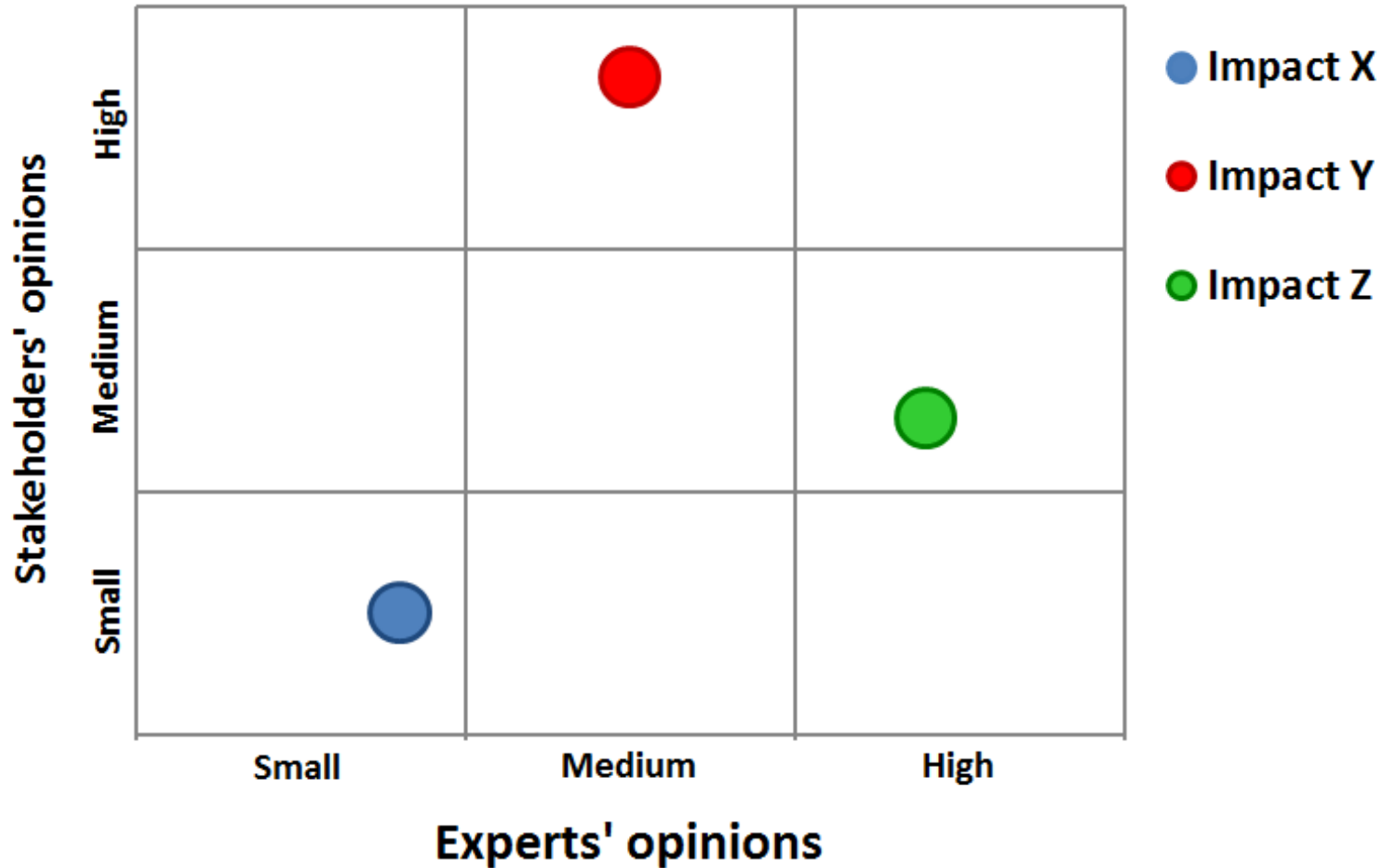


Stakeholder participation framework

Assessment with stakeholder participation



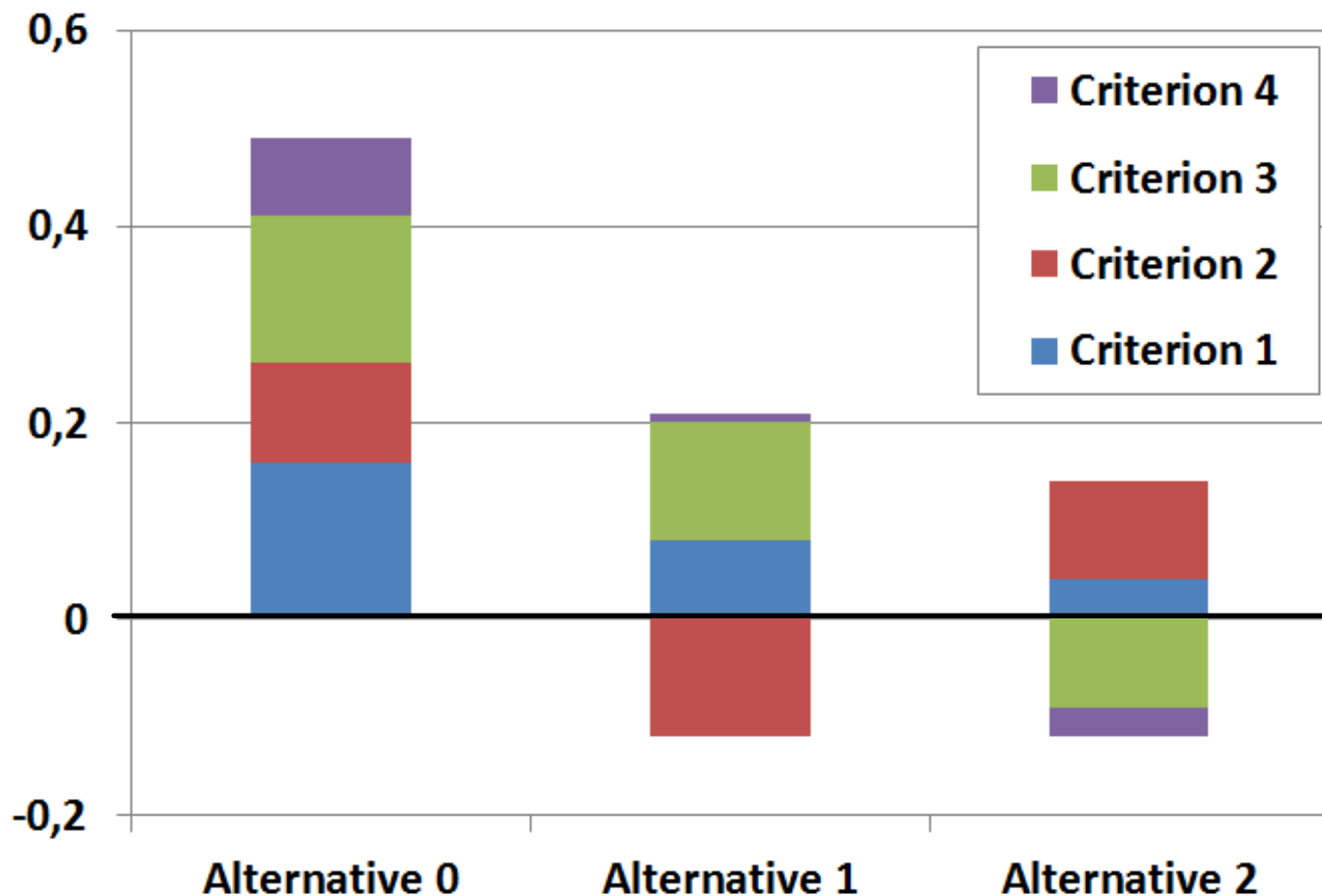
IMPERIA tool for stakeholder participation



4. Support for the evaluation of the alternatives

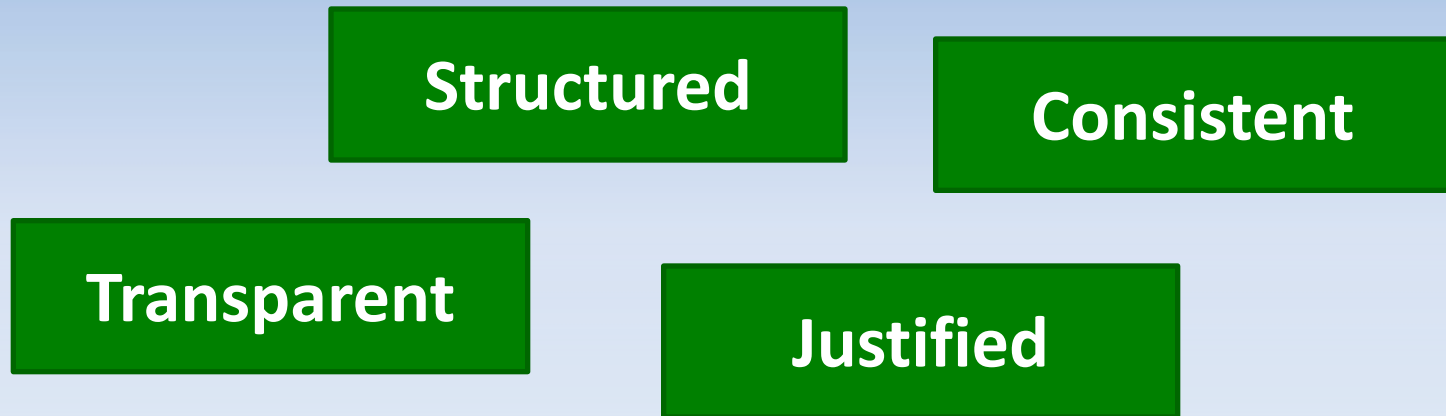
“How good are the alternatives as a whole?”

IMPERIA MCDA tool for the evaluation of the alternatives



Conclusions

Keywords of MCDA for supporting EIA:



Encouraging initial experiences from the
IMPERIA project

Next step: **Put all this in practice!**