

Methodologies for Environmental Valuation



Sofia Ahlroth

Environmental Economics Unit,
Swedish EPA

What is valuation?

- An assessment of the importance of a certain amenity
- Can be in monetary or non-monetary terms

Why put a price on the environment?



- To rank impacts from a welfare perspective
- To be able to estimate whether benefits of a certain policy or action exceed the costs

Cost-benefit analysis



- Non-market goods and services are valued in monetary terms
- Can be used for setting targets or assessing net benefits of policies or measures
- Can span over several environmental issues

Monetary valuation methods

Revealed willingness to pay



Market prices

Revealed preferences:

- Travel costs
- Hedonic pricing
- Production functions

Expressed willingness to pay



Stated preference methods:

- Contingent valuation
- Choice modelling

Imputed willingness to pay



- Avoided restoration costs/defensive expenditures
- Replacement costs
- Substitute costs

Political willingness to pay



- Costs to reach target
- Taxes

Non-monetary valuation methods

Proxy methods



- Ad hoc scoring
- Indicators in physical units

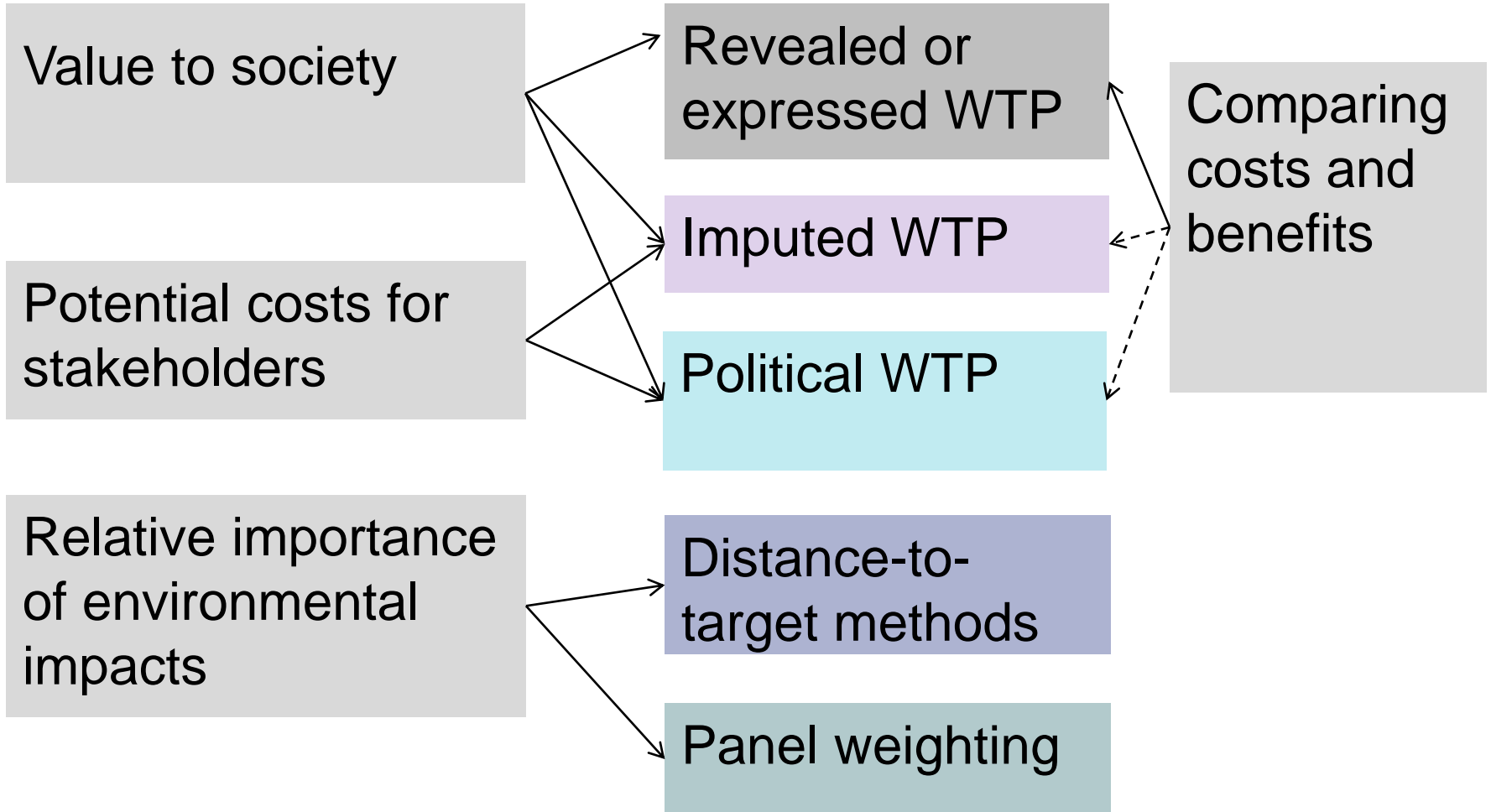
Panel weighting methods



- Multicriteria analysis
- Ad hoc methods using expert assessments, stakeholders etc

Distance-to-target methods

What do we want to know?



Valuation in different tools

Tool	Users	Study object	Need for valuation/ weighting	Weights	Midpoint/ endpoint	Generic or specific weights
CBA	Policy makers, public sector agencies	Projects, policies	Required	Monetary	Preferably endpoint	Both generic and site-specific
LCA	Policy makers, public sector agencies, companies	Products, production systems, policies	Optional	Both	Both	Primarily generic
LCC	Companies, public sector agencies	Products, production systems	Optional	Monetary	Both	Generic or company-specific

Shortcuts

- Benefit transfer
- Generic values
- Valuation sets

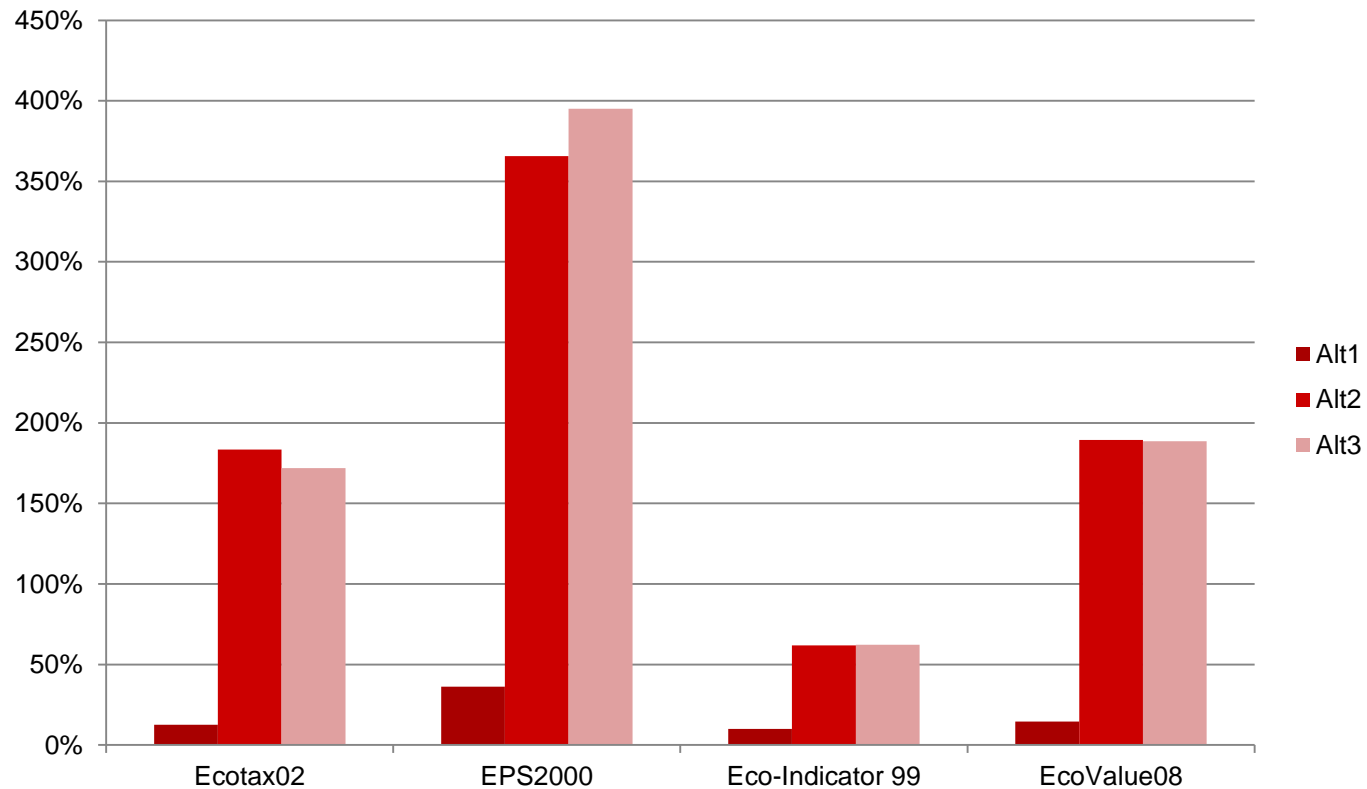


Valuation sets

Set	Valuation/weighting method
Ecoindicator99 ReCiPe	Damage in physical units
EPS2000	Expressed&imputed WTP and market prices
ExternE	Expressed WTP and market prices
Ecotax02	Political WTP: taxes
Ecovalue08	Expressed WTP

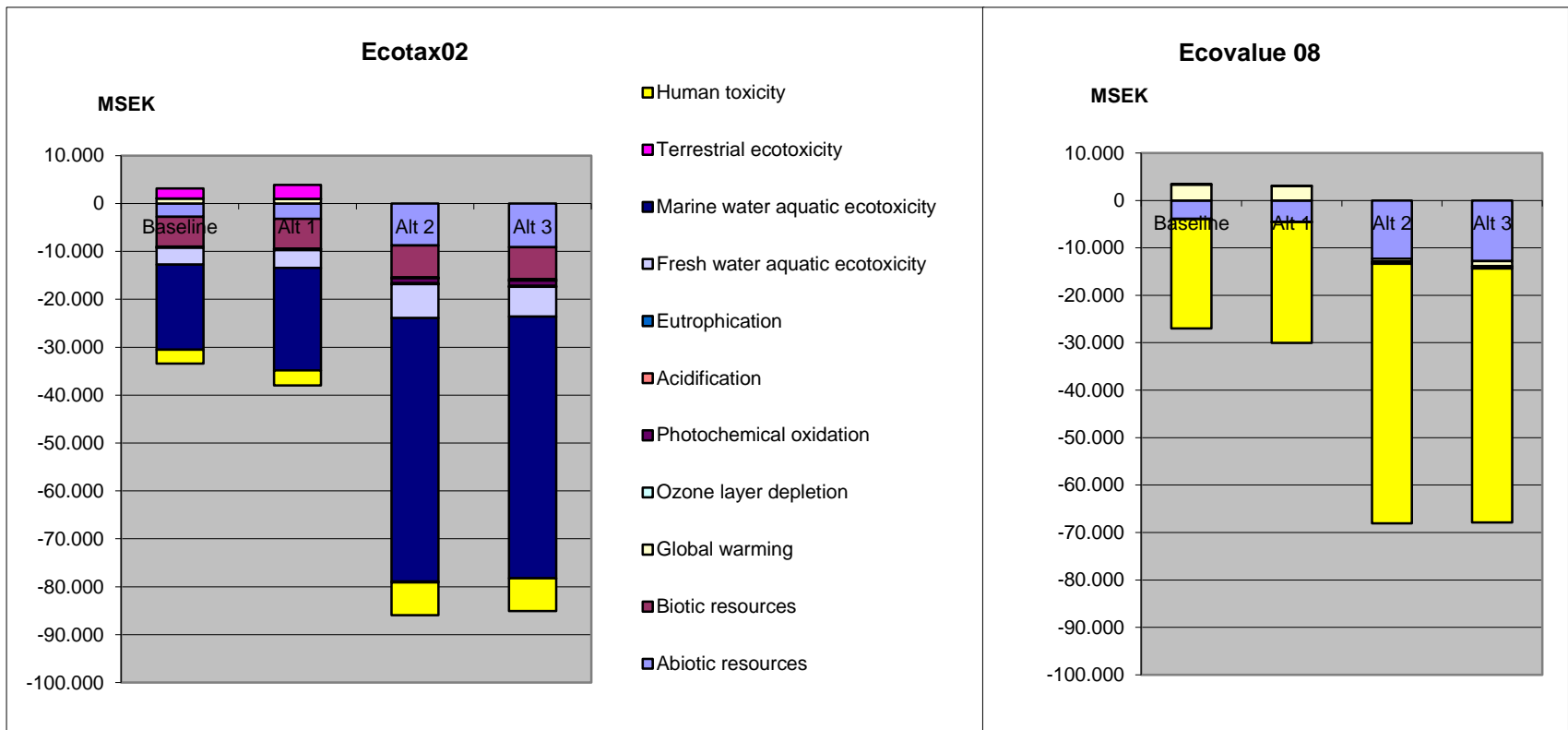
Comparing waste management scenarios

Reduction in environmental burdens relative to baseline scenario



Comparing waste management scenarios

Allocation to environmental impact categories. Total impact in million SEK



Conclusions?

- There are several methods and valuation sets out there – do sensitivity analysis
- When in doubt – use intervals

Thank you!



Kolguskär, Stockholm archipelago