



The background is a reproduction of the painting 'Olympia' by J.M.W. Turner, depicting a vast field of red poppies under a bright, cloudy sky. In the distance, a line of trees and a few figures can be seen. The overall style is Impressionist, with visible brushstrokes and a focus on light and color.

# Conclusions

Indicators of environmental sustainability in transport  
*An interdisciplinary approach*

Final Conference of COST 356, Paris, 15. March 2010

# Themes

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- The need for ‘(better) indicators of environmental sustainability of transport, why and how
- The strengths and weaknesses of indicators as measurement and decision supporting tools
- The functions of composites and joint consideration
- The roles of various institutions
- Tensions and conflicts
- Recommendations for the future and next steps

# The need for '(better) indicators of environmental sustainability of transport

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- Indicators and methods for EST assessment needed, to ensure
  - Balanced decision making
  - Reduction of complexity
- Develop, improve and apply indicators across the board
- Indicators can even work in areas such as 'loss of cultural heritage'
- Some needs:
  - Develop and improve indicators for areas like landscape, noise, climate footprint and impacts from specific waste generated by transport
  - Indicators to clearly connect transport causes to environmental effects
  - Other modes than land transport, such as maritime

# The strengths and weaknesses of indicators as measurement and decision supporting tools

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- Many impacts have fairly reliable indicators
- Often problems with regard to actual measureability & real application
- Validity depend on how the impacts are defined;
- Often problems with validity and interpretability in regard to final environmental impact, for example:
  - Landscape: Interpretability can mislead; Scale, boundary matters; Ind. are for physical measures, while targets often refer to biological effects (e.g ecosystem viability)
  - Noise: Good physical measures; but how about measuring annoyance and health effects?

# The functions of composites and Joint Consideration Methods

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- Composite indicators have advantages and disadvantages; the same goes for MCDM's; 'one size does not fit all'
- The legitimacy of application and choice of method will depend on the situation
- Indicators become more uncertain, less transparent, etc as aggregation levels increase
- Determination of *significance* is the most critical part
- Combination of MCDA and participatory approaches
- Theory is more advanced than practice
- Assessments must be made, despite incompleteness

# The roles of various institutions

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- Challenge to establish and maintain contact across researcher areas and with policy makers
  - COST Office to support how to apply and implement results in practice?
  - Collaboration with Joint Research Centre on Composites
  - IMF and others for example on indicator criteria
  - Collaboration with CIVITAS and Urban Mobility
  - Dissemination via European Environment Agency
- ..but who can take the lead for making sustainable transport more measurable and indicators used...?*

# Other key points

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- Quality control, who will do this?
- Case studies as a way forward
- Tool boxes are in demand
- The role of context can be to make it complex
- Indicator production is not value free
- Decision making is not rational...

# Tensions and conflicts...

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- Different views on what ‘sustainability’ implies
- ‘Idealist’ views on indicators versus ‘realist’ ones
- Few indicators but then not too few...
- Comprehensiveness versus decision making under pressure, how can indicators help both?
- Methodological sophistication versus enhanced participation, depending on situation; risk of alienation
- ‘Combination’, but on whose terms?
- Meanwhile transport goes on, business as usual...!

# Recommendations for the future and next steps

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- Make clear who are the users; rethink recommendations?
- Continue critical review and development of indicators of individual impacts as well as methods for joint consideration
- Criteria based efforts seem useful and widely applicable
- Strengthen the participatory elements in the process
- Develop & review combinations of CBA; MCDMs
- Research: what makes indicators and methods accepted and used by decision makers and the public in reality
- Build an institutional basis for continued work for structured exchanges between researchers and practitioners
- Invent – and critique - ‘eye opening’ ways to represent transport and environmental impacts



# Transport Heaven & Hell

Ranking	Combined urban passenger transport		Private transport		Public transport	
	↓ City	Weighted score ↓	↓ City	Weighted score ↓	↓ City	Weighted score ↓
1	Tokyo	86	Dakar	58	Tokyo	67
2	Hong Kong	71	Tehran	52	Berne	47
3	Berne/Dakar	61	Ho Chi Minh City	51	Mumbai	46
4	Osaka	58	Shanghai	46	Osaka	45
5	Mumbai	46	Guangzhou	42	Hong Kong	44
6	Zurich/Shanghai	43	Hong Kong	40	Zurich/Prague	41
7	Hamburg/Prague	41	Cracow	36	Munich	35
8	Munich	39	Brisbane	34	Budapest	32
9	Cracow	36	Bogota	31	Dakar	22
10	Tehran/Bogota	35	Harare/Hamburg	30	Hamburg	21

Overall world rankings

Source: Kenworthy 2008



THANK YOU!