# TC1.1 Road System Economics

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# Monetised Values for Socio/Environmental Impacts

## Introduction - Key Aims:-

- Identify quantification methods used around the World;

- Identify best practises and transferability to developing countries or countries in transition;

# Monetised Values for Socio/Environmental Impacts

## Background:-

- Further developments arising from Committee C9 – 2003 Congress;

- Developing monetary values for inclusion in road project evaluation;

# Monetised Values for Socio/Environmental Impacts

## Methodology Adopted:-

- International survey;

- Review of current practise;

- Overview of HEATCO study;

- Comparison with output from Japan, Australasia and the Americas

- Scope for transferability

# Monetised Values for Socio/Environmental Impacts

## Review of Current Practise:-

- 46 Countries selected for survey;
- 18 previously responding to C9;
- 8 represented on TC1.1;
- 19 from Confederation of Latin American/Iberian Peninsula;
- 1 (Ireland) offered unsolicited response;

**(42% of PIARC member states)**

# Monetised Values for Socio/Environmental Impacts

**11 impacts selected;**

| | |
|---|---|
| Visual; | Noise; |
| Air Quality; | Water Quality; |
| Ecological/Biodiversity; | |
| Geological; | Agriculture and soils; |
| Cultural Heritage; | Accessibility; |
| Health; | Economic/Land use; |

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**Responses received:-**

- Only 13 responses received (28%);

- 9 issue formal guidance on appraisal at the national level

- 10 use a fixed period of appraisal;

- Fixed period varies from a minimum of 20 years to a maximum of 60 years;

# Monetised Values for Socio/Environmental Impacts

**Responses received:-**

- Noise impacts (7) and Air Quality (8) are the most commonly used for monetisation;

- 8 take account of socio/environmental impacts by at least 20% when making decisions;

- 5 take account by at least 30%;

# Monetised Values for Socio/Environmental Impacts

**Initial considerations:-**

*Monetised values tend to be concentrated to the developed European countries which have been member states of the European Community for a number of years*

# Monetised Values for Socio/Environmental Impacts

**Overview of HEATCO study:-**

- covers 25 countries within Europe;

- a rich source of information on use of monetised values across Europe;

- use appears to be focussed on 3 key impacts:-

  noise, air quality, climate change

# Monetised Values for Socio/Environmental Impacts

## Overview of HEATCO study:-

- Range for greenhouse gas emissions ($CO_2$ equivalents) varies between:-

  23.20€/t (damage costs) and

  194€/t (avoidance costs);

- Range for pollutants ($NO_x$ equivalents) varies between:-

  294€/t and 4,631€/t

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## Overview of HEATCO study:-

- Range for noise impacts at the 70db(A) level range between:-

  36.4€/db(A) and 492€/db(A)

  per person exposed

# Monetised Values for Socio/Environmental Impacts

**Overview of HEATCO study:-**

- Values adopted are wide ranging;

- No identifiable relationship to relative wealth of country;

- Need for harmonisation is recognised;

# Monetised Values for Socio/Environmental Impacts

**Comparisons between Europe and Japan, Australasia and the Americas:-**

- Values identified tend to be at the lower end of the European range;

- Little or no consistency with European countries that have developed monetised values;

# Monetised Values for Socio/Environmental Impacts

## Transferability?

- Road system improvements may, arguably, be a cost effective way of improving GDP by encouraging economic development;

- High income countries have recognised the socio/environmental impacts/'costs' of such well developed systems;

- Developing countries and countries in transition can learn from these experiences;

- Relatively simple approximations or proxies ought to be identified;

# Monetised Values for Socio/Environmental Impacts

## Summary of Conclusions:-

- Noise and air quality (local and global) are the most commonly developed monetised values adopted;

- There is little consistency in the methodological approach and values developed by individual countries in isolation;

# Monetised Values for Socio/Environmental Impacts

## Recommendations:-

- Better harmonisation of monetised values is required;

- The need for such values in countries with economies in transition or developing requires to be established;

- A comprehensive evidence base is required;

# Monetised Values for Socio/Environmental Impacts

## Thank you for your attention

## DISCUSSION