

# LISBOA 2010 16th World Meeting

MAY 25/28



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# Software tool for Environmental, Economic and Social Assessment of Road Projects

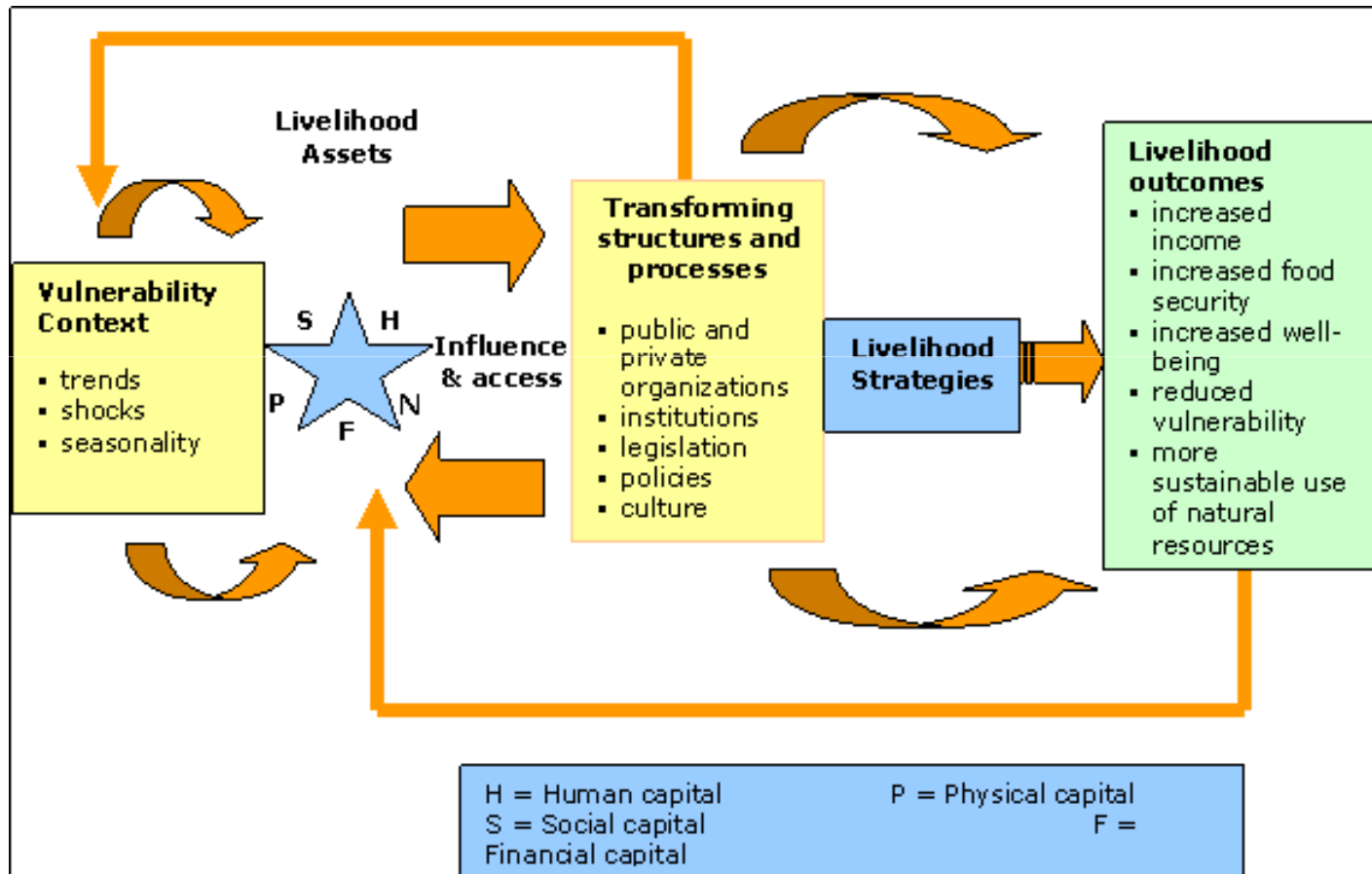
Konsta Sirvio, Sari Jusi



# BACKGROUND

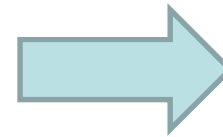
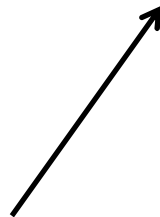
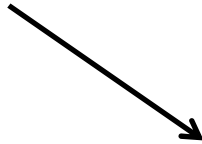
- Investment decisions are traditionally made in economic terms
- Long term assessment of infrastructure projects is often neglected
- A software tool (EESAR) is under development to incorporate social and environmental aspects for decision-making and post-evaluation

# FRAMEWORK





# IMPACTS



**Economic  
impacts**

**Social  
impacts**

**Environmental  
impacts**

**Resources**



# ECONOMIC IMPACTS

1. Impacts for Vehicle Operating Costs (VOC)
2. Impacts for Travel Time Costs
3. Impacts for Accident Costs



# SOCIAL IMPACTS

1. Direct impacts
2. Impacts on the agricultural economy
3. Impacts on education and health
4. Impacts on poverty alleviation and gender aspects
5. Negative effects.

# ENVIRONMENTAL IMPACTS

1. Effects on air and water quality
2. Noise
3. Habitat destruction and fragmentation
4. Greenhouse gas emissions
5. Erosion at construction sites



# MEASUREMENT

Measurement of impacts is done mainly by interviews with several questionnaires:

1. Household / village surveys
2. Transportation cost surveys
3. Commodity price surveys
4. Environmental surveys



Sharing the road

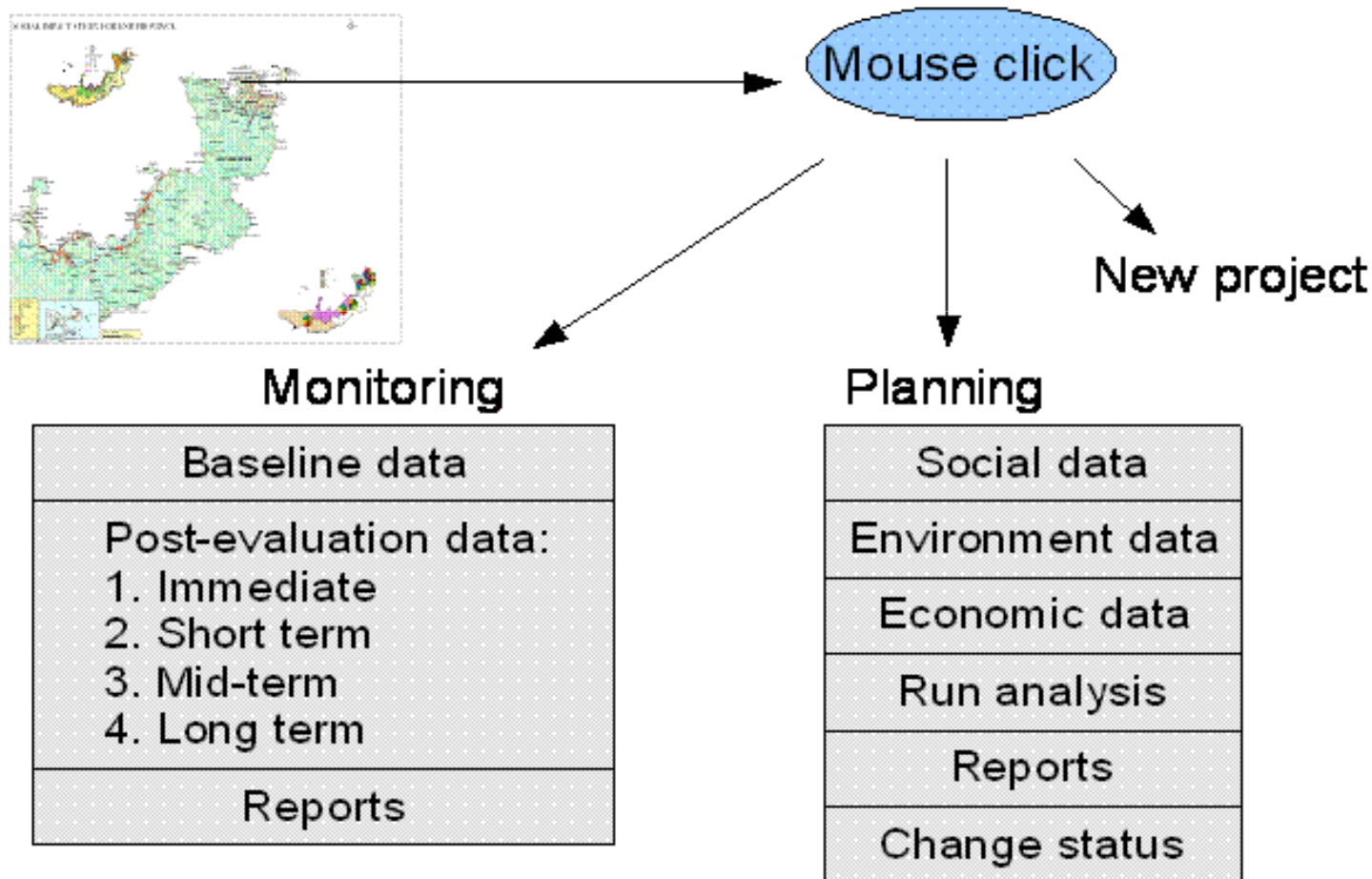
16th  
World Meeting  
International Road Federation

# INDICATORS

Example indicators calculated from the survey results:

- Average trip duration to market, town etc.
- Transport & commodity costs
- Market income
- Product loss due to poor roads
- Increase in emissions due to traffic
- Damaged land area

# SYSTEM DESIGN

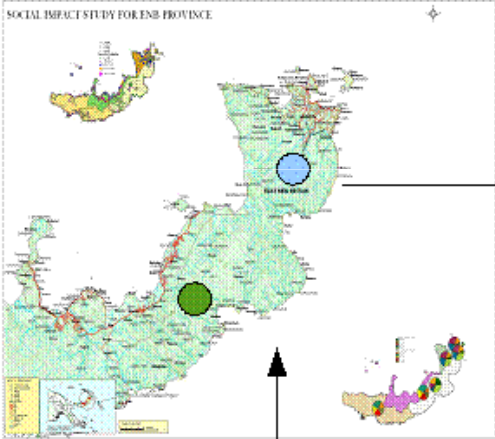


# SYSTEM DESIGN



Main buttons

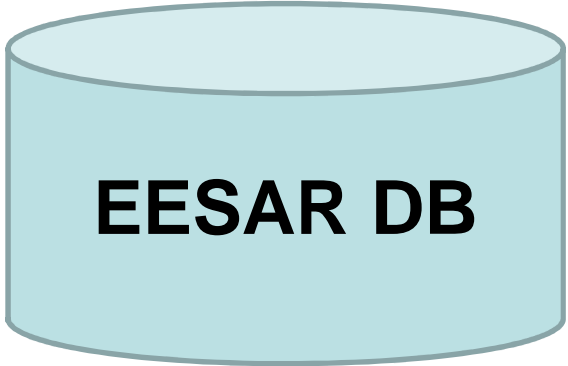
- Planning phase
- Rejected projects
- Monitoring phase



Map interface

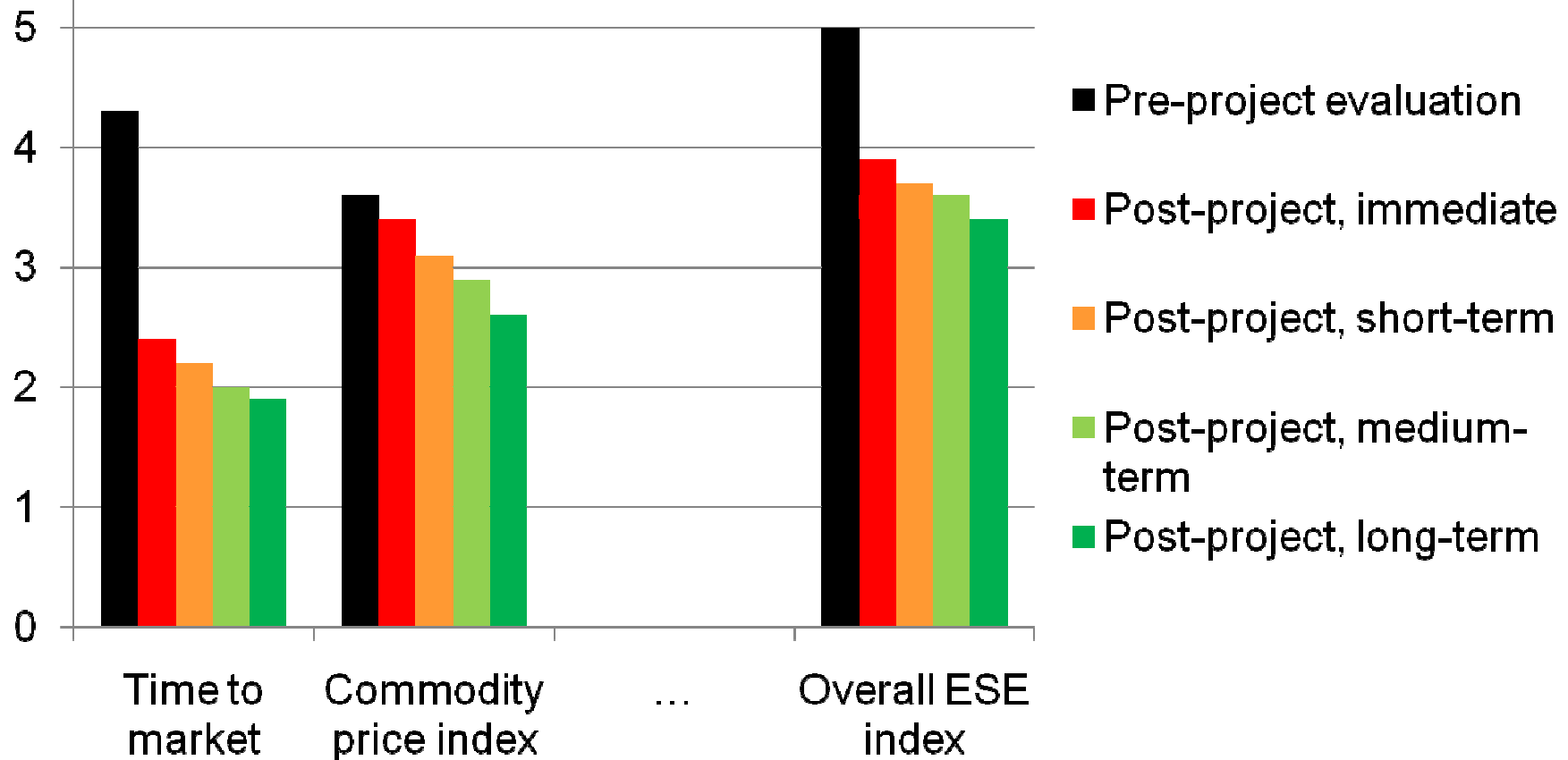
Mouse click

The data is stored in the database and restored from there





# REPORTS



**For an individual road project**



# FUTURE WORK

- Finalisation of the software
- Indicator selection for the pilot project
- Pilot testing with Papua New Guinean projects and survey data