Recommendations with respect to the Prestudy «Research development in infrastructure maintenance”

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General Recommendations

• We suggest that there be a focus on the maintenance of existing infrastructure with consideration of future needs.

• We support the 6 proposed research areas, but believe that “sustainability” and “digitisation” should be integrated into the first four in a call for proposals. The wording of the call should, however, make it clear that appropriate consideration is to be given to sustainability and digitisation.

• We encourage that applicants demonstrate that the research being done in each of the areas fits together, i.e. they are part of a single system.

• We encourage that applicants
  • use both an interdisciplinary and a transdisciplinary research approach, and
  • integrate sustainability (i.e. economic, social and environmental aspects in both the short and long term) consistently throughout their proposals.
Recommended research questions for the area “Knowledge of the condition of existing infrastructure”

• What information is required to make decisions with respect to the maintenance of infrastructure?

• How can we obtain the information we need, including optimal uses of new technologies?

• How can we help managers with limited capabilities obtain the information they need, e.g. new organisation forms, business models?

• How can we connect the condition of infrastructure to the performance of infrastructure?
Recommended research questions for the area “Forecasting and decision support”

In order to plan maintenance,

• Which objectives and constraints need to be considered?

• What are appropriate ways of forecasting the future of infrastructure and the system in which it is embedded?

• How should one model infrastructure systems, taking into consideration current and future infrastructure performance and required resources?

• How does one determine optimal strategies, including consideration of uncertain futures and aspects of flexibility and resilience?

• How can we exploit new technologies, at what cost, with which information requirements?

• What are the costs and benefits of grouping interventions, i.e. within sectors and across sectors?
Recommended research questions for the area “Financial instruments, ownership and business models”

In terms of maintaining infrastructure,

• What are the financing possibilities in the future? including
  • specification of incentives and barriers to efficiency improvements, and
  • ensuring that adequate resources are available

• What are the effects of different forms of ownership?

• How can the public and private sectors be optimally involved?
Recommended research questions for the area “Organisation and processes”

In terms of maintaining infrastructure,

• What are the advantages and disadvantages of organisation forms, structures and processes?
• What processes encourage coordination between organisations?
• Which incentive structures are the most effective?
• What are the most appropriate ways to measure the performance of the organisation(s)?
• How do organisations need to be changed to exploit technological developments, e.g. digitisation, and how should this change be managed?