



Climate change adaptation: Overcoming Implementation Barriers

Deltares

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A TECHNOLOGY ALLIANCE

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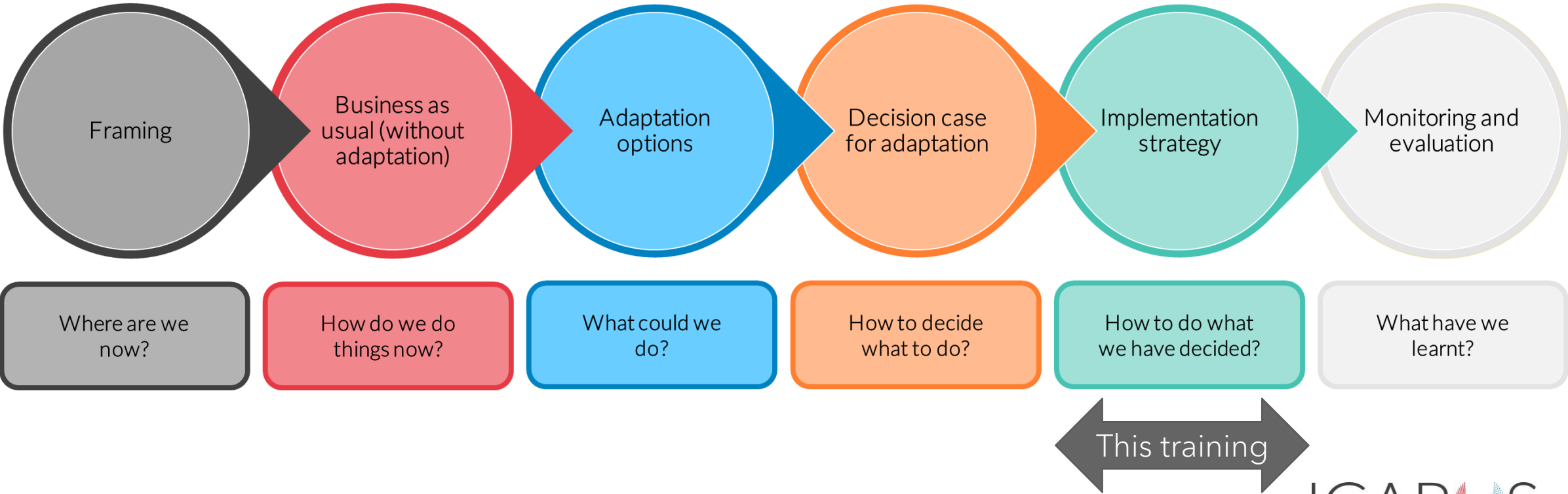
CEDR
Conférence Européenne
des Directeurs des Routes
Conference of European
Directors of Roads

ICARUS



The broader ICARUS picture

Main ICARUS objective: Improve the uptake of Climate change Adaptation in the decision-making processes of Road aUthoritieS





Key learning points

- Barriers to Implementation of Climate Change Adaptation
 - *Proposed Solutions to Overcome Barriers*
- How to effectively communicate implementation process
 - *Who to communicate with and what message*

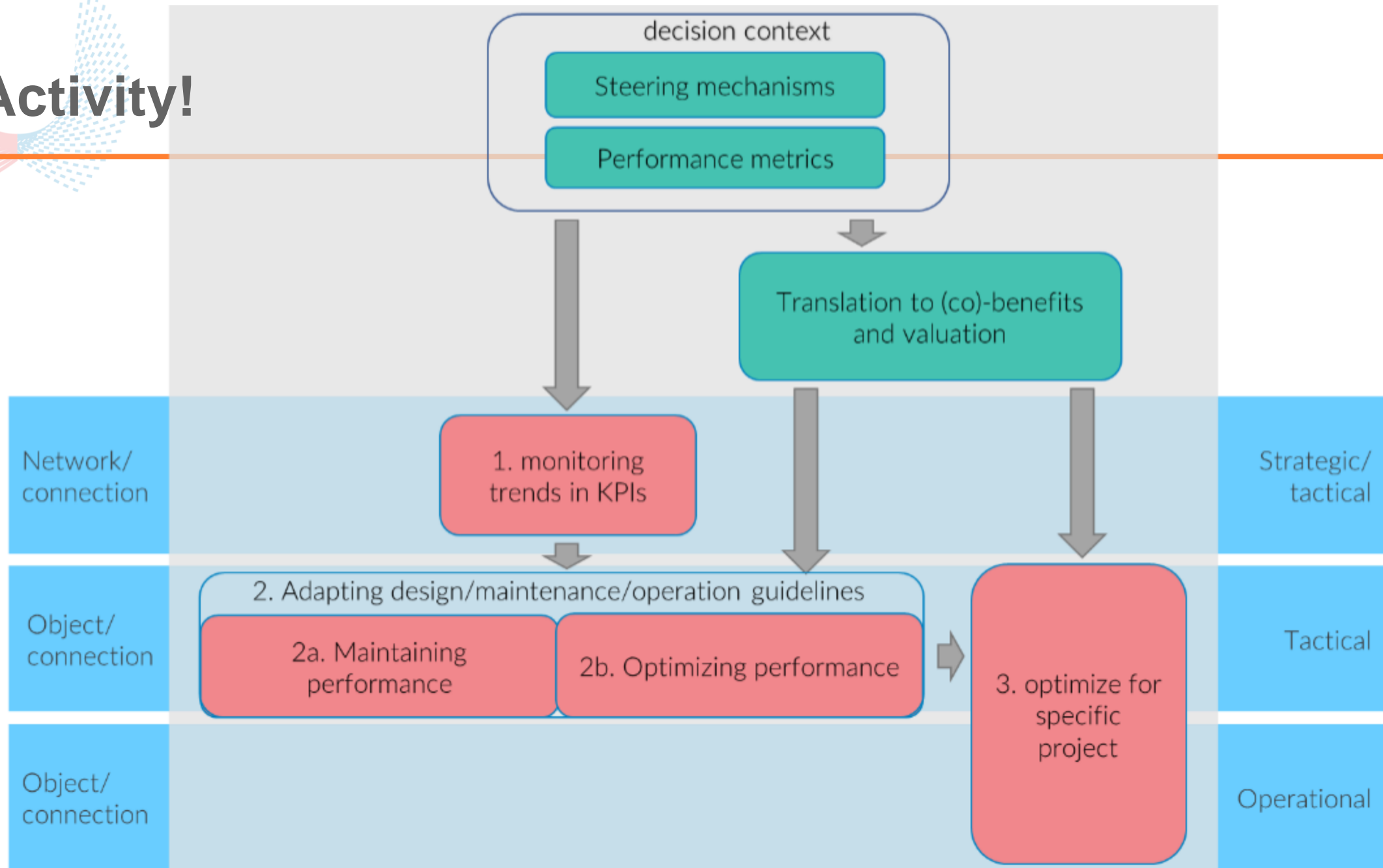


Activity!

- For each of the adaptation options you have selected in our earlier session, think about the implementation process for them within your organisation.
- *What barriers might you have to overcome? Are these different for once-off projects and ongoing maintenance?*
- *If you have selected a Nature-based Solution, are there barriers that are specific to those?*
- *Can you think of solutions to overcome these barriers?*

Work individually initially, then pair and share, then share with group.

Activity!





Barriers to Adaptation Implementation - D2.3

- **Lack of Information** consisting of lack of information on climate impact drivers, climate projections, data on infrastructure, adaptation options, no KPIs to monitor benefits of adaptation etc.;
- **Lack of Resources** consisting of financial as well as personnel (expertise and time); and
- **Lack of Incentives on which decision-makers act (Organisational)**, such as co-benefits, lack of awareness at decision-making levels, lack of corporate understanding, or organisational culture that does not support change.



Barriers and Solutions to Adaptation Implementation

Barrier	Solution
Lack of Information	
Lack of knowledge / information on climate Change Adaptation	Review national climate change guidelines if they exist. Consider service life of the asset.
Lack of Asset Information	Increase asset monitoring to collect additional useful data.
Lack of information on system network performance	Implement monitoring campaigns using; drones, satellites, or some of more agile approaches for collecting data (like google maps, mobile apps and Internet of things.
Lack of KPI information	Use asset monitoring data and traffic data to analyse KPIs on Safety, Asset Condition etc. Keep asset inspection and maintenance data up to date to assist with this.
Lack of Resources	
Lack of Skilled Personnel / Financial Resources	See guidance in ICARUS deliverables to assist in building business case for adaptation implementation.
Lack of funding	Emerging Technologies can help reduce costs of manhours.
Organisational	
Lack of engagement / awareness	Build awareness within organisation through presentations to staff at strategic level.
Lack of planning	Data collected on climate hazards and climate performance can help the long-term planning.
Lack of buy-in from other stakeholders	Involve other stakeholders e.g. landowners or members of the community at an early stage to ensure buy-in to projects.
Challenges in Procurement Management	Adapt regulations, include climate change adaptation in tenders, include specific detail on nature-based solutions.

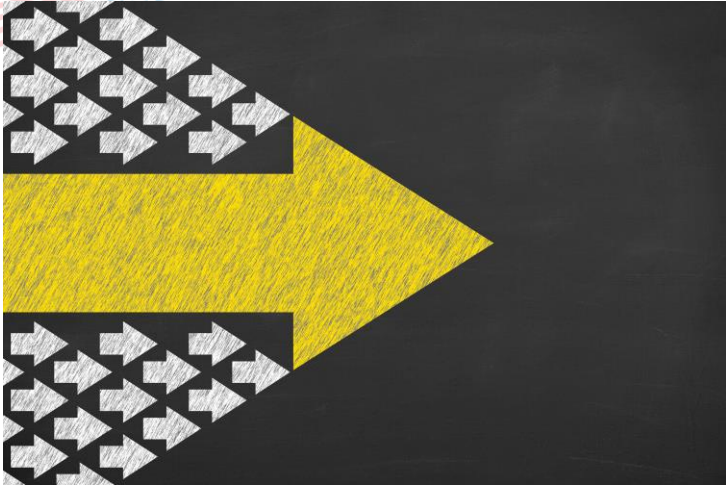


Communication

1. For the adaptation option you've chosen, think about the communication requirements:
 - *Who would be the internal stakeholders?*
 - *What type of message would be required at the:*
 - i. Strategic
 - ii. Tactical
 - iii. Operational
2. External Communication – who are the stakeholders? what communication is needed?

Work individually initially, then pair and share, then share with group.

Communication



Strategic:

- High-level, on long-term impact of climate change on the network.
- Adaptation options available. How they align with organisational goals.
- There are means to develop the business case.



Tactical:

- Greater detail required on how this would be delivered in practice.
- Information on the business case and implementation process.
- Adaptation options and case studies of successful delivery.
- Many different functions at the tactical level, not everything relevant to all.

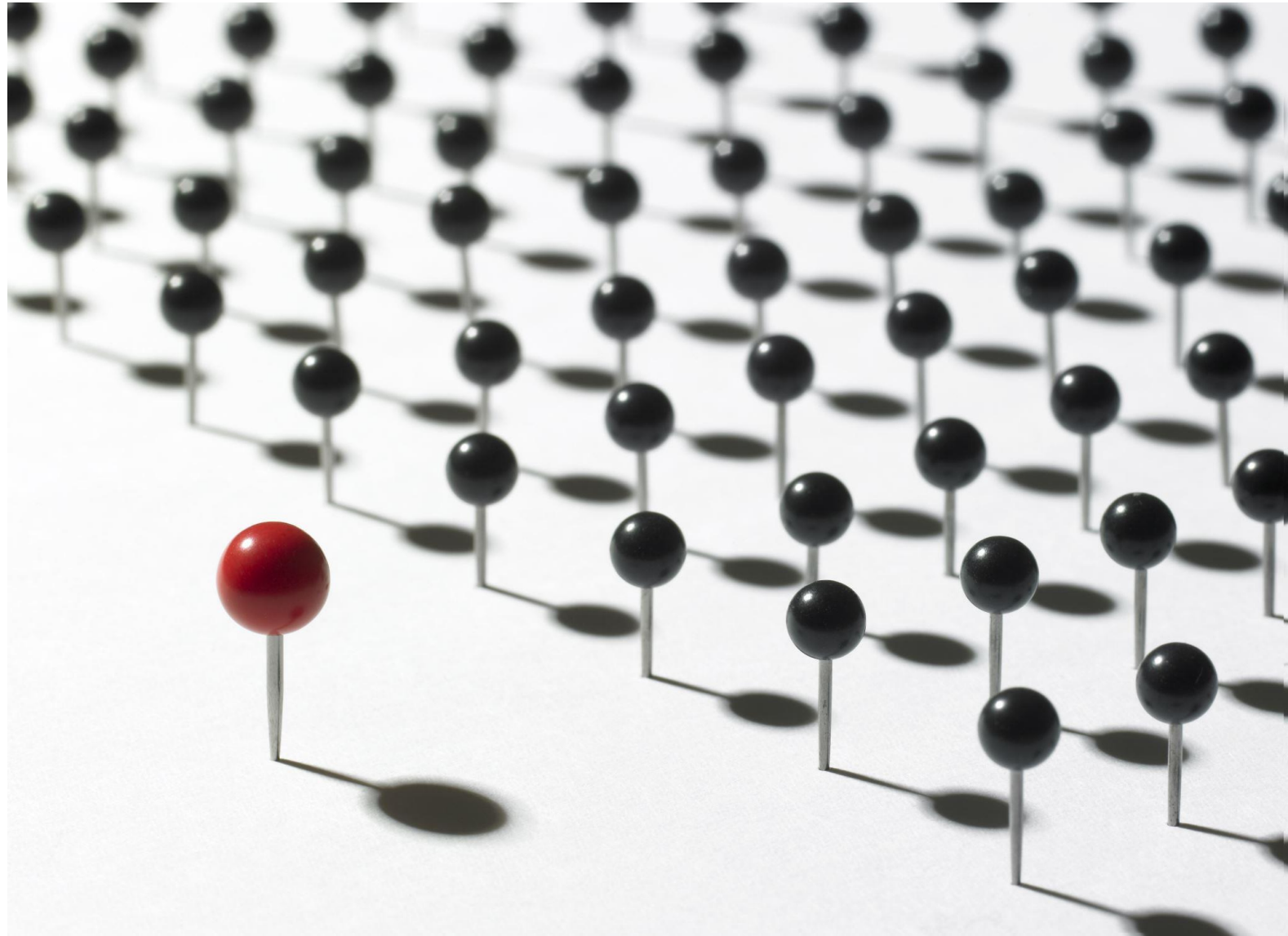


Operational:

- Information on practical examples of implementation and guidelines from ICARUS and elsewhere.
 - Case studies of previous implementation.
- The messages will depend on the maturity of the organisations' experience in climate change.

External Communication

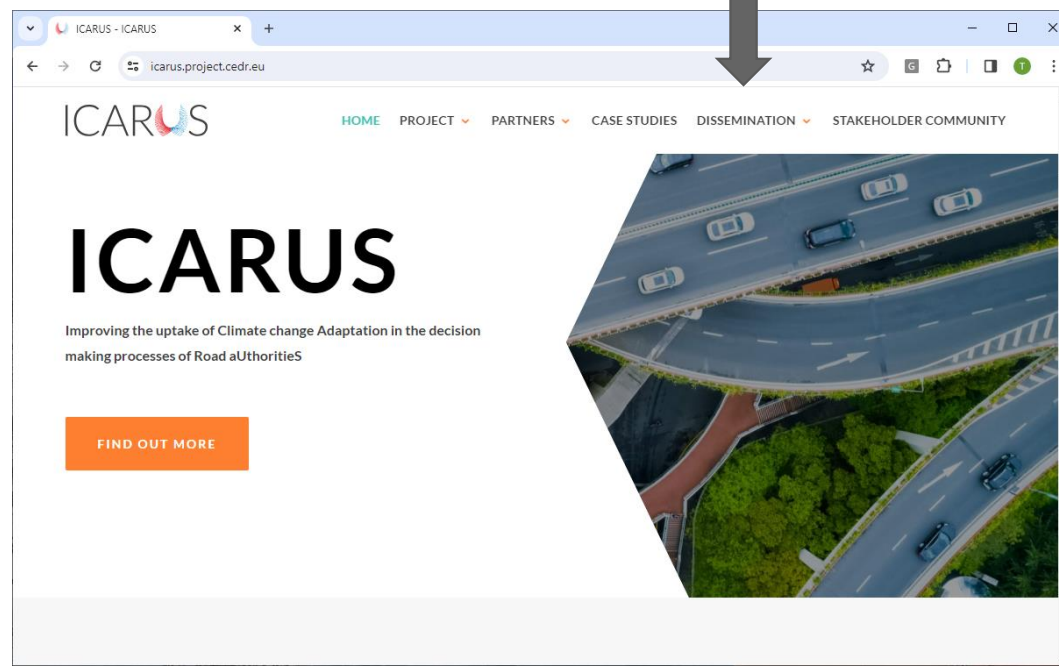
- Landowners and agencies
 - *Design of NbS and off-site solutions.*
- Consultants
 - *Explain what you expect in terms of designs, inc NbS.*
- Contractors
 - *Design guidelines.*
 - *Supervise installation of NbS and new solutions.*
- Operational
 - *Maintenance regimes, particularly for NbS and hybrid solutions.*



Thank you!

- Thank you for watching our video on Climate Change Adaptation!
- If you would like more information about our project, please go to our project website by scanning the QR code or going to the following link:

<https://icarus.project.cedr.eu/>



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