Adapting to new climate in transport sector

Operationalising adaptation Practical measures
NDF is the only joint Nordic finance institution focused exclusively on climate change and development in low income countries.
NDF Transport Adaptation Projects: Regional Distribution
NDF Transport Adaptation Projects: Regional Distribution

1. Cambodia: Adaptation Approaches for the Transport Sector Project
2. Cambodia: Rural Roads Improvement Project II
3. Lao PDR: National Road 13 North - Lao PDR
4. Lao PDR: Road Sector Project II
5. Vietnam: Integrating Climate Change Adaptation to Transport
6. Senegal: Integrating Climate Change Adaptation to Transport
7. Zambia: Developing Climate Resilient Infrastructure Standards
8. Mozambique: Developing Capacity for a Climate Resilient Road Sector
9. Nicaragua: Developing Adaptive Capacity for Climate Change
10. Rwanda: Developing Capacity for Climate-Resilient Road Transport Infrastructure
Milestones and National Action

Economics of climate change (Stern Report 2006):
• Need for adaptation policy
• Benefits outweigh costs
• Time to act now

UK Road Agency Transport Adaptation Strategy 2009
Milestones and National Action

New Zealand 2010
Norway 2010
France 2013
Denmark 2013
+ USA, Canada, Japan
Selected tools

Norway XGEO tool: Real-time monitoring and forecasting of floods, landslides and avalanches

• Developed by National Public Roads Administration (NPRA), Norwegian Water Resources and Energy Directorate (NVE) in collaboration with the National Rail Administration (J BV) and meteorological services.

• Online mapping tool combines historical data, weather forecast, ground and road data.
Precipitation Monday

Forecast
Generated 03.12.2018 at 13:21
Based on MEPS prognosis starting at 06 UTC

Precipitation previous 24 hours until at 08 a.m. on dec. 4, 2018

Map shows amount of precipitation estimated by the Snow map model.

Updated around 5, 8, 9, 11, 17, 19, 21, 23 Norwegian standard time.

Data from 01.01.1957 until tomorrow

Kilde: www.xgeo.no
XGEO – Rail network

Rain and snow melt Monday

Forecast
Generated 03.12.2018 at 12:14
Based on MEPS prognosis starting at 06 UTC
Sum of rain and snow melt
previous 24 hours until at 08 a.m. on des. 4, 2018
The map shows water supply from rain and snow melt estimated by the Snow map model.
Updated around 0, 6, 8, 9, 12, 18, 19 and 21 Norwegian standard time.

Data owner: Norwegian Water Resources and Energy Directorate

Kilde: www.xgeo.no
Selected tools

**Denmark Blue Spot tool:** Mapping tool to identify areas in national road network that risk being flooded. Developed by State Roads Administration. Further developed & used in Sweden and The Netherlands.

**Spain The AdapteCCa Platform:** Online platform with data on impacts, vulnerability and adaptation to climate change. Used by planners, researcher, private and public stakeholders. Strong emphasis on transport.
Milestones and International Action

**UNECE:** *Climate Change Impacts and Adaptation for International Networks, 2014*

**EU:** *Adaptation of Transport to Climate Change in Europe: Challenges and options across transport modes and stakeholders, 2014*
Milestones and International Action

World Road Association/ PIARC: *International Climate Change Adaptation Framework for Road Infrastructure, 2015*

- Scope, Variables, Risks and Data
- Assess & prioritise risks
- Adaptation Responses and Strategies
- Findings into decision-making
Multilateral Development Banks

- Climate Proofing Road Investment Projects
- Project Screening and Scoping
- Impact Assessment
- Vulnerability Assessment
- Adaptation Assessment
- Implementation Arrangements
- Monitoring and Evaluation

Asian Development Bank 2011
Multilateral Development Banks

Political, economic, and developmental challenges:

a) Objectives and scope of the prioritization process.

b) Governance context and institutional arrangements.

c) Collation of data, focusing on identifying and bringing together existing data, and the creation of new data to fill the data gaps.

d) Evaluation of criticality.

e) Assessment of risk/exposure from climate-related hazards.

f) Informing decision making.

World Bank 2017
Multilateral Development Banks

- Develop the AM Policy
- Define levels of service and performance
- Forecast future demand
- Understand the asset base
- Assess asset condition
- Identify asset and business risks.

World Bank 2017
ISO 14090 ‘Adaptation to climate change’

- Covers ANY Organization
- Applicable at ANY stage of adaptation
- Permits CHOICE of e.g. assessments methods for climate change impacts
- Flexible – approach is standardized BUT…
- Enables tailored solutions, not ‘one size fits all’
- Strong on Capacity
- Strong on Leadership and Commitment
ISO 14090 – What is it?

ISO 14090

Scope (coverage)
Principles, requirements, guidelines
Definitions
Pre planning
Interested Parties
Capacity
Adaptation Planning
The Plan
Implementation
Monitoring and Evaluation
Systems thinking
Decision making
Communication
Impacts
Risk Assessment
Vulnerability Assessment
ISO 14090 – A Framework

• ISO 14090 Adaptation to climate change — Principles, requirements and guidelines
• ISO 14090 High-Level Standard
• Drafted in ‘broad terms’ so:
  ✓ Permits ‘subservient’ Adaptation Standards to be drafted in more detail
  ✓ Choice, flexibility: determining what is important is up to the user
  ✓ Guidance on tools, adaptive capacity, systems thinking given – not detail!
  ✓ Enables tailored solutions, not ‘one size fits all’
Thank you!

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