
Comparison of Winter Maintenance Requirements in Estonia, Latvia and Lithuania

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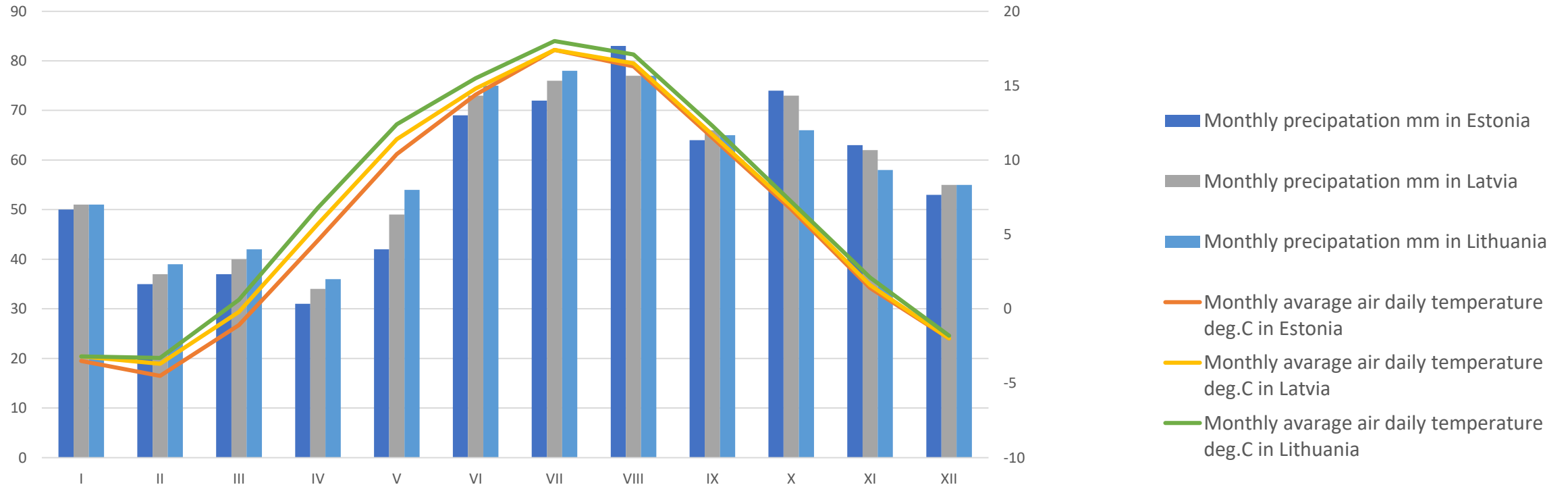
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Background



Climate

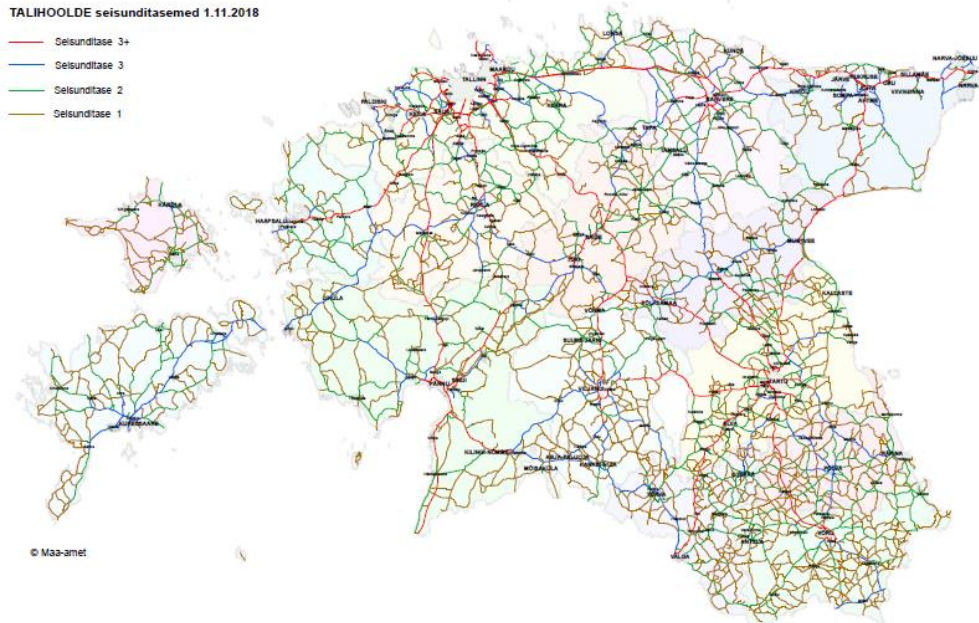


Maintenance Organization

- Common contracts for summer and winter maintenance;
- Responsibility for the activities lays on the contractors.
- Assignment of road maintenance contracts is different in every country;
- No special winter maintenance period in Estonia;
- Latvia's winter maintenance season: 1st Nov - 31st March;
- Lithuania's winter maintenance season: 15th Oct- 15th April.

Estonian Maintenance Organization

- Contracts awarded in open tender;
- 17 contract areas;
- 9 contractors;
- Contracts are performance-based;
- Customer is Estonian Road Administration.



Latvian Maintenance Organization

VALSTS GALVENO UN REĢIONĀLO AUTOCEĻU
SHĒMA AR UZTURĒŠANAS KLASĒM
2017./2018.GADA ZIEMĀ



- Contract awarded to state company «Latvijas autoceļu uzturētājs» by law;
- Contract is unit price based;
- Trilateral contract;
- Customer is the Ministry of Transport,
- Road network manager is State Stock Joint Company «Latvian State roads».
- LSR supervises the works executed by state owned contractor according to the contract with the Ministry.

Lithuanian Maintenance Organisation



- Contract awarded to state company «Kelių priežiūra»;
- Contract is unit price based;
- Customer is the Lithuanian Road Administration;
- Supervision carried out by independent supervisors according to the contract with the LRA.

Standards and Rules

- Estonia has four maintenance levels:
 - Level 3+, Level 3, Level 2; Level 1;
- Latvia has five maintenance levels:
 - Class A, Class A1, Class B, Class C and Class D;
- Lithuania has seven maintenance levels:
 - 1st and 2nd level of main roads;
 - 1st, 2nd and 3rd level of national roads;
 - 1st, 2nd and 3rd level of regional roads;

Country	High Standard	Medium Standard	Low Standard
Estonia	Level 3 and 3+	Level 2	Level 1
Latvia	Level A and A1	Level B	Level C and D
Lithuania	Level M1;M2; K1	Level K2; K3;R1;R2	Level R3
Carriageway	Ice and snow free	Icy and snowy	Icy and snowy
Anti-skidding	As soon as possible	Long reaction time	Only spots

Lowest Service Standard

Country	Estonia	Latvia	Lithuania
Service level and AADT	Level 1 (<250)	Class C (100 -499) Class D (<100)	Level R3 (gravel roads)
Time for snow cleaning	24 hours after snowfall	Class C 18 hours after snowfall Class D occasionally	During snowfall if snow depth exceeds > 20 cm
Permitted snow depth	10 cm (loose snow), 5 cm (slush)	Class C 10 cm (20 cm for snow drifts) Class D no requirements	Normal situation 10 cm loose snow
Time for de-icing	12 hours	No requirements	No requirements
Road friction coefficient	0.20 (0.25 in unsafe spots)	No requirements, spreading and grading of unsafe spots	No requirements, spreading and grading of unsafe spots
Hours when requirements are	24 hours	6:00-18:00; in other time no	9:00-18:00, in other time no

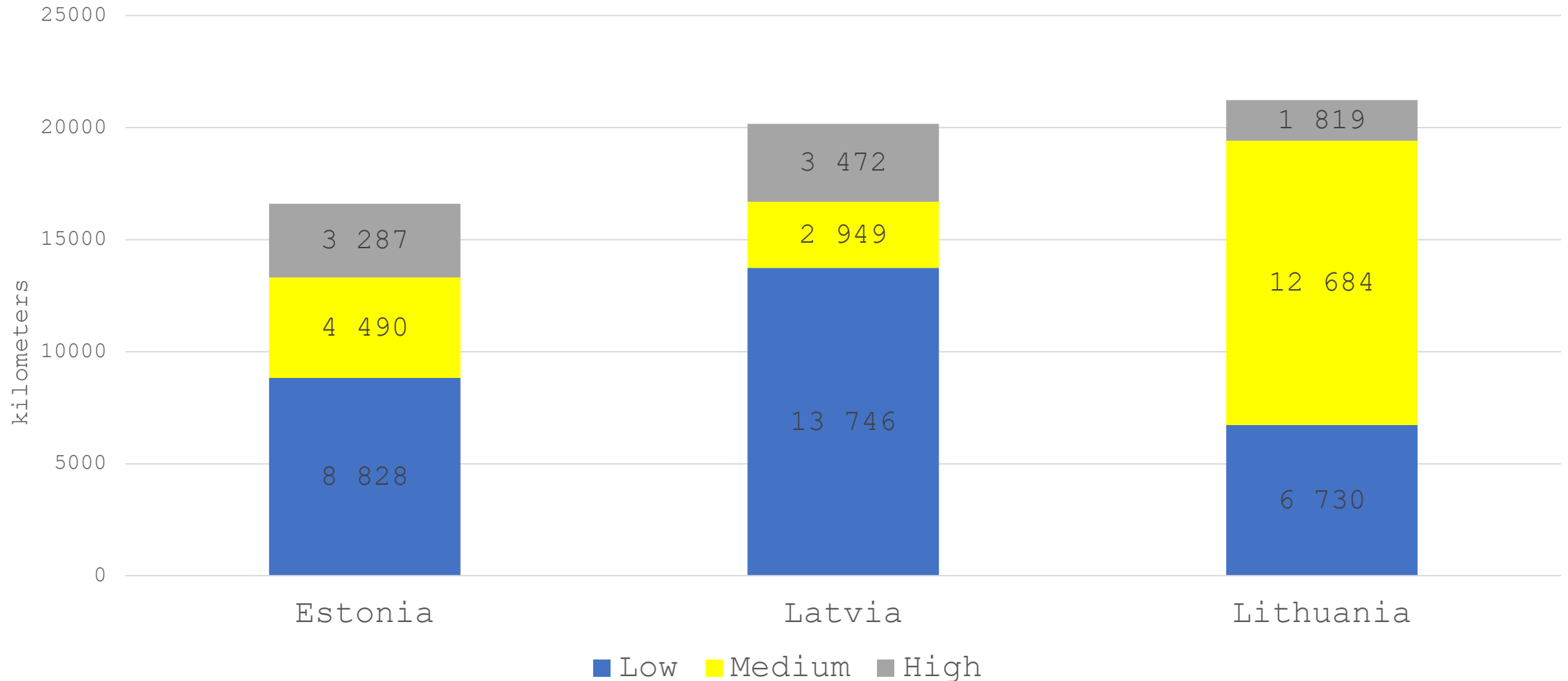
Medium Service Standard

Country	Estonia	Latvia	Lithuania
Service level and AADT	Level 2 (251 - 1000)	Class B (500 - 999)	Level K2 - R2 (asphalt roads <1000)
Time for snow cleaning	12 hours after snowfall	6 hours after snowfall	4-5 hours after snowfall
Permitted snow depth	8 cm (loose snow), 4 cm (slush)	4 cm loose snow, during snowfall (8 cm, 4 cm slush, 16 cm for snow drifts)	5-10 cm. Up to 0-5 cm of snow are allowed after snowfall
Time for de-icing	8 hours	6 hours	5 hours
Road friction coefficient	0.25	No requirements	No requirements
Hours when requirements are applied	7:00-21:00; in other time service level 1	6:00-18:00; in other time service class C	6:00-19:00; in other time no requirements

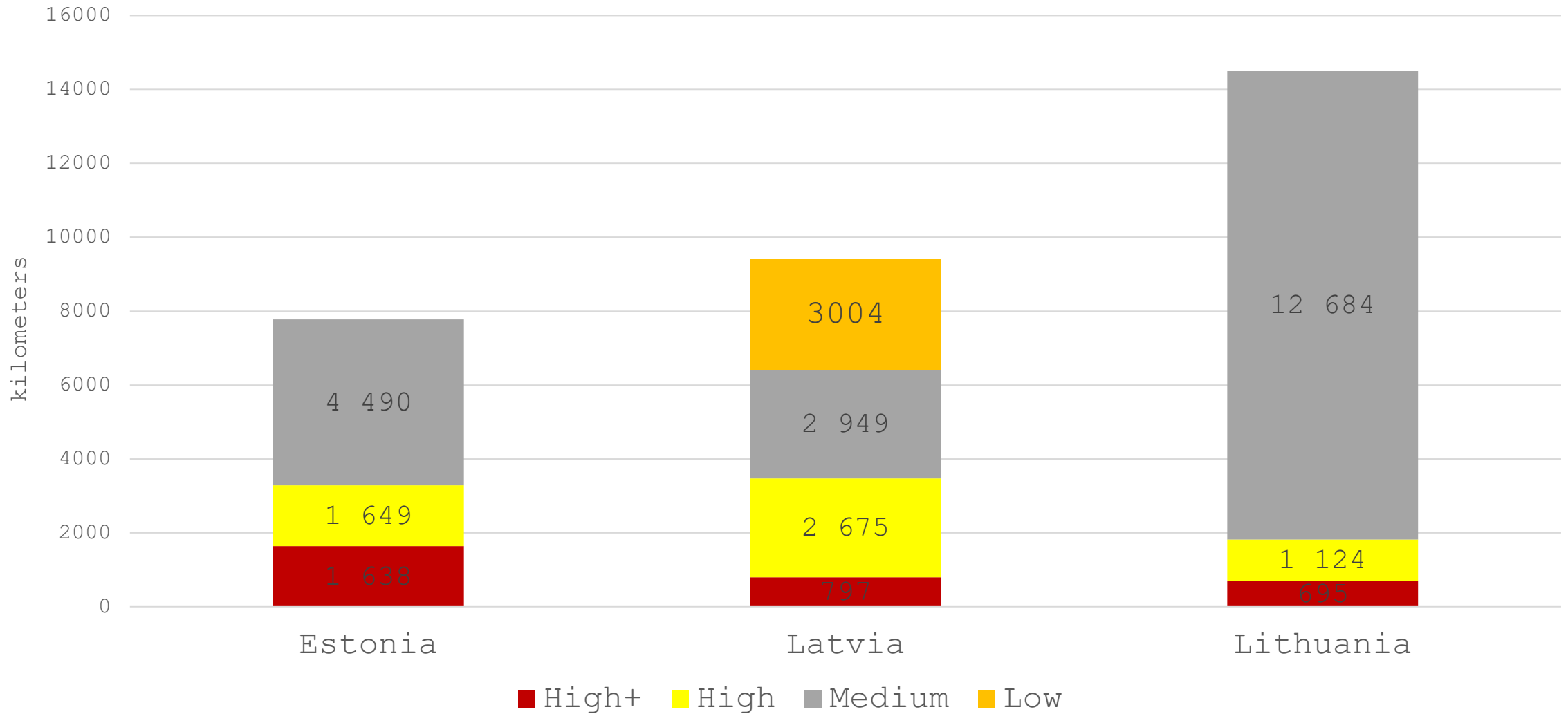
Highest Service Standard

Country	Estonia	Latvia	Lithuania
Service level and AADT	Level 3+ (>3000 on more important main roads), level 3 (>1000)	Class A (>5000), Class A1 (1000 - 5000)	Level M1 (≥ 10000), Level M2, K1, (1000 - 10000)
Time for snow cleaning after snowfall	Level 3+ 2 hours, level 3 5 hours	Class A 3 hours, Class A1 4 hours	Level M1 2 hours, Level M2, K1 3 hours
Permissible snow depth	Normally bare, during snowfall 4 cm loose snow, 2 cm slush	Normally bare, during snowfall 6 cm loose snow, 3 cm slush	Normally bare, during snowfall level M1 loose snow 4 cm and M2 7cm, compacted snow for both 1 cm
Time for de-icing	Preventive deicing, level L3+ 2 hours, level 3 4 hours	Preventive deicing on main roads, class A 3 hours, class A1 4 hours	Level M1 2 hours, Level M2, K1 3 hours
Road friction coefficient	0.3 in wheel tracks and 0.28 on other spots	No requirements	No requirements
Hours when	Level 3+ 5-23:00, on other time L3 Level 3 6:00 - 22:00 on	Class A (A1) 6:00 - 22:00 (20:00), preventive in other	Level M1 24 hours, M2, K1 04:00 - 22:00; in other

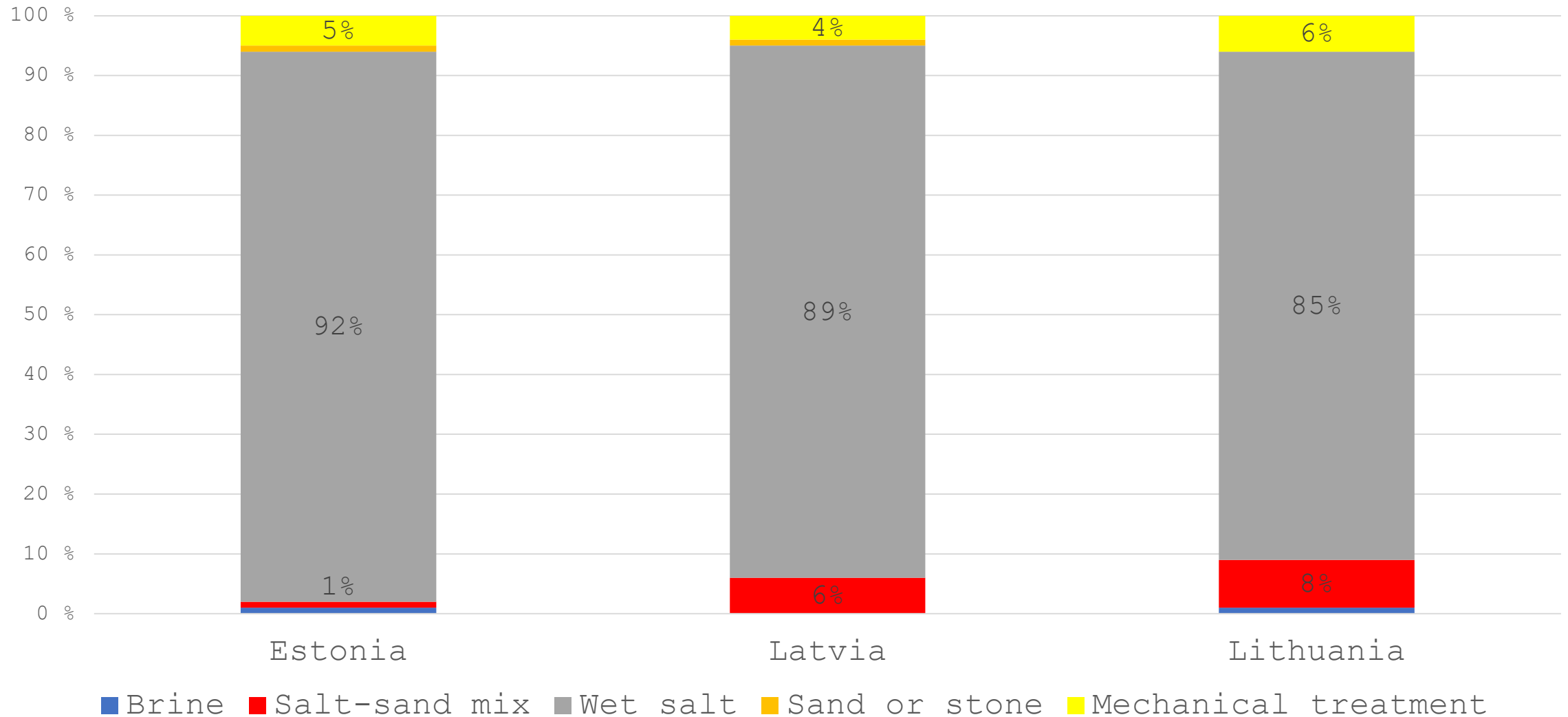
Roads of Different Maintenance Levels



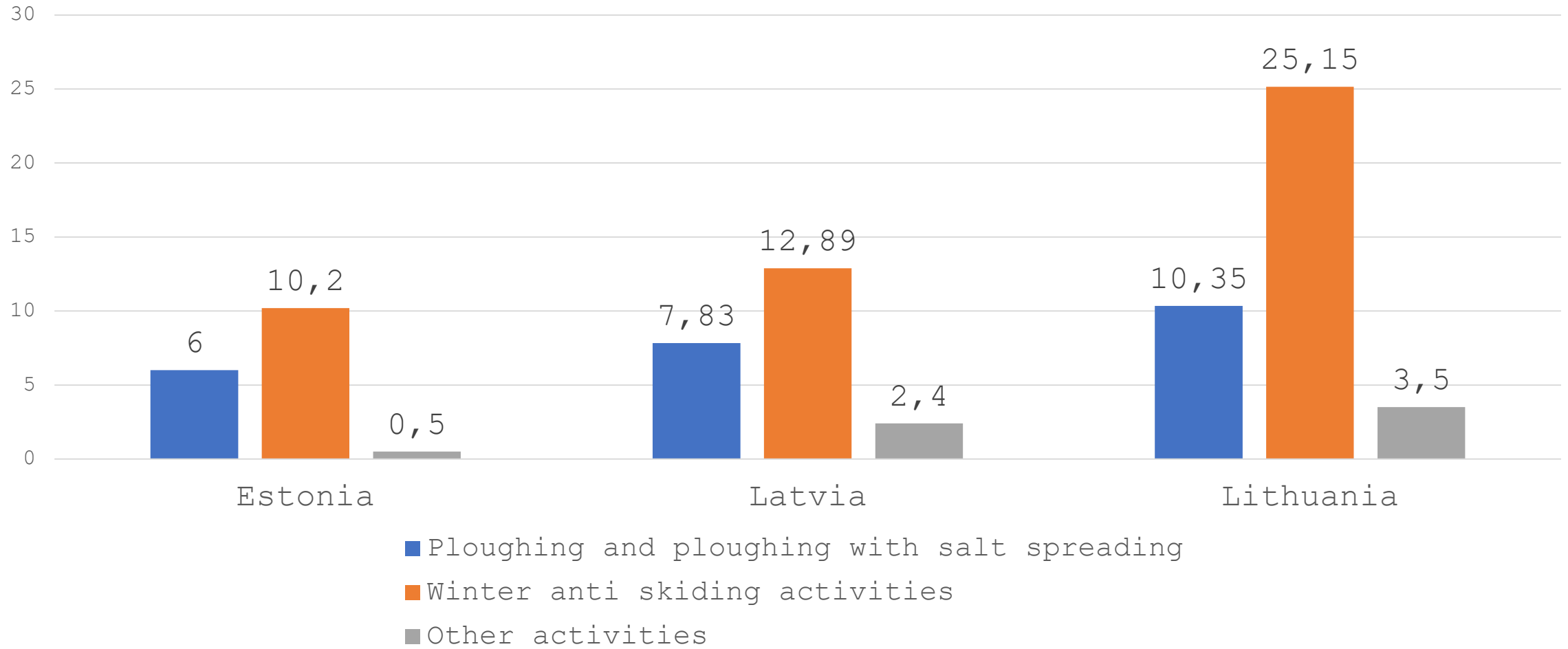
Length of Anti-Skidding Activities



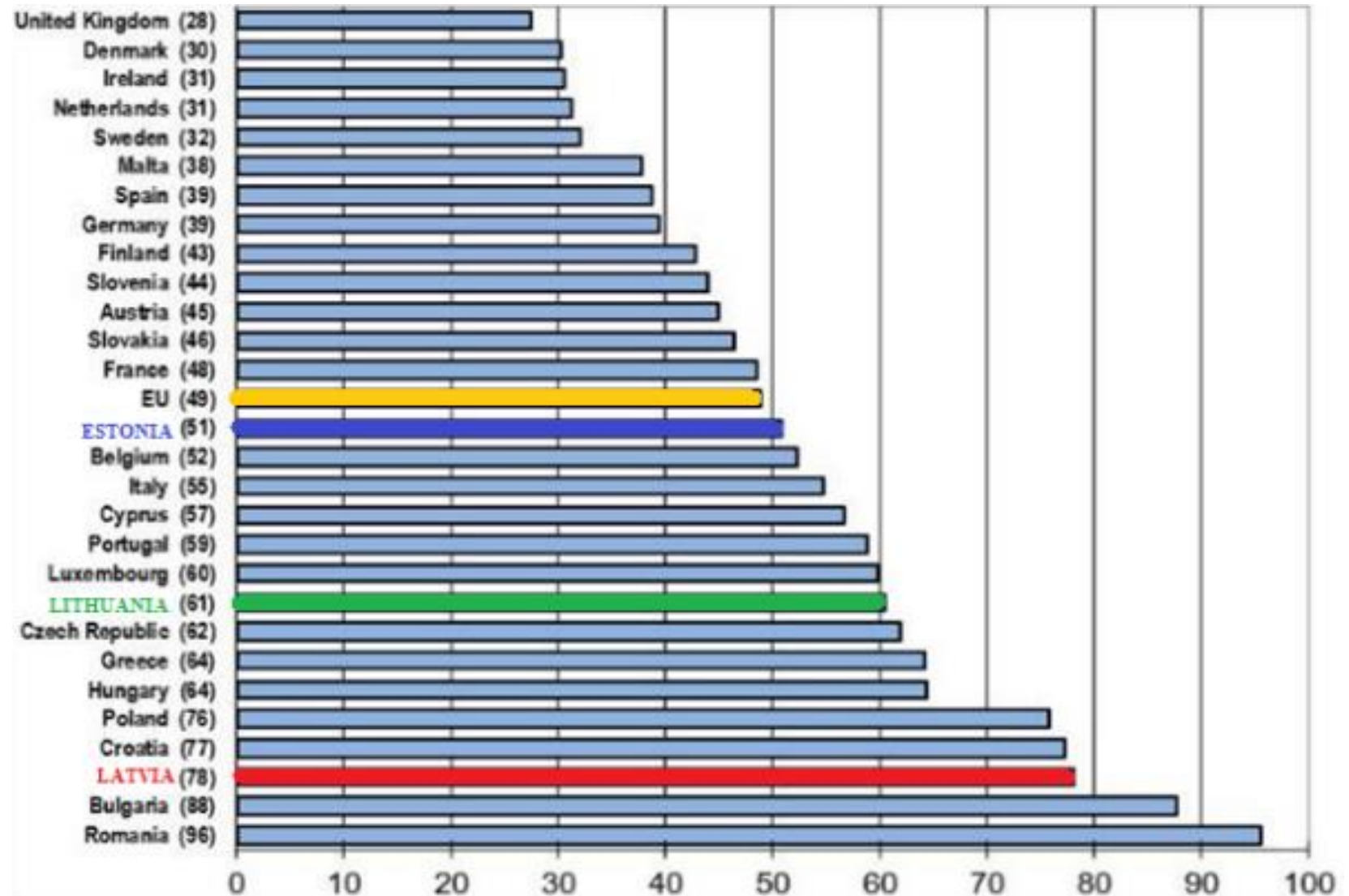
Anti-Skidding Technologies



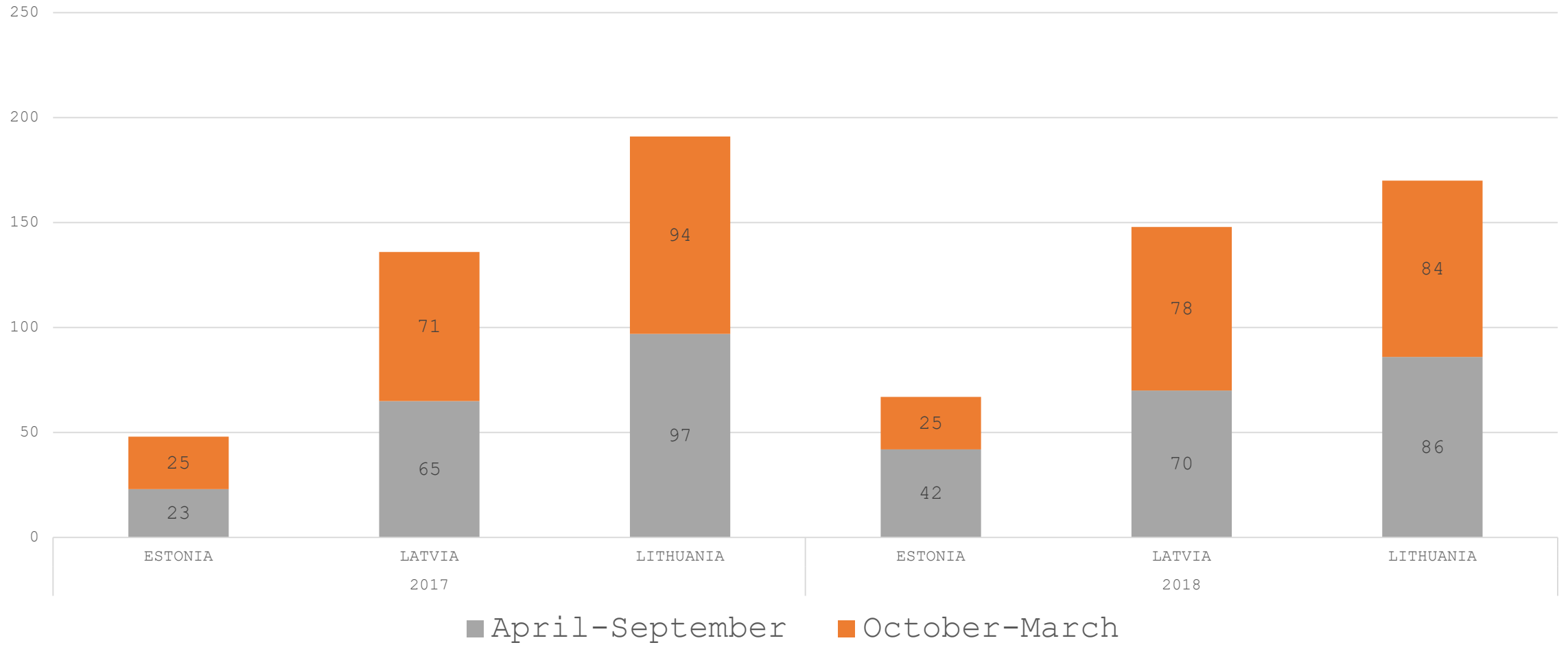
Winter Expenses in 2018, Mill. EUR



Fatalities per Million Inhabitants, 2018



Traffic Fatalities, Summer / Winter



Conclusions

- Requirements for winter road maintenance in the Baltic States are not contradictory, they are ideologically similar;
- Anti-skidding technologies are similar with small differences;
- Road maintenance in Estonia is allocated in open tenders;
- Expenses in Estonia are smaller than in the neighbor countries but the road safety is higher.

Find out more!



Call for papers starts:

April 2020;

Registration starts:

November

2020;

Full papers due:

March 2021;

Conference dates:

August 23–25,
2021.

Thank you for
your
attention!