

Distr.: General
25 January 2019

English only

Economic Commission for Europe

Inland Transport Committee

Working Party on Transport Trends and Economics

**Group of Experts on Climate Change Impacts and
Adaptation for Transport Networks and Nodes**

Sixteenth session

Geneva, 29 and 30 January 2019

Item 4 of the provisional agenda

Discussions on the final report of the Group of Experts

Analysis of responses to the climate change adaptation questionnaire 2016

Submitted by Prof. Adonis Velegrakis, University of Aegean

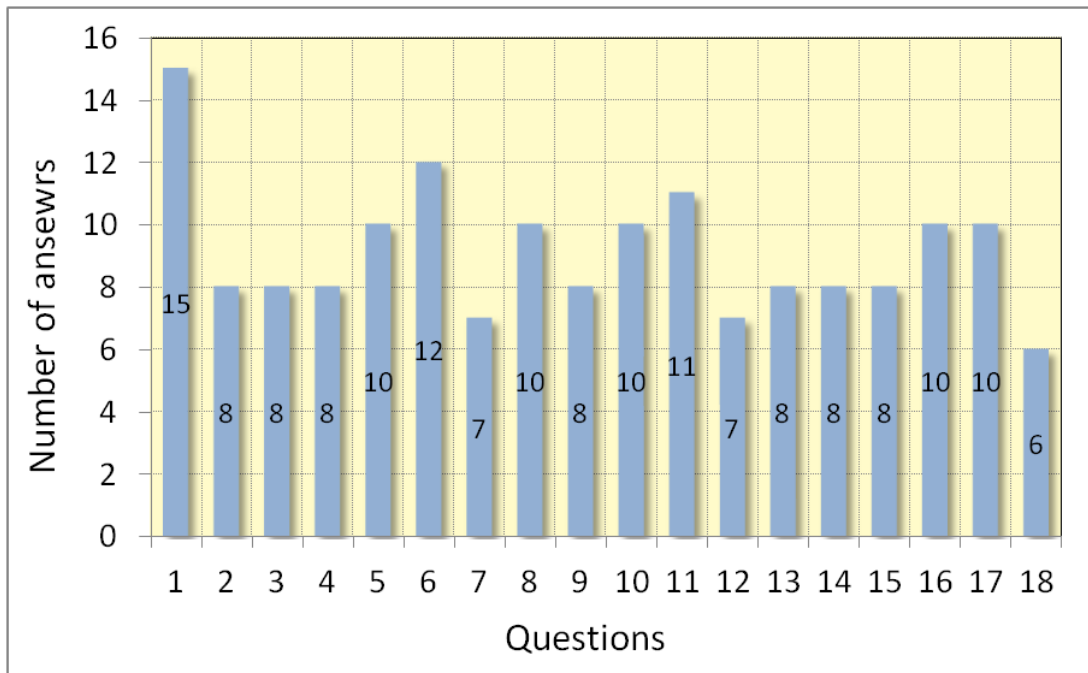
This document illustrates the analysis of responses received to the climate change adaptation questionnaire 2016. The Group of Experts is invited to consider this analysis and consider its inclusion in its final report.

15 questionnaires were analysed

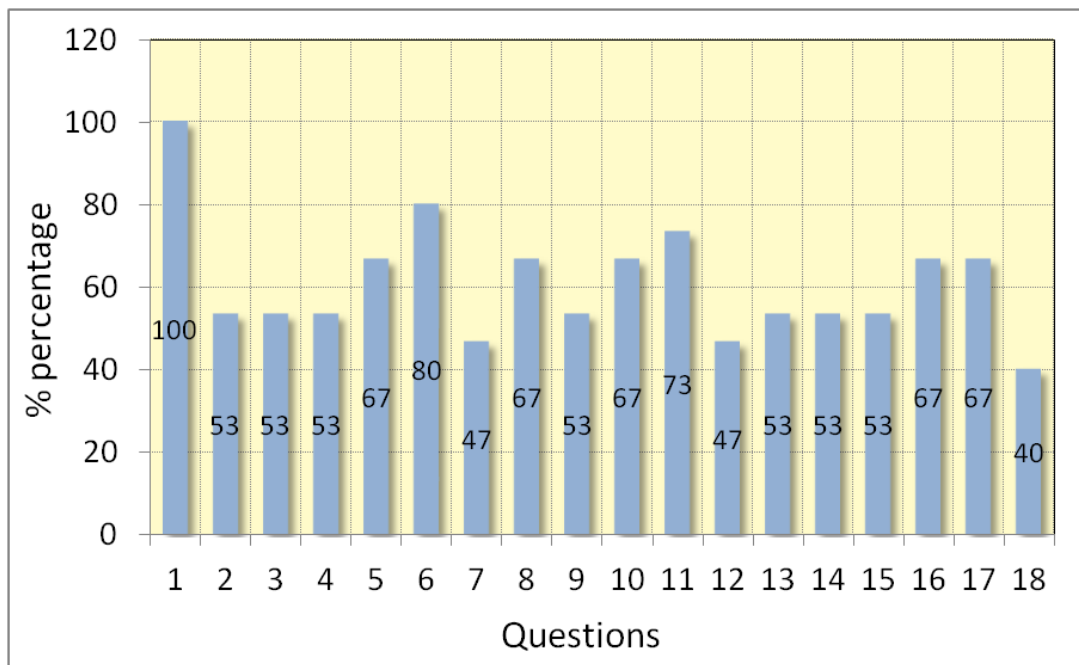
Questions statistical analysed (figures): 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15 and 16

Descriptive questions: 7, 17 and 18

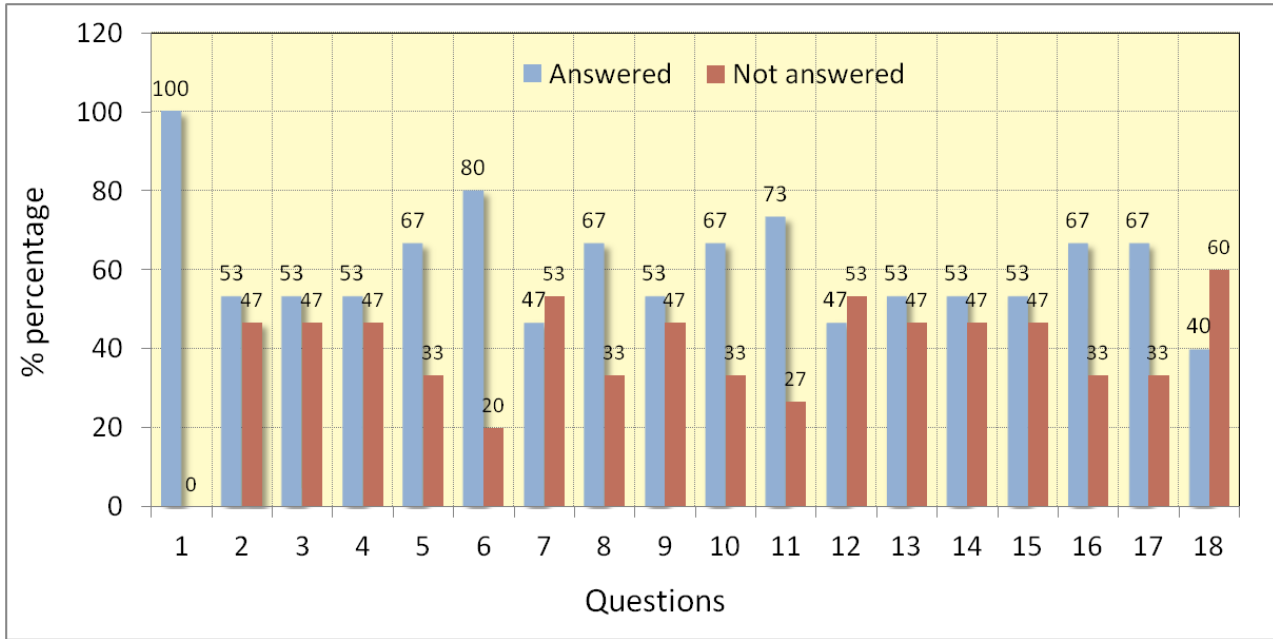
Figures that illustrate the number of countries that answered each question



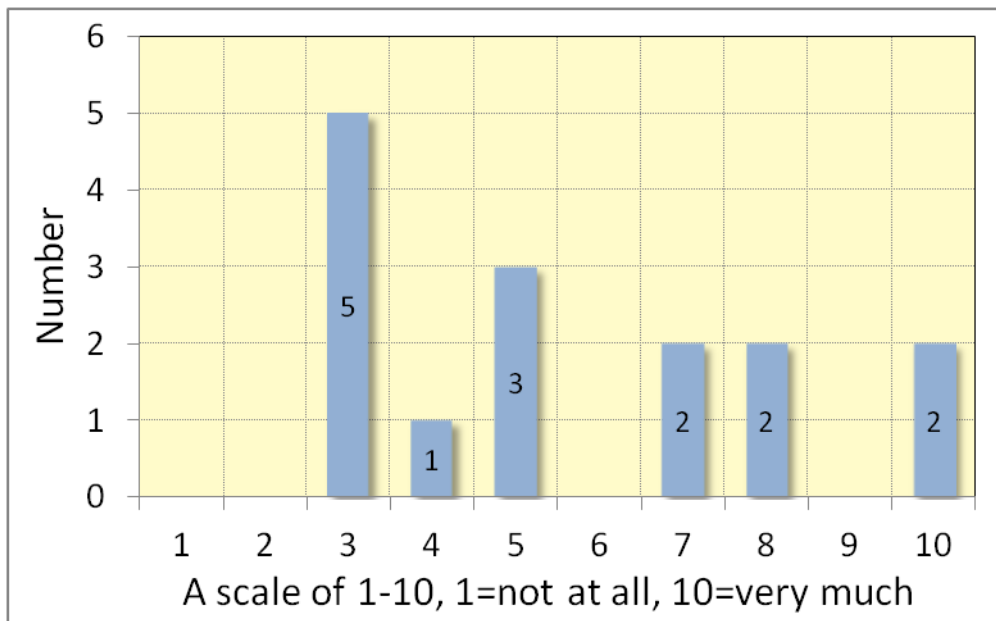
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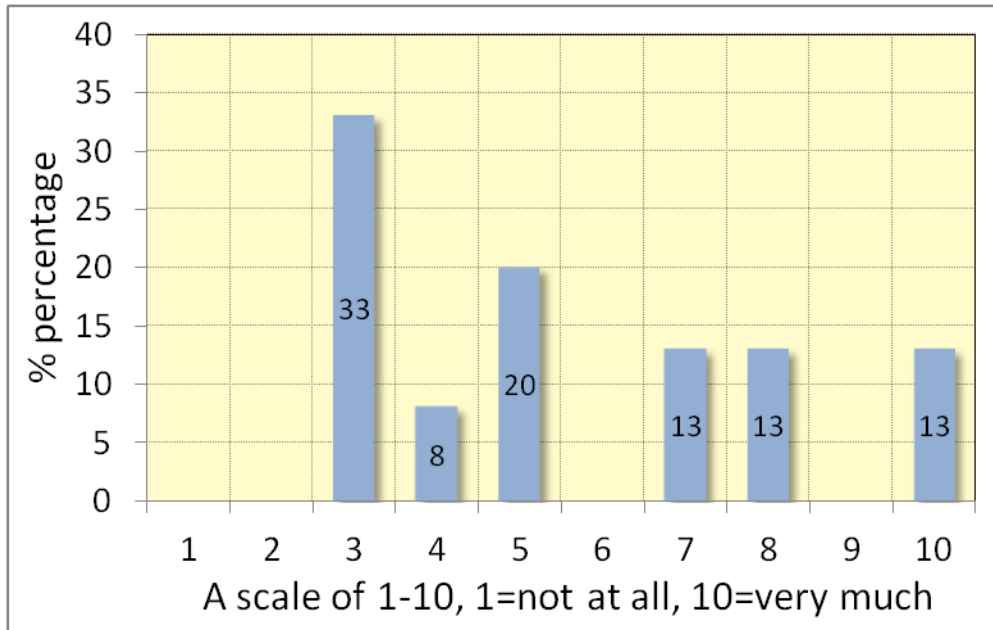
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QUESTION 1: To which extent do you consider climate change and/or extreme weather events to be a problem for transport in your country/region (on a scale of 1–10)

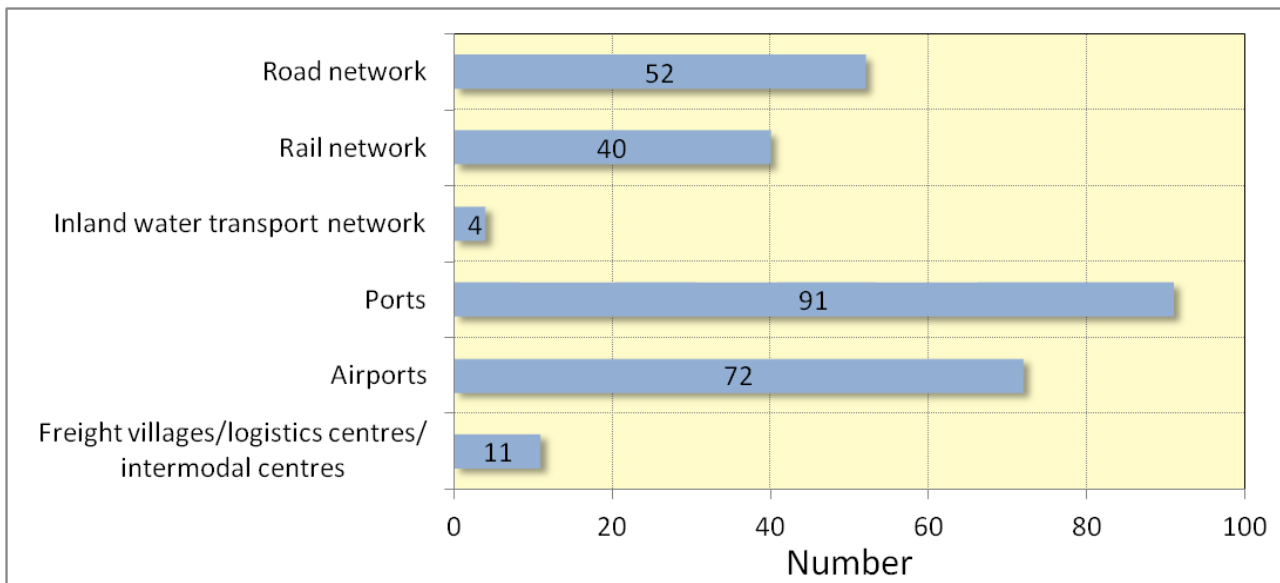


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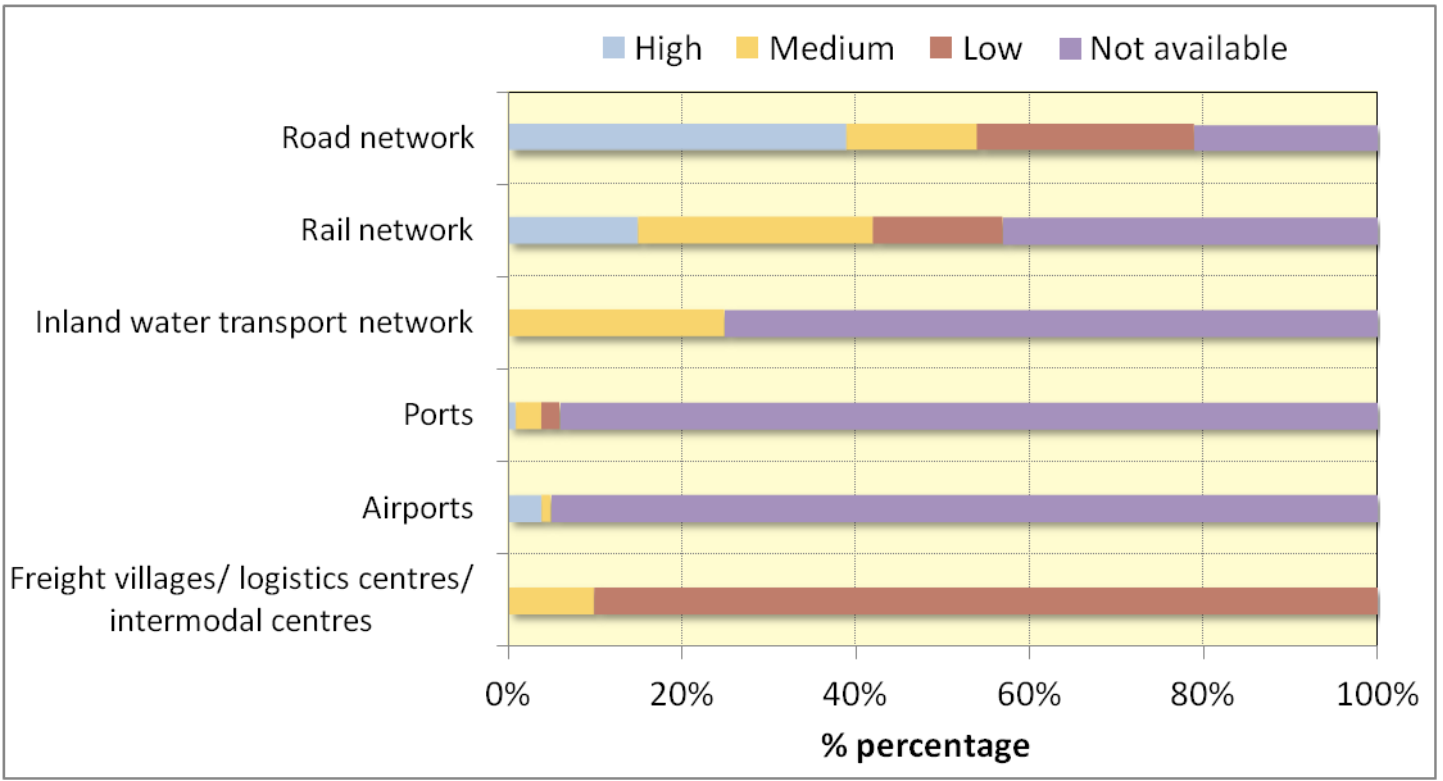


QUESTION 2: Critical transport infrastructure: Please list below the transport arteries (road, rail, inland water transport) and nodes (ports, airports, freight villages/ logistics centers/ intermodal centers) considered as critical in your country/region and specify their criticality.

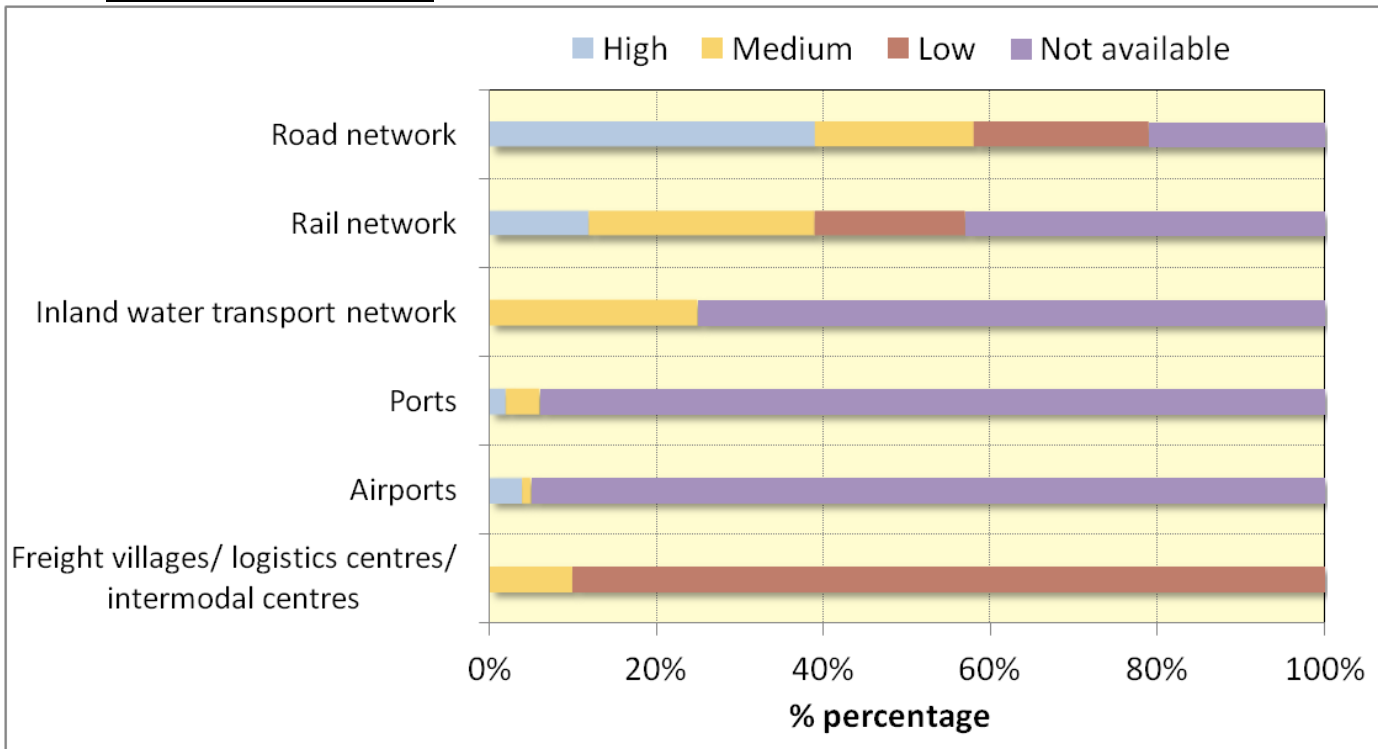
The number of the critical assets recorded by 8 countries who answered the question. Turkey gave 2 Annexes with the list of airports (55) and seaports (71) but do not specify if they are all critical; I have count all them.



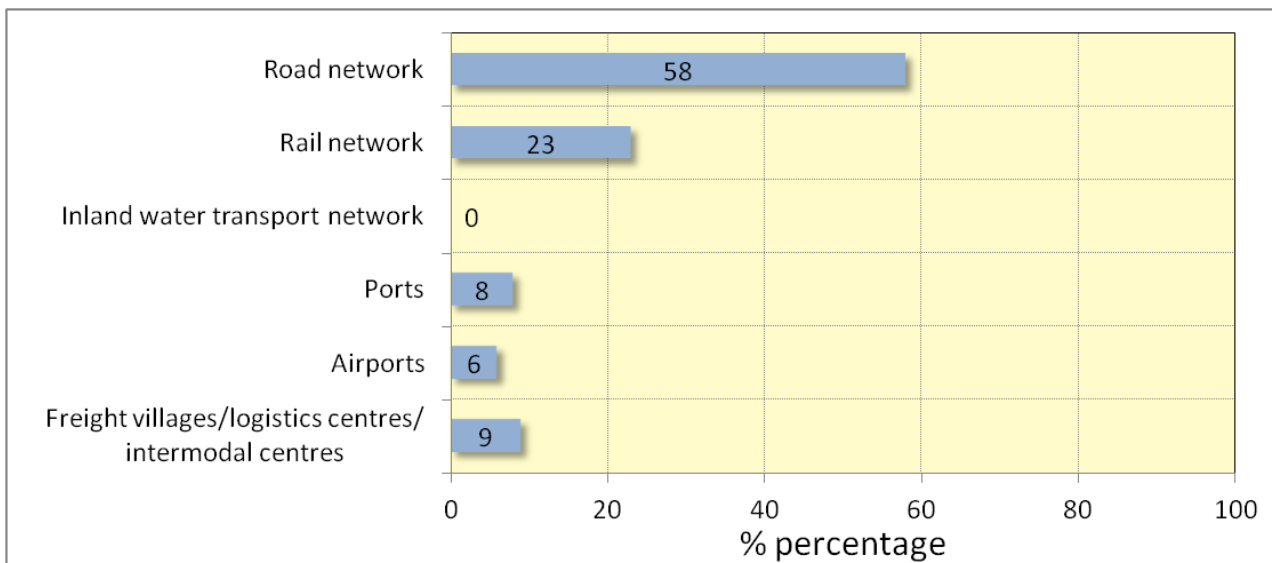
Estimated number of users affected

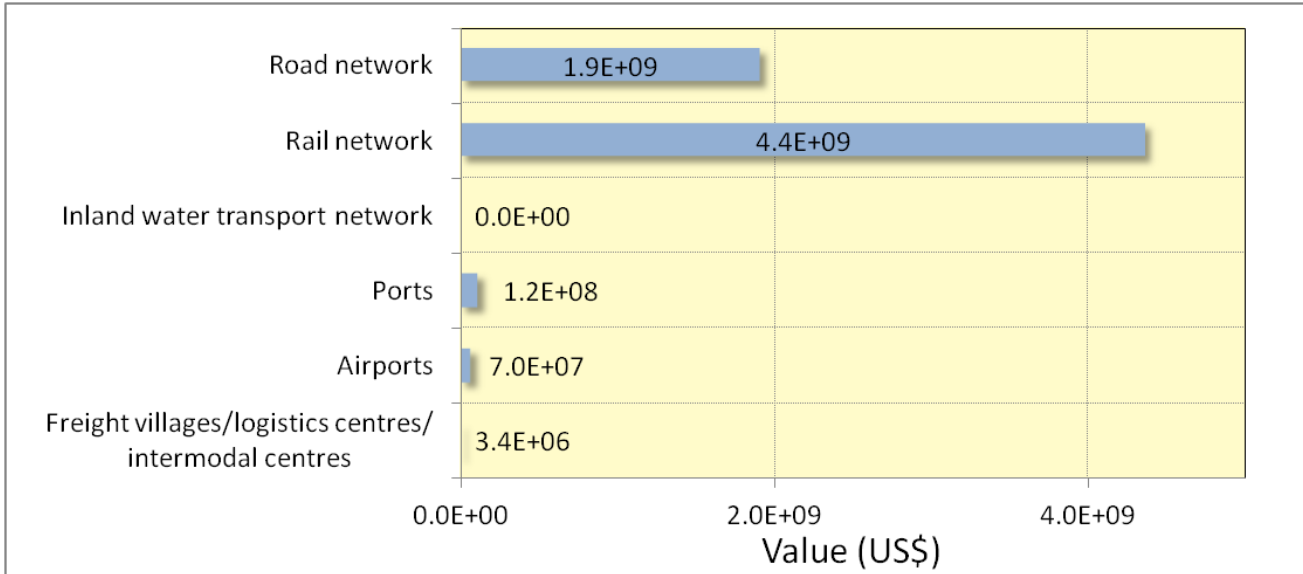


Estimated economic loss



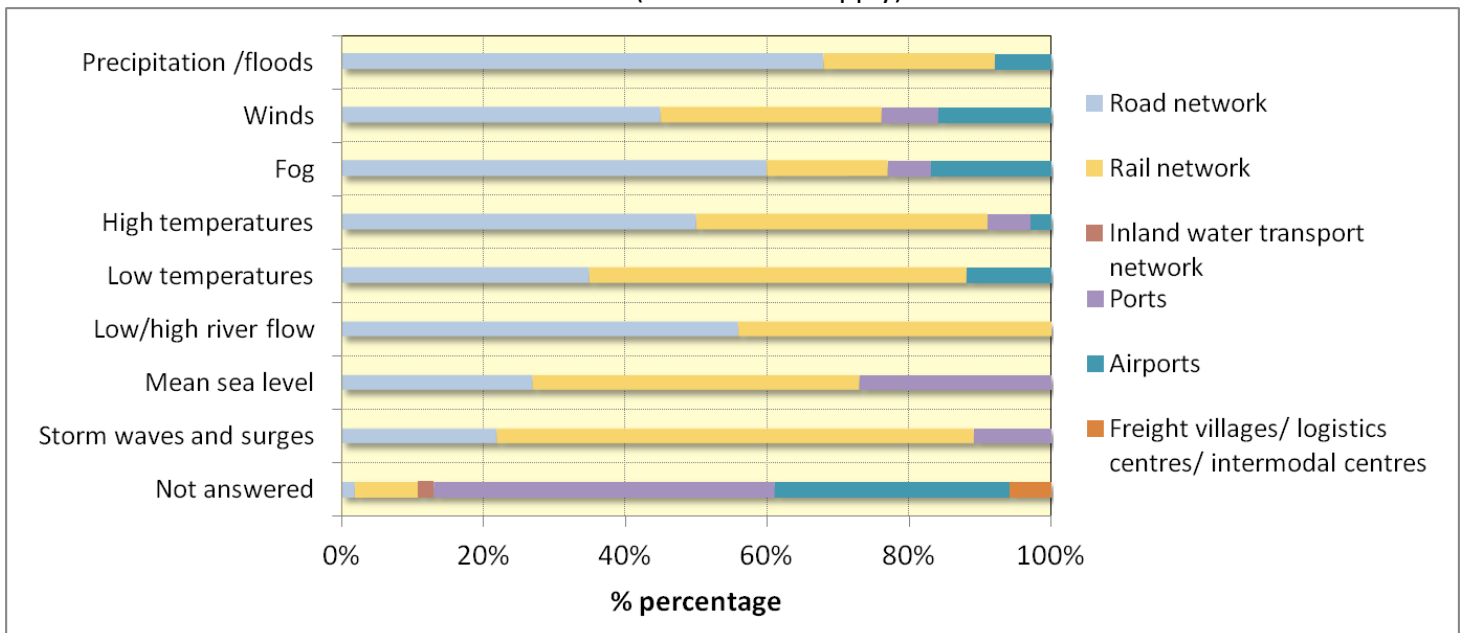
QUESTION 3: Do your Government / organization plan any investments in the next 5 years in the above mentioned critical infrastructure? If yes, please specify the investment and indicate its total value (in million US\$). Do planned investments in the above indicated critical infrastructure consider impacts of extreme weather and/or other climate related factors? If yes, please specify for each investment.





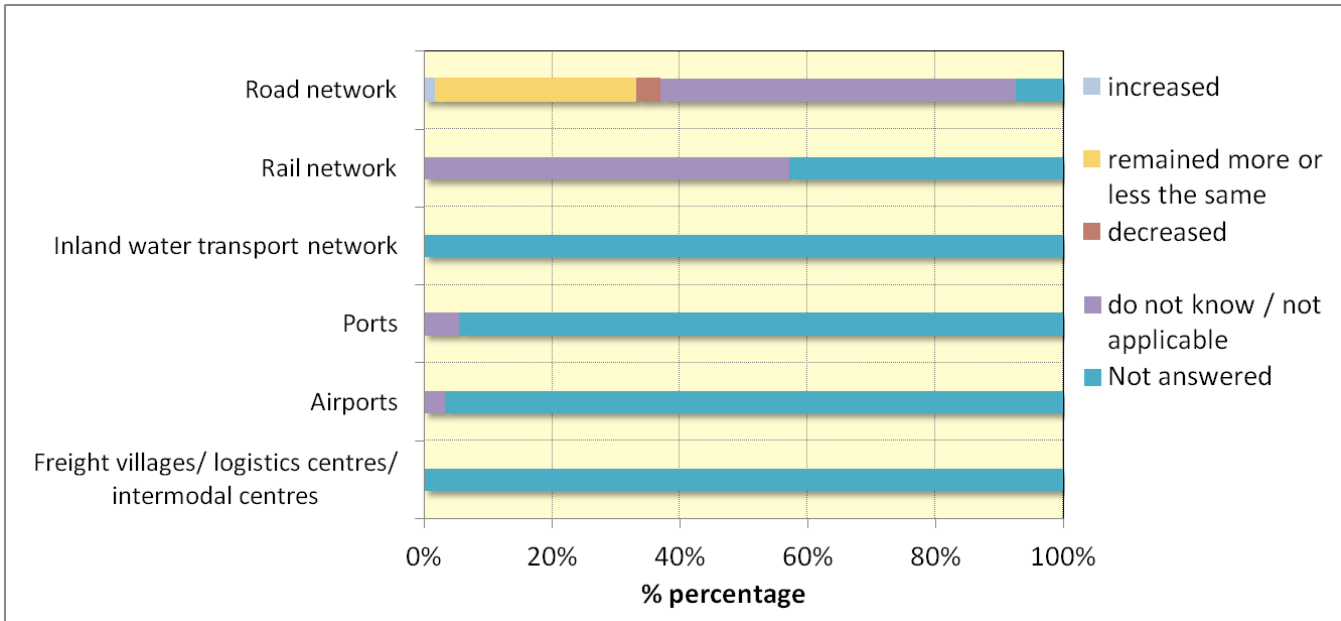
* The value was not available for all the above investments.

QUESTION 4: Which of the following weather or climate related factors have impacted your critical infrastructure mentioned above (check all that apply)



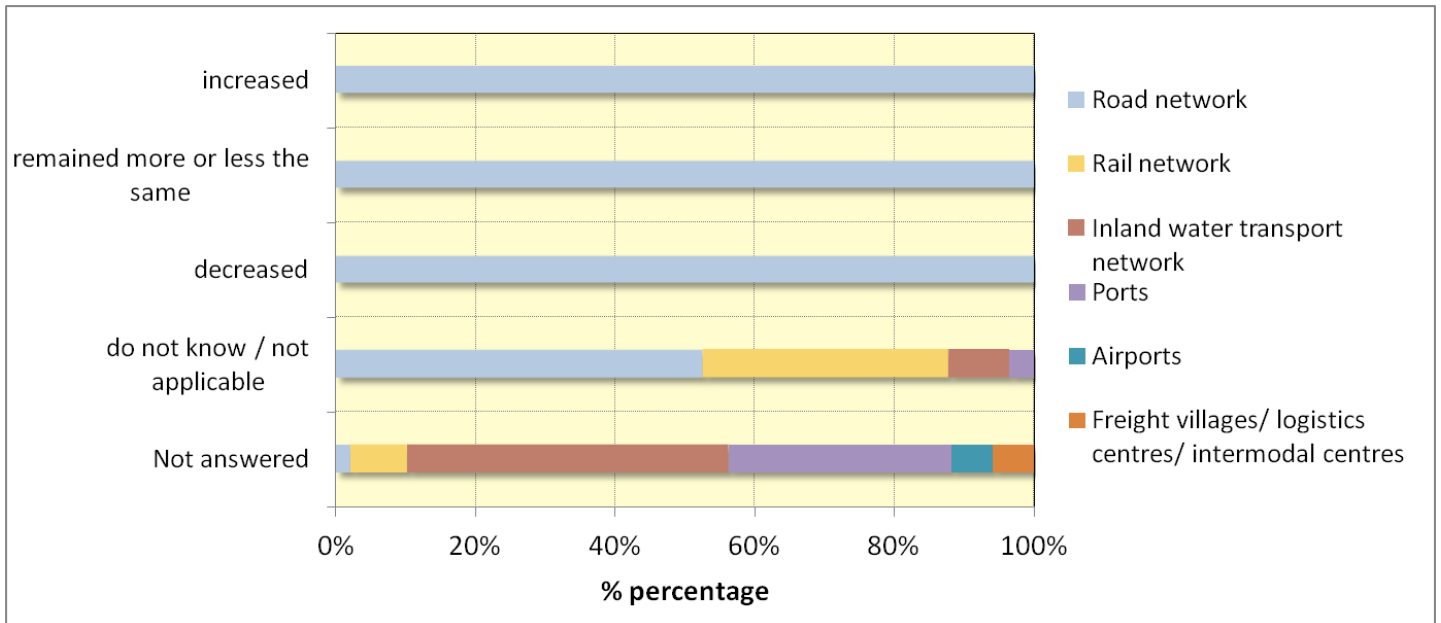
* Not answered: a list of assets was given in question 2 but in the following questions there was no information for all them, those with no information are included in the category not answered; the assets listed in the Turkey's annexes are also included.

QUESTION 5: Over time, has the magnitude of damage and/or disruption caused by weather or climate related events:



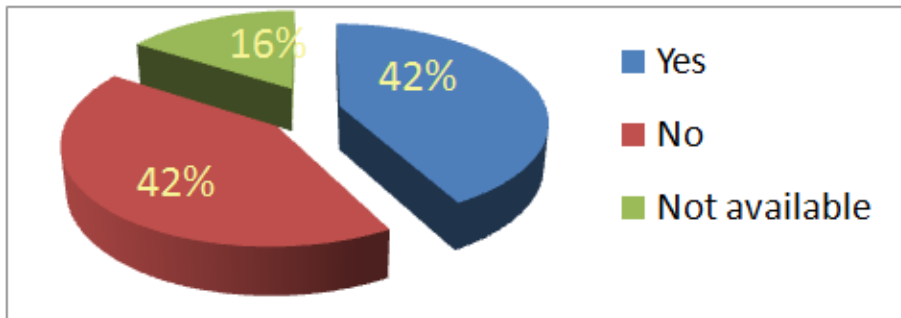
* Not answered: a list of assets was given in question 2 but in the following questions there was no information for all them, those with no information are included in the category not answered; the assets listed in the Turkey's annexes are also included.

Or

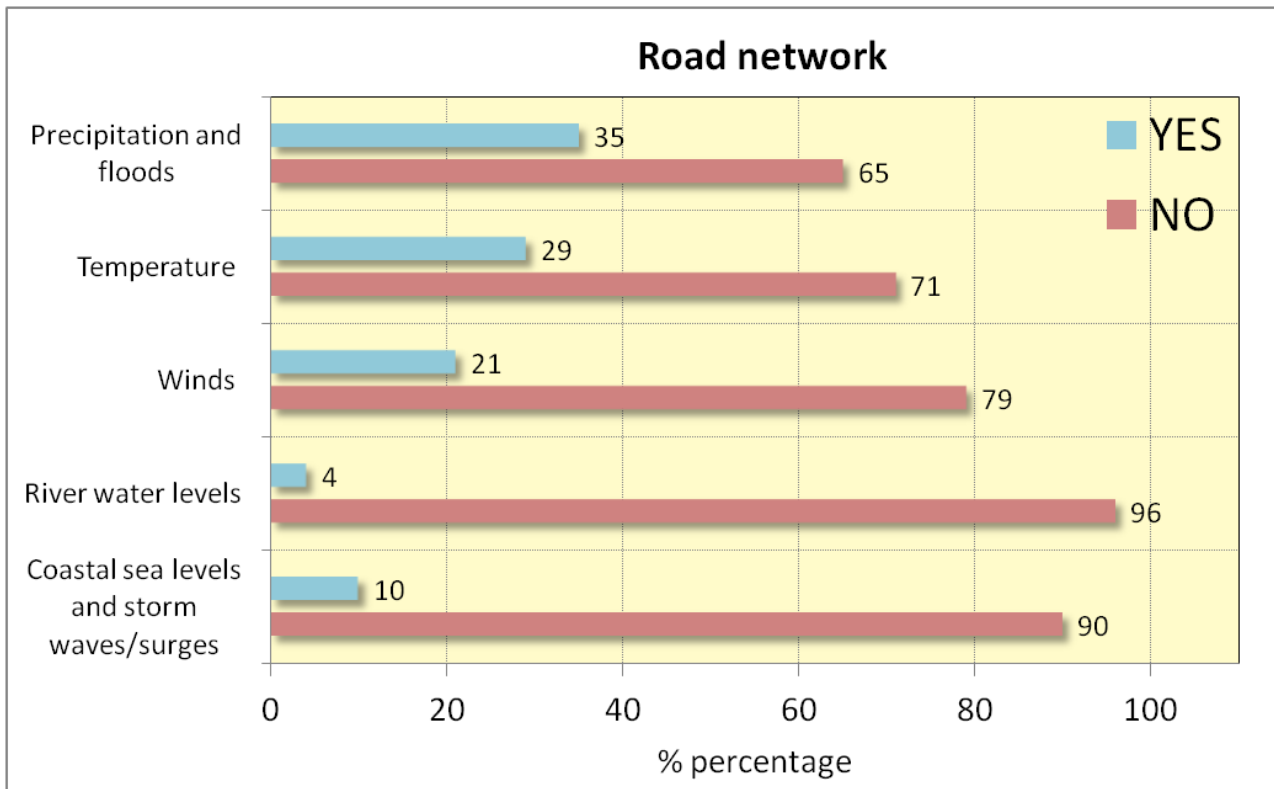


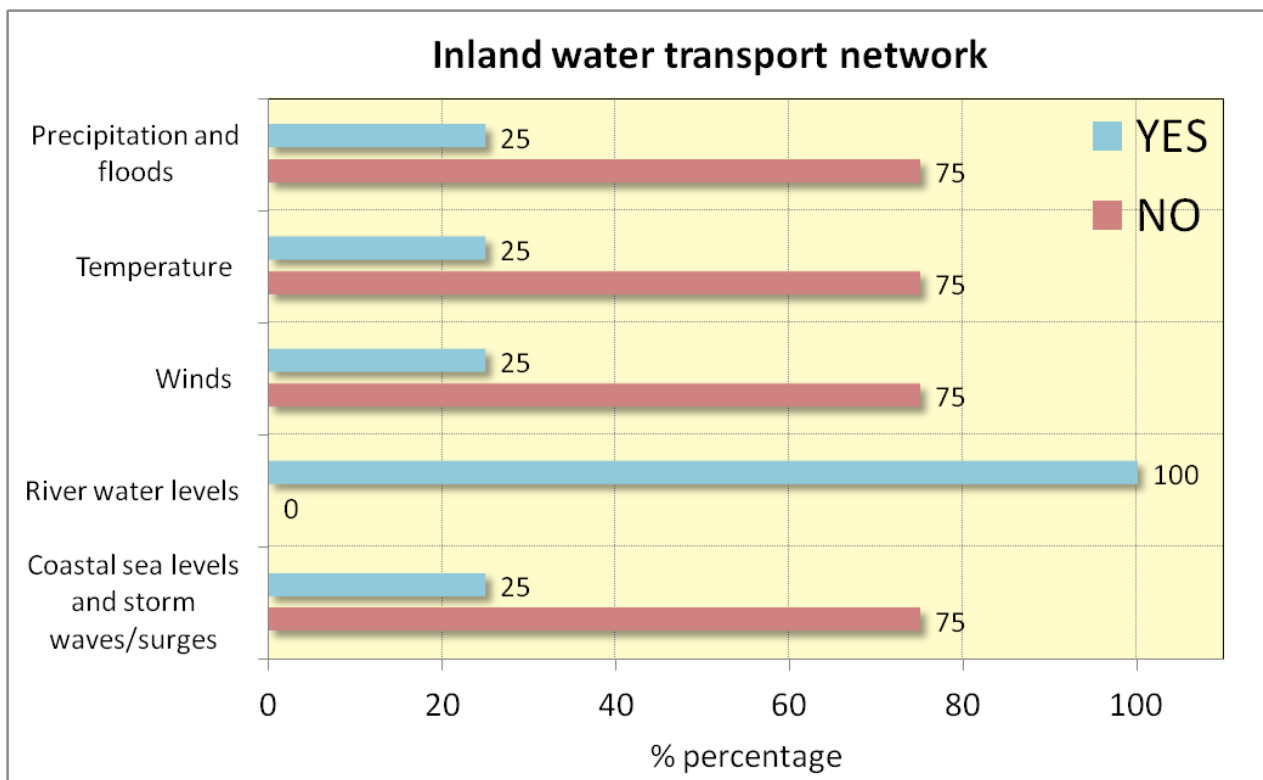
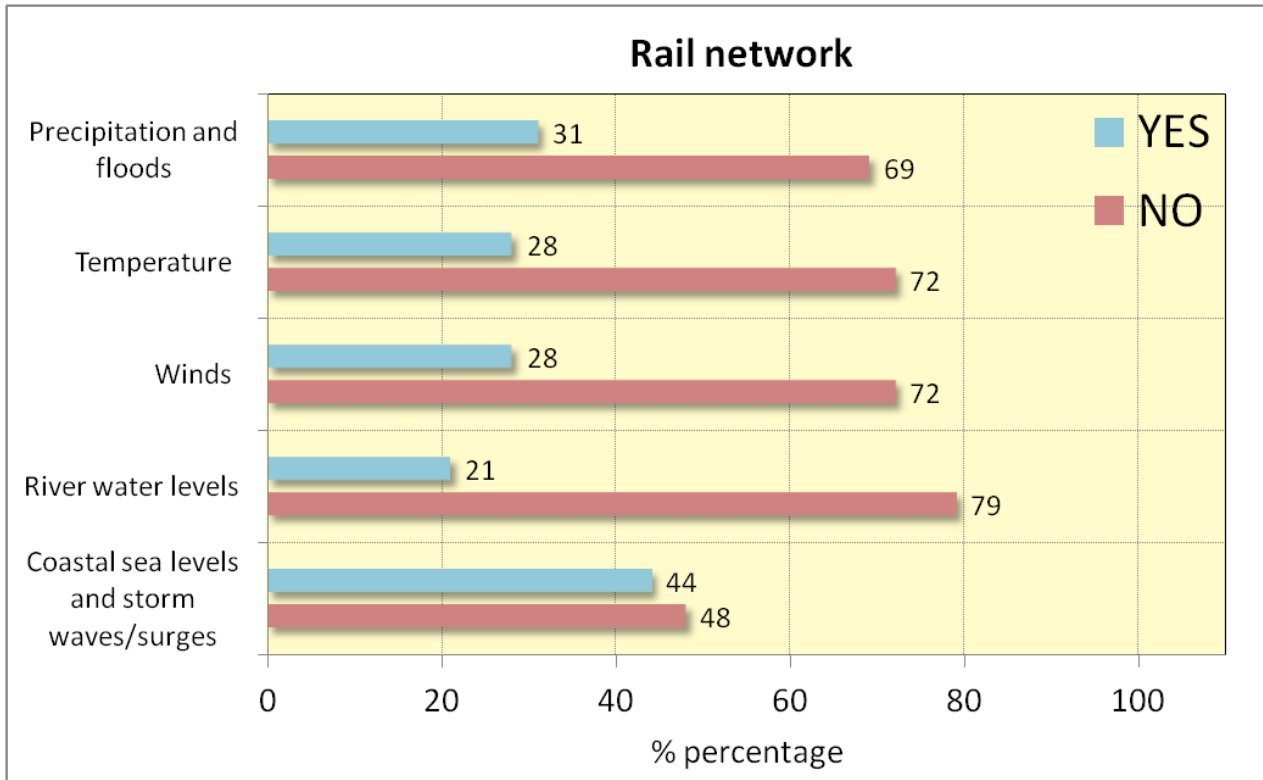
* Not answered: a list of assets was given in question 2 but in the following questions there was no information for all them, those with no information are included in the category not answered; the assets listed in the Turkey's annexes are also included.

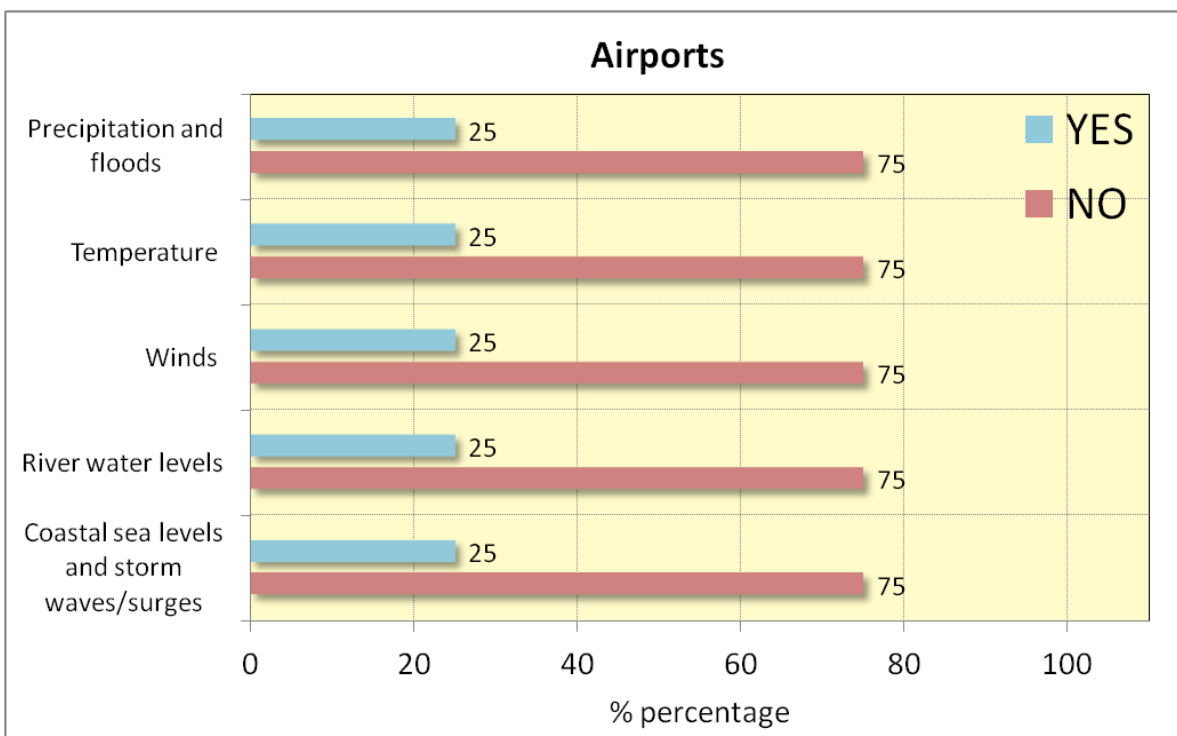
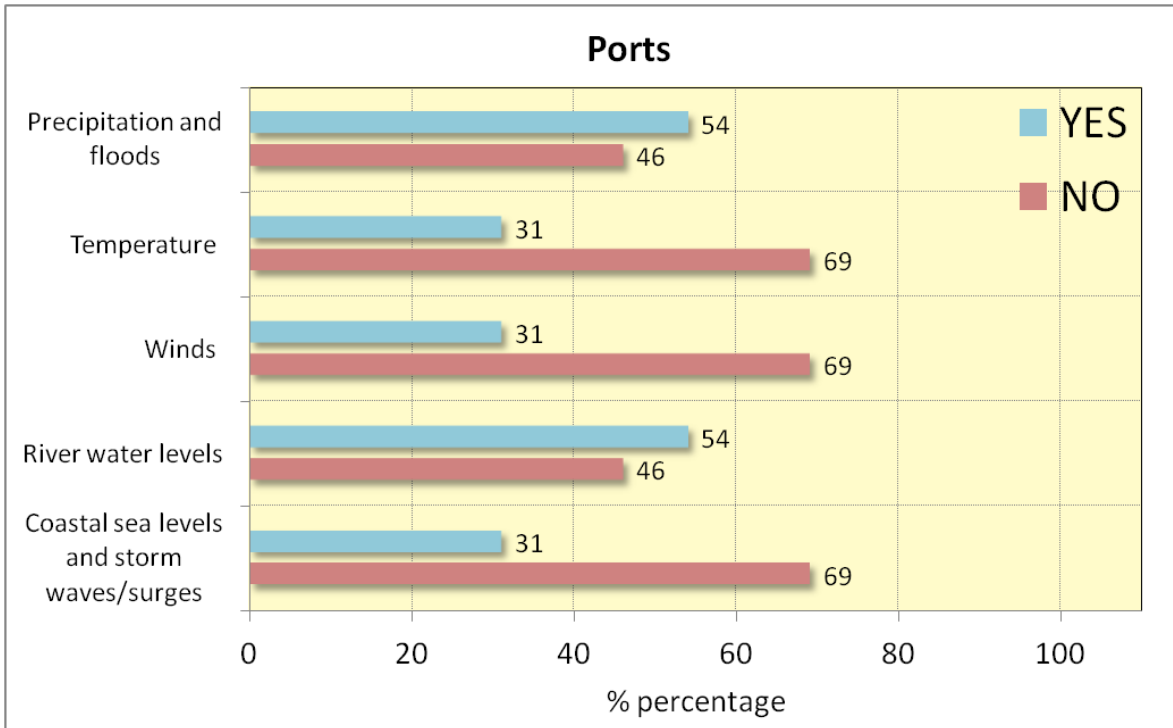
QUESTION 6: Have users of the critical infrastructure requested implementation of effective response measures?

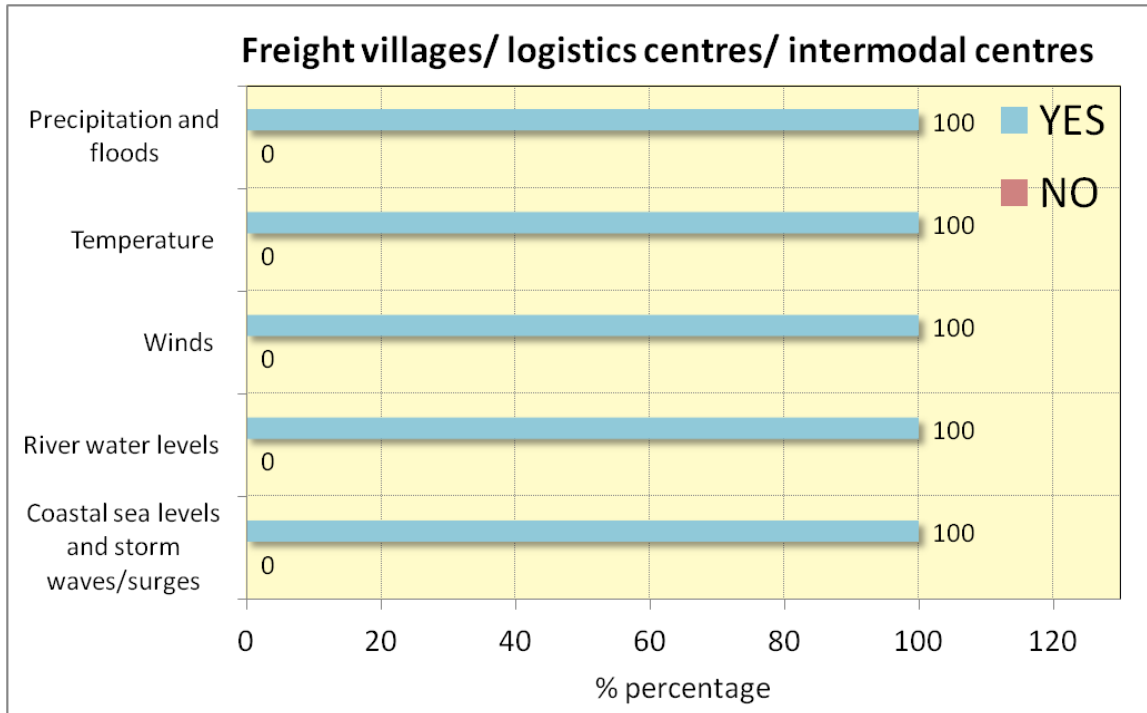


QUESTION 8: Is there information available on the following climate change impacts that have affected or will potentially affect critical infrastructure in your country/region/organization? (There was no information for the assets listed in the Turkey's annexes and are not included)







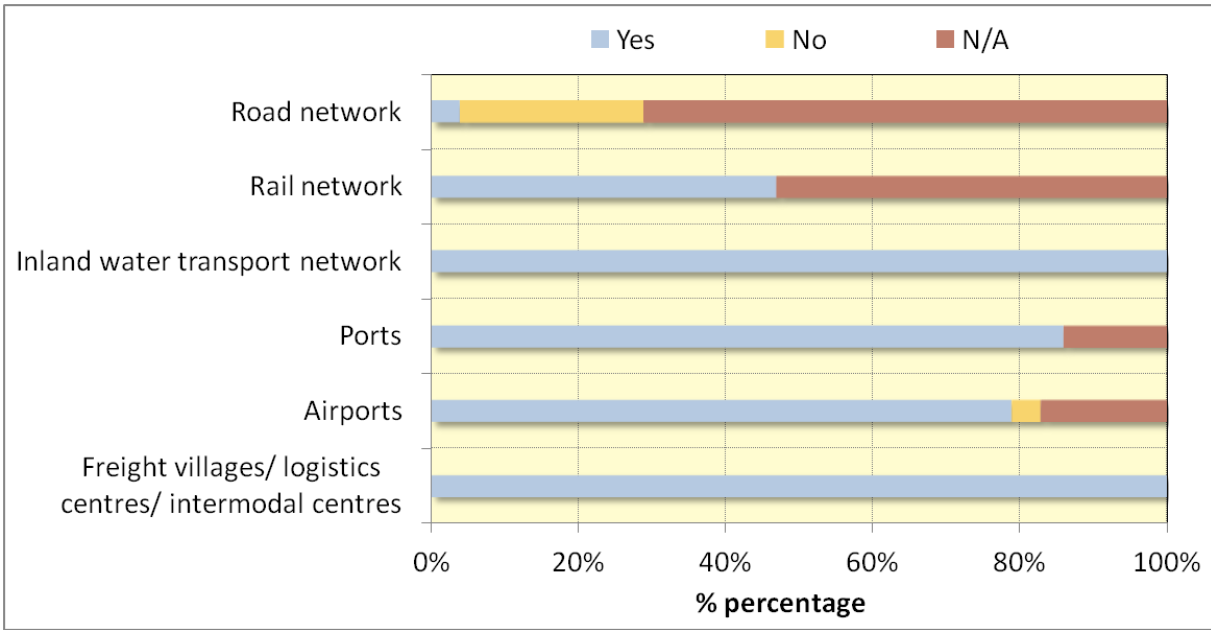


* There was information only for 1 asset so may this figure is pointless.

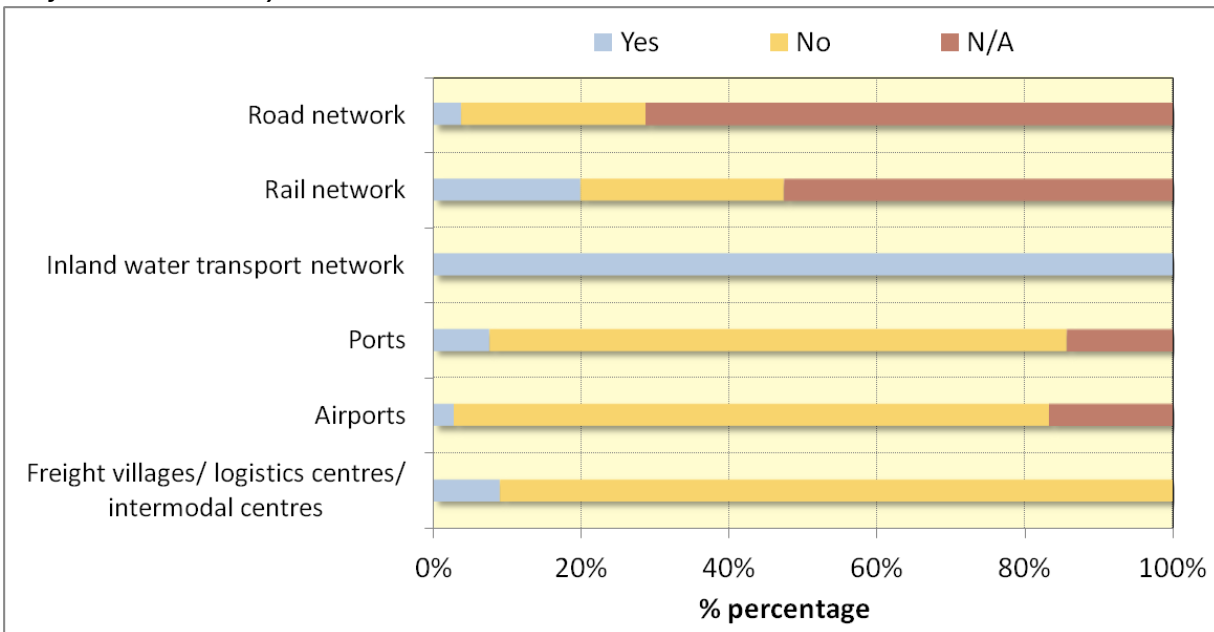
QUESTION 9: If yes, have the observed trends already necessitated or will require adaptation responses?

* The answer from Turkey was not clear ('When the right time comes, it will be') so I made figures for all alternatives.

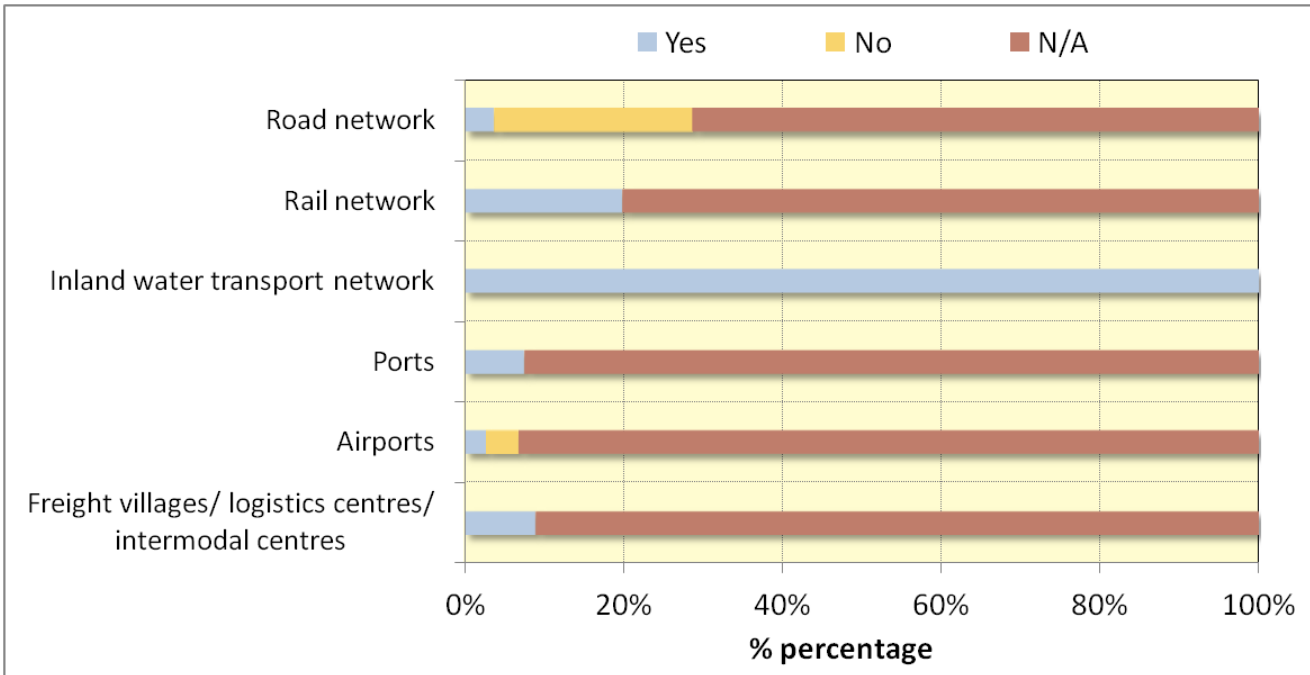
- *If we count Turkey as Yes*



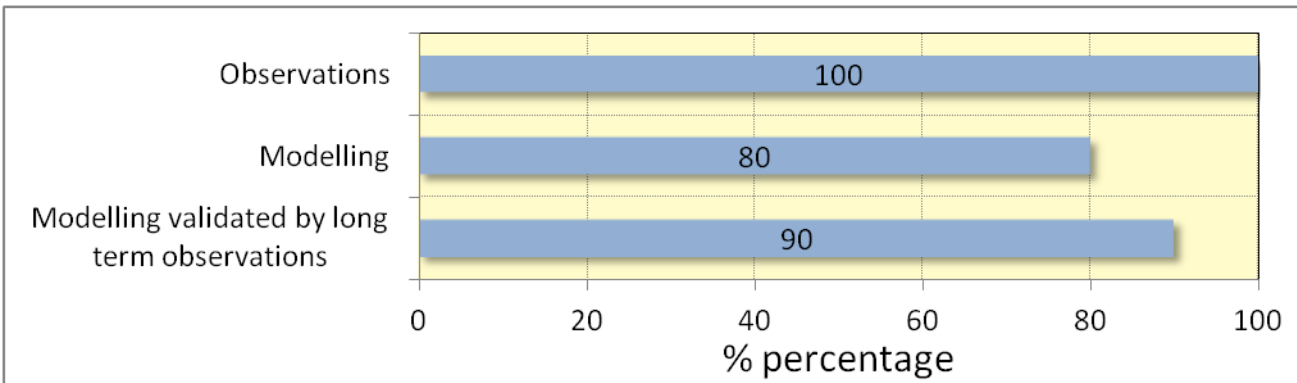
- If we count Turkey as No



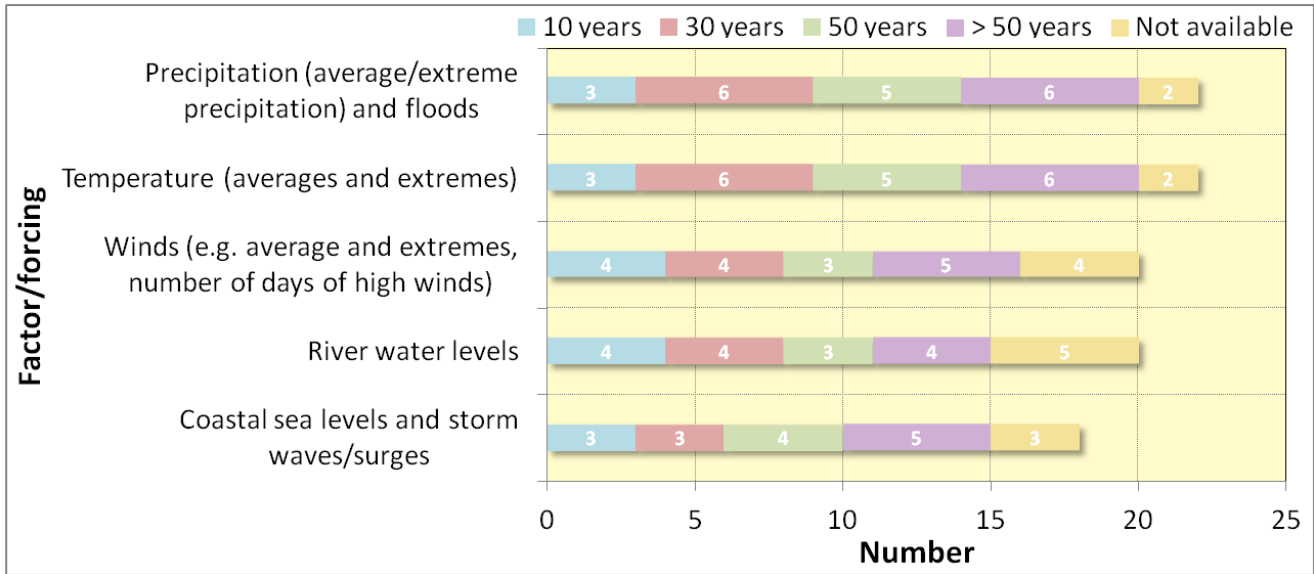
- If we count Turkey as N/A



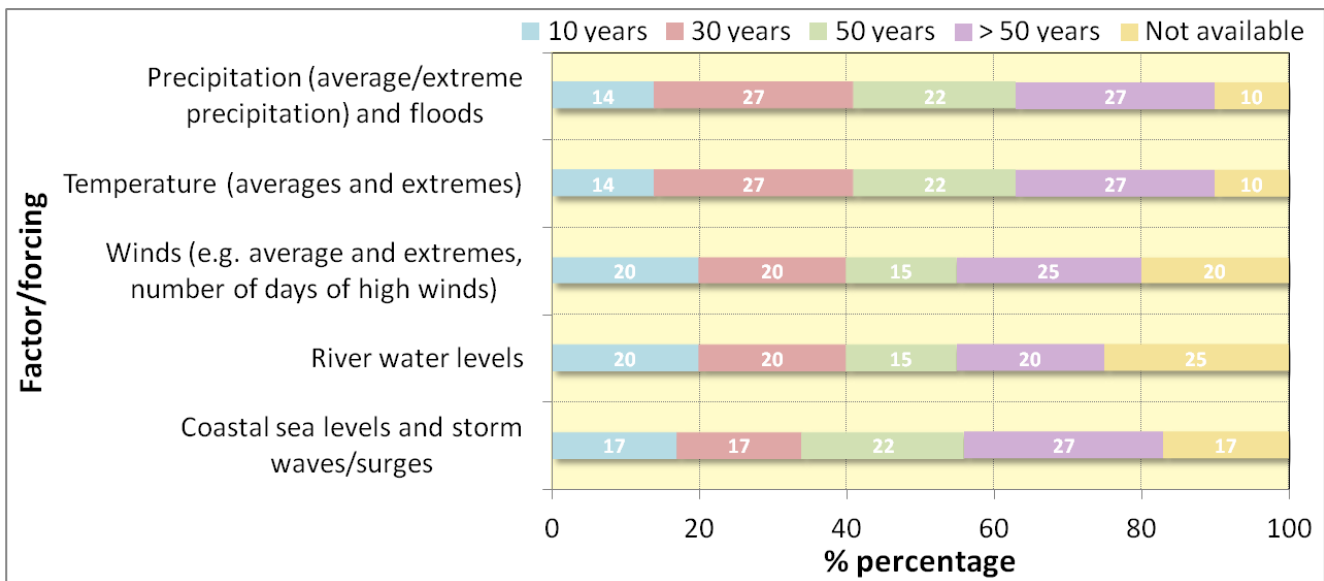
QUESTION 10: Please indicate the basis for weather/climate information used in the estimation of impacts and the design of response measures regarding your critical infrastructure (check all that apply)



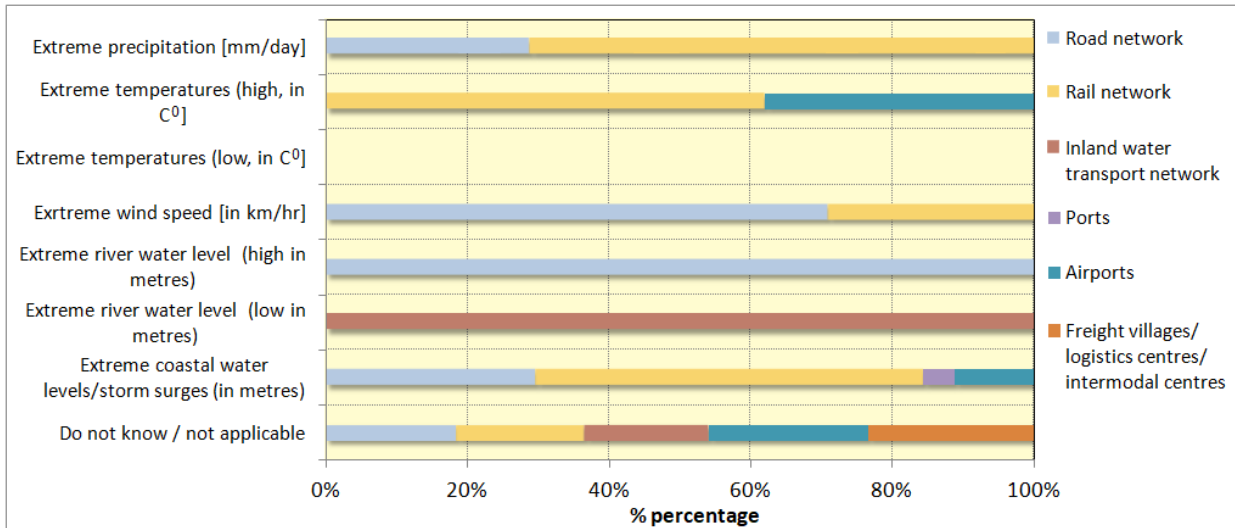
QUESTION 11: Are downscaled forecasts or assessments available for your critical infrastructure regarding the following climate forcing and factors? If so, at which time scale? (Check all that apply)



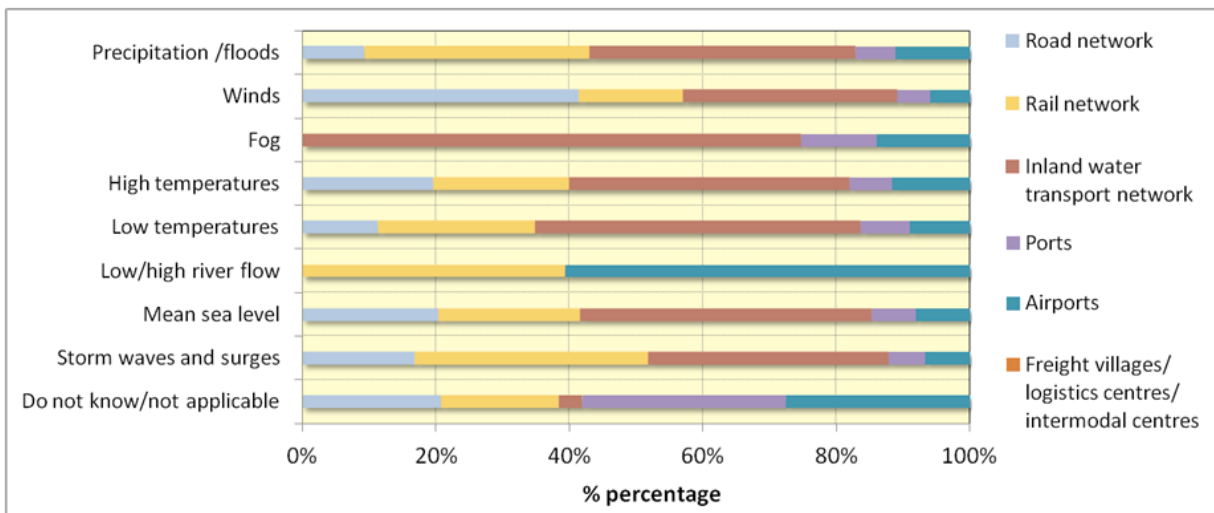
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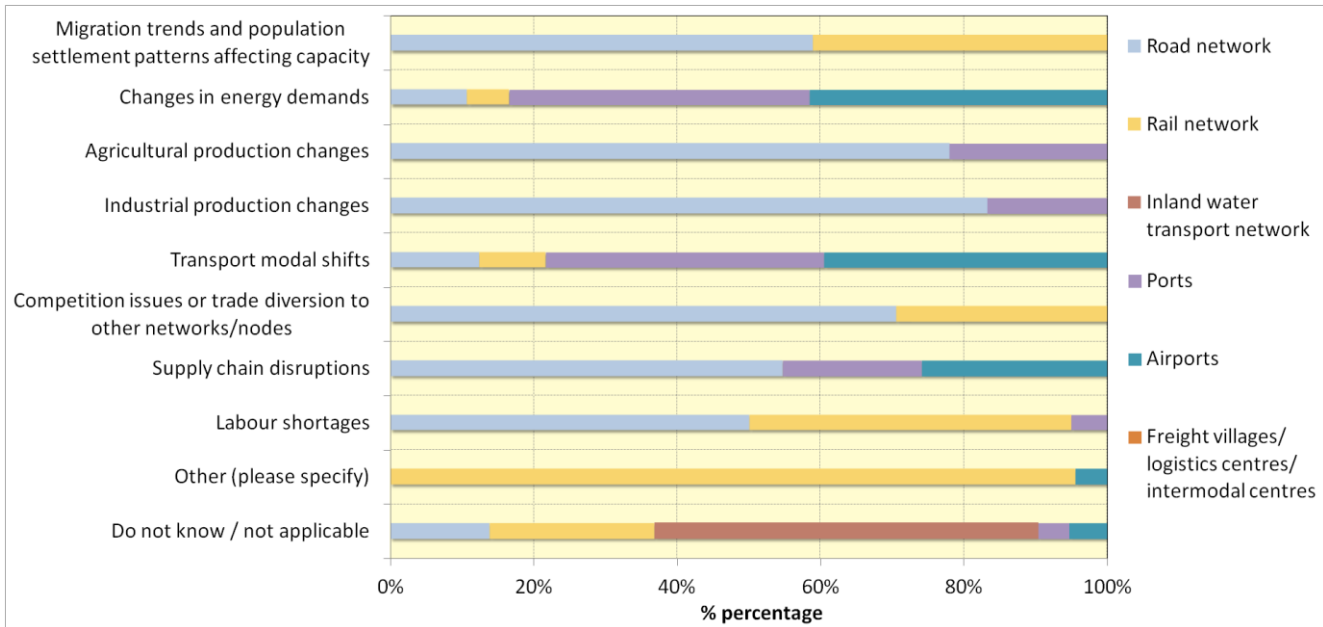
QUESTION 12: Are At which thresholds do you expect that the integrity and functionality of the critical infrastructure of your country/region/organization will be significantly impaired? Indicate critical infrastructure of networks or nodes (multiple entries)



QUESTION 13: Has your Government / Organization assessed or is planning to assess impacts/vulnerabilities to weather or climate related events for the above mentioned critical infrastructure? If yes, which of the following have been or are going to be considered in these assessments? Indicate critical infrastructure network (multiple entries, i.e. R1 road network, 1st entry)



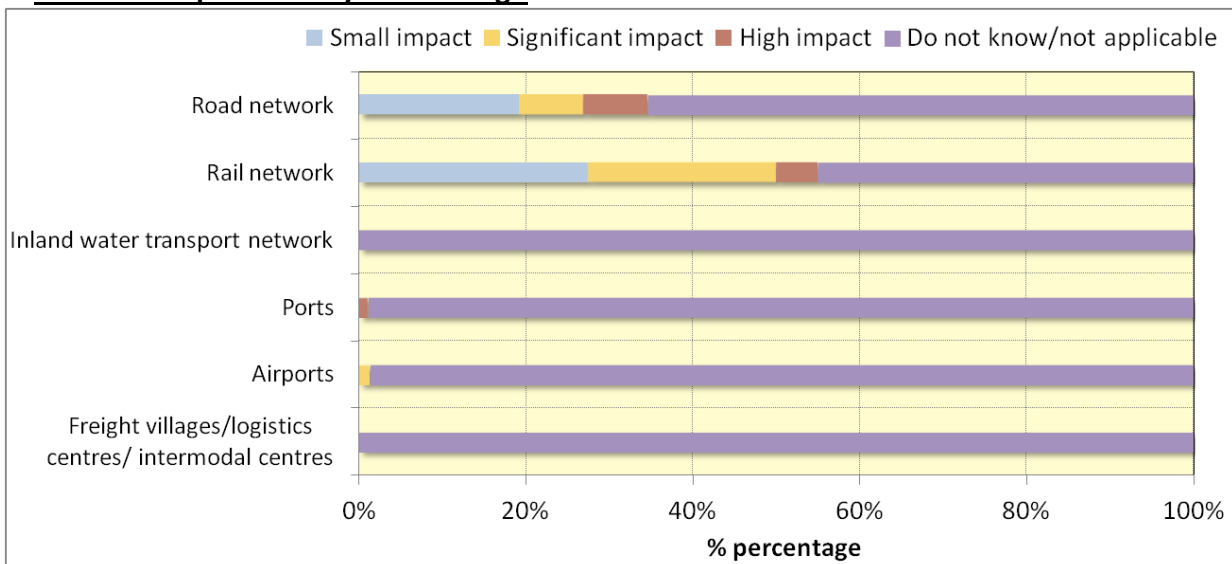
QUESTION 14: Do you expect that the critical infrastructure in your country/region /organization will be (indirectly) affected by weather and/or climate induced changes to the following? (Check all that apply). Indicate critical infrastructure (if applicable, multiple entries-networks and nodes)



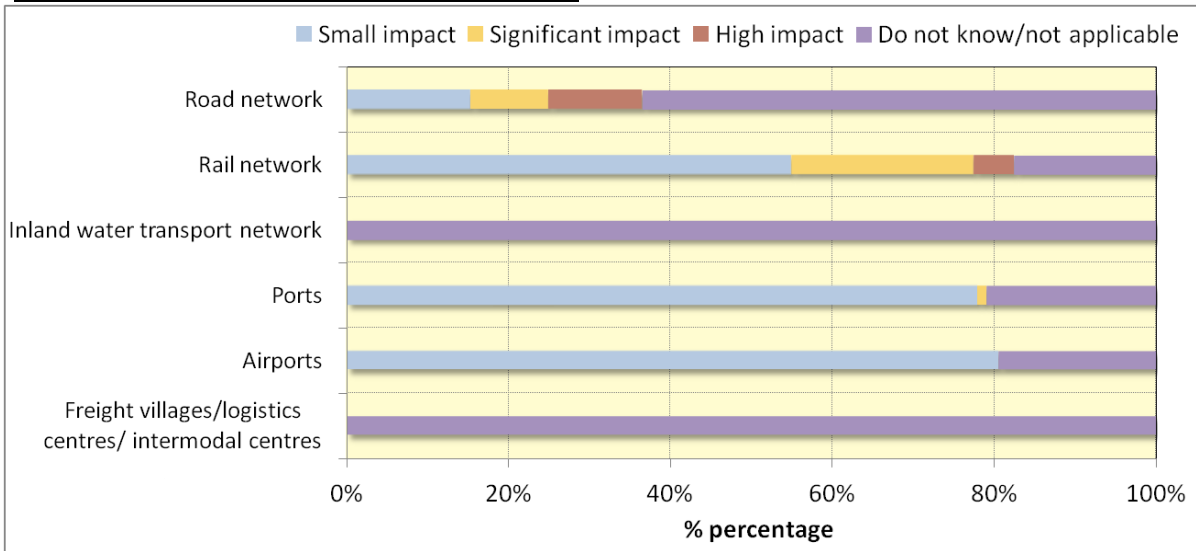
QUESTION 15: Has any of the critical infrastructure mentioned above ever been impacted by weather and/or climate related factors, including extreme events? If yes, indicate the type and extent of impact (check all that apply):

Critical infrastructure network or node (multiple entries, i.e. R1, road network 1st entry)

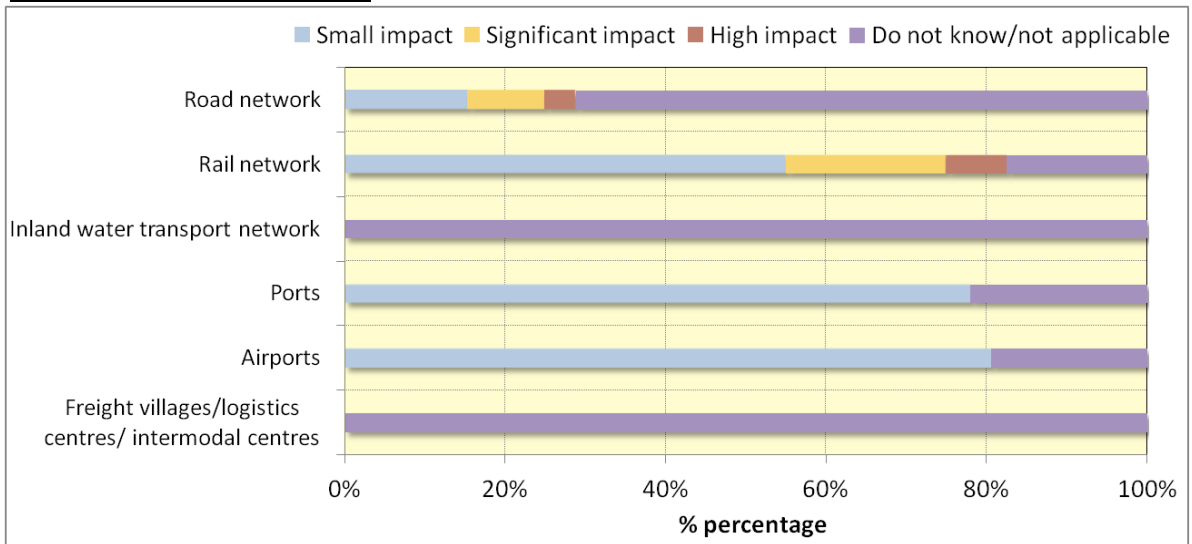
extent of impact for Physical damage



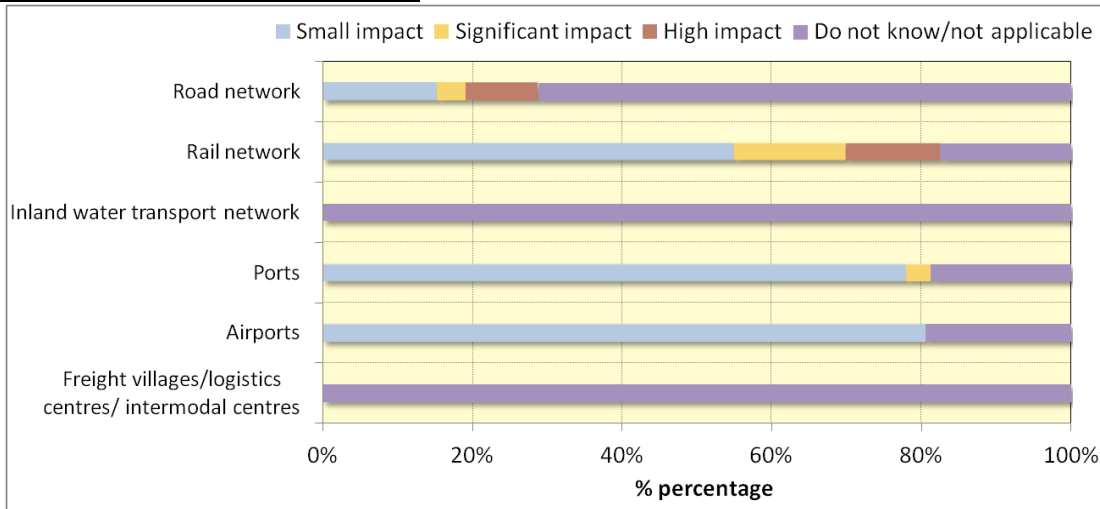
extent of impact for Operational problems



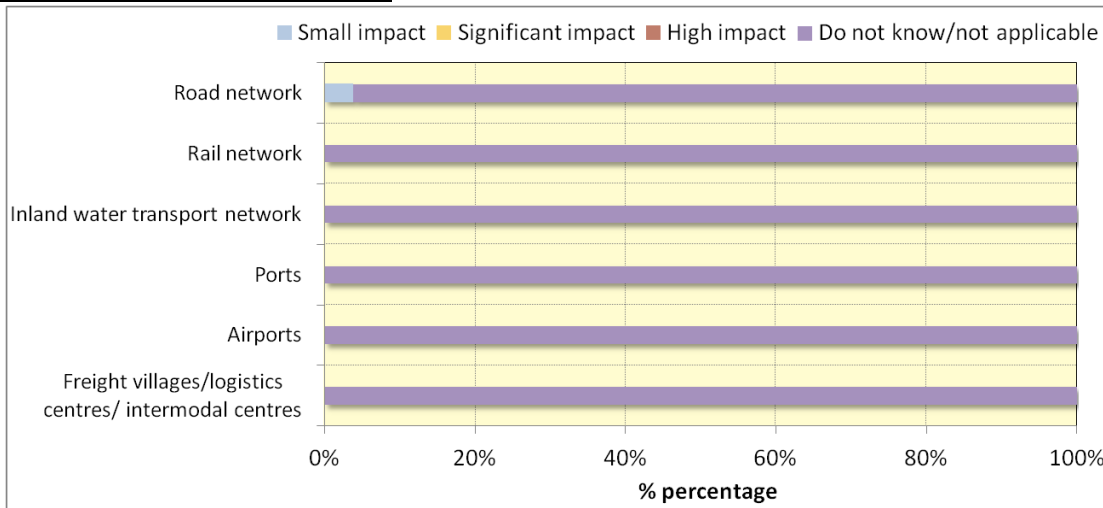
extent of impact for Delays



extent of impact for Interruptions



extent of impact for Other type



QUESTION 16: Has your Government / organization mainstreamed weather and/or climate related considerations in planning, design and construction of transport infrastructure? If yes please specify.

