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### 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

### Report of the Group of Experts on Climate Change Impacts and Adaptation for Transport Networks and Nodes on its sixteenth session

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## **I. Attendance**

1. The Group of Experts (WP.5/GE.3) on Climate Change Impacts and Adaptation for Transport Networks and Nodes held its sixteenth session on 29 and 30 January 2019. The session was chaired by Mr. J. Kleniewski (Poland).
2. Representatives of the following United Nations Economic Commission for Europe (ECE) member States participated: Canada, Denmark, Finland, France, Germany, Netherlands, Poland and Romania.
3. Representatives of the following United Nations organizations or specialized agencies attended the meeting: UNCTAD and WMO.
4. At the invitation of the secretariat, an expert from the following organization participated: University of the Aegean.

## **II. Adoption of the agenda (agenda item 1)**

*Documentation:* ECE/TRANS/WP.5/GE.3/31

5. WP.5/GE.3 adopted its agenda.

## **III. Climate Change and Transport Networks and Nodes: Presentations of initiatives at national and international levels (agenda item 2)**

*Documentation:* Informal document No.6, Informal document No.7, Informal document No.8, Informal document No.9, Informal document No.10, Informal document No.11, Informal document No.12, Informal document No.13, Informal document No.14, Informal document No.15, Informal document No.17, Informal document No.18

6. WP.5/GE.3 discussed specific examples of national work for inclusion as case studies in its final report. Two types of inputs were discussed. Firstly, Informal documents Nos.6 (Germany), 7 (Canada), 8 (Poland), 9 and 10 (France), 14 and 15 (the Netherlands) were considered. These documents provided general information on various climate change adaptation initiatives in the field of transport undertaken by authorities at the different levels (Informal document No. 7), on the general activities on infrastructure adaptation due to climate change (Informal document No. 14), on the national climate change adaptation plan (Informal document No. 9) and on approaches to assessing potential impacts from climate change on infrastructure networks and nodes (Informal documents Nos. 6, 8, 10 and 15). Secondly, Informal documents Nos. 11 (Canada), 12 (Finland), 13, 17 and 18 (Germany) which evaluate socioeconomic impacts from climate change were discussed.
7. Regarding the first type of inputs, WP.5/GE.3 requested experts from Germany, France, the Netherlands and Poland to adapt their documents (Nos. 6, 8, 10 and 15) as far as possible to the following structure: (a) brief information on the national framework as basis for conducting infrastructure climate change impact assessments, (b) process for assessments, (c) assessment methodologies, and (d) conclusions and outlooks. The updated inputs should be tabled at the seventeenth session as official documents.
8. WP.5/GE.3 further requested Canada to elaborate an input on a Canadian approach to assessing impacts from climate change on transportation assets and to submit this input to the next session as informal document.

9. Regarding the second type of inputs, WP.5/GE.3 requested Canada and Finland to submit their cases studies, respectively on winter roads and on new guidelines for winter maintenance of roads, to the next session as official documents. It further requested Germany to update its case studies on low flow extremes on the River Rhine, on influences of weather and climate extremes on traffic flows – stress test scenario for Middle Rhine, and on impact on Kiel Canal with more details on socioeconomic impacts, and once ready, submit to either seventeenth or eighteenth sessions as official documents.

10. WP.5/GE.3 also invited Canada to consider preparing a case study on technological aspects and related socioeconomic impacts from climate change on all-year roads constructed in permafrost regions. Germany and Poland were requested to consider developing case studies on assessment of impacts from climate change in the context of the obligatory environmental impact assessment procedures for infrastructural projects in the European Union region.

11. Finally, WP.5/GE.3 requested the secretariat to contact experts who participated at earlier sessions, e.g. from Australia, Iceland, the Russian Federation, Spain and the United States of America to consider preparing a case study on socioeconomic impact from climate change on transport infrastructure in their countries.

#### **IV. Partners and expected contributions (agenda item 3)**

12. UNCTAD informed WP.5/GE.3 about work on a compilation of practices of relevance to climate change adaptation for costal transport infrastructures.

13. UNCTAD further informed WP.5/GE.3 about its preparations for an informal ad hoc meeting of experts to discuss climate change impacts on transport and focus on ways to advance the work on transport adaptation to climate changes. The meeting is to be held in Geneva on 9 and 10 April 2019.

14. WP.5/GE.3 took note of the information provided and requested UNCTAD to share its forthcoming report (compilation of practices) through ECE secretariat as well as to keep it abreast of the outcomes of the meeting of the informal group of experts.

#### **V. Discussions on the final report of the Group of Experts (agenda item 4)**

*Documentation:* Informal document No.1, Informal document No.2, Informal document No.4, Informal document No.5, Informal document No.16

15. In addition to the inputs considered under item 3, WP.5/GE.3 discussed inputs made available at this session to constitute sections of chapters 1 and 2 of the final report. In particular, WP.5/GE.3 discussed Informal document No. 1 on implication for transport from climate change and Informal document No. 2 on climate change trends and projections, both prepared by Prof. Velegrakis of the University of Aegean. WP.5/GE.3 also considered Informal document No. 4 on main transport networks and nodes in UNECE region, and Informal document No. 5 presented during the session and proposing specific climatic factors for which assessment should be made to identify potentially higher risk areas due to climate change. Informal document No. 3 was not made available due to unanticipated circumstances.

16. WP.5/GE.3, after a short discussion, requested to further update Informal documents Nos. 2 and 4. Informal document No. 2 should be made more compact by restructuring its section on climate change trends. The Euro-Asian Transport Links corridors and the general

analysis on networks should be added to Informal document No. 4. For the analysis, it should be linking, where possible, to case studies from countries or to information provided in the questionnaire. This document should also discuss and present the major maritime ports. Canada was invited to provide the secretariat with geo-coded data on its major transport networks and nodes (which may also include airports and maritime ports). WP.5/GE.3 also requested that these documents be tabled at the seventeenth session as official documents.

17. Regarding the Informal document No.5, WP.5/GE.3 agreed that the section of the final report on the identification of higher risk areas due to climate change should consider climatic factors such as: heatwaves, downpours and flashfloods, flooding, permafrost thaw and low river flows. These climatic factors should be assessed as per the established methodology using variables provided in the table below as proxies.

<i>Climatic factor</i>	<i>Proxy variable</i>	<i>Network</i>
Heatwave	WSDI, Warm speel duration index: Annual count of days with at least 6 consecutive days when TX > 90th percentile	Road and rail networks
Downpours/ flashfloods	R20mm (annual count of days pr > 20mm)	Road and rail networks
Flooding	Rx5day (maximum 5-day consecutive precipitation (pr) amount)	Road and rail networks
Permafrost thaw	ID, Number of icing days: Annual count of days when TX (daily maximum temperature) < 0°C	Road network
Heat on rail	Tropical days 30 degrees (SU, Number of summer days: Annual count of days when TX (daily maximum temperature) > 30°C.)	Rail network
Low river flow	Annual precipitation with Consecutive dry days	Waterways

18. The secretariat, in cooperation with WMO and the Climate Service Center Germany, were requested to apply the established methodology and prepare an informal document for the next session containing maps showing the change signal maps and combining such with the present risk maps for the base period so as to indicate potential higher risk areas and their spatial shifts in the future as well as providing a brief analysis. This document should also briefly elaborate on the methodology used for the identification of the potential higher risk areas.

19. The secretariat was also requested to contact the Joint Research Centre (JRC) of the European Commission to discuss its global flooding projections data for possible use in the WP.5/GE.3 final report. Also, sea level rise data should be discussed with JRC and used in the report for assessing impacts on maritime ports.

20. WP.5/GE.3 discussed then the Informal document No. 16 containing the analysis of responses to the 2016 climate change adaptation questionnaire. WP.5/GE.3 agreed that figures analyzing responses to 15 questions (shown in absolute numbers) should be annexed to the final report. In addition, specific information collected through the questionnaires should be cross-referenced as appropriate in the relevant sections of the final report.

21. Finally, WP.5/GE.3 requested the secretariat to compile all the available inputs and to table a draft final report for considering possible gaps and agreeing on necessary additions at the seventeenth session.

## **VI. Other business (agenda item 5)**

22. In view of the unique nature of work of WP.5/GE.3 among the different United Nations bodies, and considering the continuation of this highly specialized work, the secretariat presented a project proposal to the experts for their consideration. The main objectives of the project was to strengthen the secretariat with an expert on climate change adaptation in transport and to ensure funding for operational expenses in the third phase of work which should focus, among others, on working with countries to create awareness of the issues, to implement the framework methodology, and to participate in global fora with the aim to promote WP.5/GE.3 work. To initiate the project, the secretariat would address governments to consider:

(a) To second a senior expert (in-kind contribution) to ECE secretariat for a period of maximum three years to support the work on climate change adaption in transport; and

(b) To offer funding of some \$ 25,000 per annum to cover operational expenses related to the secondment (including office and travelling expenses) and facilitating the hands-on work with countries on the framework methodology and the promotion of WP.5/GE.3 work.

23. The secretariat hoped that governments would respond positively to the secretariat's appeal and would support the project. WP.5/GE.3 took note of this information.

## **VII. Date and place of next meeting (agenda item 6)**

24. WP.5/GE.3 was informed that its seventeenth meeting was scheduled to be held in Geneva on 24 and 25 April 2019. The eighteenth and last meeting within the existing mandate will take place on 6 and 7 June 2019.

## **VIII. Summary of main decisions (agenda item 7)**

25. The Chair with support of the secretariat summarized the main decisions taken at the sixteenth session.

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