United Nations ECE/TRANS/WP.5/GE.3/40

Economic and Social Council

Distr.: General
18 May 2021

Original: English

Economic Commission for Europe

Inland Transport Committee

Working Party on Transport Trends and Economics

Group of Experts on Assessment of Climate Change Impacts and Adaptation for Inland Transport

Twentieth session
Geneva, 22 and 23 April 2021

Report of the Group of Experts on Assessment of Climate Change Impacts and Adaptation for Inland Transport at its twentieth session

Contents

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I. Attendance

1. The Group of Experts on Assessment of Climate Change Impacts and Adaptation for Inland Transport (hereafter called GE.3) held its twentieth session (second session under its new mandate) on 22 and 23 April 2021. The session was chaired by Ms. S. Haensel (Germany) and Ms. E Smalley (Canada) and held as a hybrid meeting with virtual participation through webex and in-person participation. It was held in English only due to capacity constraints in providing interpretation service by the Conference Services of the United Nations Office in Geneva.

2. Representatives of the following United Nations Economic Commission for Europe (ECE) member States participated: Canada, Denmark, France, Germany, Iceland, Ireland, Netherlands, Poland, Portugal, Russian Federation and Turkey. Expert from the European Commission (EC) also attended.

3. The following United Nations organization and specialized agency was represented: United Nations Conference on Trade and Development (UNCTAD).

4. The following non-governmental organizations were represented: International Union of Railways (UIC) and World Road Association (PIARC).

5. At the invitation of the secretariat, experts from the following organizations participated: Banedanmark, Climate Sense, Climate Service Centre Germany, Council for International Investment Promotion of China, Deltares, Federal Autonomous Institute ROSDORNII, PKP Polish Railway Lines (PKP PLK), and University of the Aegean, University of Birmingham and University School for Advanced Studies (IUSS) of Pavia.

II. Adoption of the agenda (agenda item 1)

Documentation: ECE/TRANS/WP.5/GE.3/39

6. The Group of Experts on Assessment of Climate Change Impacts and Adaptation for Inland Transport (GE.3) adopted its agenda as contained in ECE/TRANS/WP.5/GE.3/39.

III. Initiatives in climate change impact assessment and adaptation for inland transport (agenda item 2)

Documentation: Informal document WP.5/GE.3 (2021) No.1, Informal document WP.5/GE.3 (2021) No.4

7. GE.3 continued its discussion on initiatives in climate change impact assessment and adaptation for inland transport with a view to understand if any new approaches, tools and/or methodologies exists or are developed that could be integrated by GE.3 in its work. In particular GE.3 considered (a) the Railadapt project of the International Union of Railways' (UIC) and other UIC initiatives for climate change impact assessment and adaptation for railways, (b) the International Organization for Standardization (ISO) 14090 framework (presented by Climate Sense), (c) a methodology used in Germany to assess the impact of extreme events on traffic streams, (d) the draft European Union strategy on adaptation to climate change (Forging a climate-resilient Europe), and (e) the European Flood Awareness System (EFAS) and a new system in development for coastal flooding awareness (ECFAS).

8. GE.3 appreciated the information shared respectively by representative of UIC, Climate Sense, Germany, European Commission, University School for Advanced Studies IUSS in Pavia.

9. University of Aegean presented Informal document WP.5/GE.3 (2021) No.1 discussing the most updated state of knowledge on the evolution of the potential hazards for inland transportation under Climate Variability and Change. University of Aegean also referred to Informal document WP.5/GE.3 (2021) No.4 presenting list of case studies on methodologies for assessing climate hazards at different spatio-temporal scales, and available online tools.

10. Following the presentations and ensued discussion, GE.3 requested the secretariat to work together with UIC to explore possibilities for collaboration on a project for carrying out vulnerability analysis to climate change and extreme weather of a selected railway line forming an important railway corridor for Euro-Asian freight traffic.

11. GE.3 also agreed it would explore whether and how available transport planning systems could be recommended to national transport professionals for use to perform stress tests at selected section of networks to extreme weather events. The aim of this work would be to provide guidance or recommendations on countries less advanced in climate change adaptation on approaches to performing stress tests and build their understanding, strengthen knowledge as well as develop local business cases for transport climate change adaptation.

12. GE.3 further agreed that information on economic losses (direct and as far as possible, also indirect) due to damages and disruptions caused by extreme weather events should be collected. Such information would serve as a groundwork to support the development of business cases for transportation adaptation initiatives or projects. When collecting such information, collaboration and partnership opportunities should be seized, among others with ECFAS project, which inter alia is to create a better understanding on cost indicators for direct economic damages from coastal flooding. GE.3 invited the secretariat to form a small group of volunteers to work on this task.

13. GE.3 also requested the secretariat to invite representatives of World Association for Waterborne Transport Infrastructure (PIANC) and Eurocontrol to make presentations at the next session. GE.3 would be interested in PIANC adaptation guidelines for inland waterways and the PIANC survey results, including information economic losses in ports as result of extreme weather events. GE.3 would appreciate to obtain information on risk assessment and adaptation planning for aviation organisations and a good insight into Eurocontrol's report on climate change risk for European aviation with focus on aviation installations on the ground.

14. Finally, GE.3 agreed that it would discuss, starting from its next session, on how the developed and presented material be integrated and consolidated in the future outputs, including potential case studies for a final report.

IV. Climate change and transport assets data (agenda item 3)

Documentation: ECE/TRANS/WP.5/GE.3/2021/1, Informal document WP.5/GE.3 (2021) No.2

15. GE.3 had decided at its previous session to construct and disseminate a simple survey for consulting transport infrastructure managers on climate change impacts of most interest to them as well as on impact-relevant thresholds of climate indices. To this end, experts from Canada, Germany and Climate Service Germany supported by the secretariat had developed and presented a simple survey as contained ECE/TRANS/WP.5/GE.3/2021/1. They also had analyzed the responses to the survey received from more than 60 respondents prior to the session. The results of this analysis are summarized in Informal document WP.5/GE.3 (2021) No.2.

16. GE.3 appreciated the work of the small group in preparing the simple survey and in analyzing the responses received. After a consideration, GE.3 requested the small group to prepare for and carry out interviews with some of the respondents who indicated interest in an interview, to further clarify and elaborate on the information received concerning thresholds. The University of Birmingham volunteered to support the small group with the interviews.

17. The small group should also make suggestions on which of the climate change impacts analysis should be performed at the ECE regional scale. In this regard, the small group should also explore further the climate change impact models listed in Informal document WP.5/GE.3 (2021) No.4, some of which were discussed under agenda item 4 as well as other additional report with data recently released.

V. National and sub-national projects on climate change impact assessment and transport asset adaptation needs (agenda item 4)

18. Experts from Canada, Ireland and the Netherlands made presentations at the current session on projects relevant to the work of GE.3. Canada presented its initiative on transportation assets risk assessment and shared experience learned from this initiative. Ireland informed about its project initiated in 2021 to assess criticalities of transport assets taking into account various dependencies and interdependencies. The Netherlands explained its methodology for carrying out stress tests for Dutch highway and railway systems, including on how the results are validated and how risk dialogues are performed. The Netherlands also presented recent advances in model-based assessment of flood damage to road networks. This presentation introduced a new method for climate change impact assessment – object-based modelling on the continental scale. It also discussed modelling of repair costs and costs of disrupted traffic.

19. GE.3 thanked the speakers for excellent presentations providing valuable input to the Group's work. Based on those inputs, GE.3 agreed to explore ways on how it could make climate change risk assessments and understanding of uncertainties more approachable to transport professionals. In this work, risk tolerance and ways for determining acceptable level of risks should be clarified. This would require that GE.3 links risks and costs of their mitigation to the costs of damage and disruption.

20. GE.3 also agreed that it should further discuss the issue of asset criticality with a view to assist development of business cases for adaptation work. This may include preparation of a guiding material for assessing asset criticality. In this context, GE.3 would be interested to be updated on progress made and results achieved in the Irish project.

21. GE.3 also recognized that various methods and methodologies are used across countries to assess future impact on transport systems from climate change. On the one hand, GE.3 agreed to further explore the models presented to clarify if and how they can be used for the planned climate change impact analysis for transport corridors. On the other hand, GE.3 concluded that it may be useful to systematize these various methods and methodologies, which should help transport community to use them more efficiently.

22. Finally, GE.3 welcomed the readiness from Poland and University of Birmingham to present at the next session the work done on assessing climate change impact and adaptation needs in urban areas (Poland) and about projects which studied economic losses and management of weather disruption to transport systems, among other from wind storms (University of Birmingham).

VI. Database on adaptation measures (agenda item 5)

23. Further to the request from the previous session, the secretariat presented a resource review on existing databases, more specifically on Climate-Adapt (https://climate-adapt.eea.europa.eu/#t-database), KomPass Tatenbank (www.umweltbundesamt.de/themen/klima-energie/klimafolgen-anpassung/werkzeuge-der-anpassung/tatenbank) and KLIVO Portal (www.klivoportal.de/DE/KliVo/klivo_node.html).

24. The World Road Association (PIARC) informed GE.3 about the work of its Technical Committee 1.4 on climate change and resilience of road networks with focus on adaptation responses and strategies. Germany presented its approach adopted in their research project to structuring adaptation measures. Finally, UNCTAD explained the data requirement sheets on transport assets/facilities developed and used as part of their technical assistance project (UNDA 1415O) on climate change impacts and adaptation for coastal transport infrastructure in Caribbean small island developing states (SIDSport-ClimateAdapt[1]).

[1] https://SIDSport-ClimateAdapt.unctad.org

25. GE.3 thanked the speakers for presenting interesting material which provides valuable input to the Group's work. In the discussion that ensued after the presentations, GE.3 recognized that various databases already exist, and they contain different type of knowledge and were established for different purposes. It further recognized that those various databases were not linked in any way, while doing so possibly through one gateway may provide significant added value.

26. GE.3 acknowledged the fact that profiles/fact sheets of transport assets and assessed adaptation needs for the assets to retain their initial functions may present an input required to create databases on asset specific adaptation measures. GE.3 agreed to explore demand for such asset profiles as well as assess the value of availability of such profiles.

27. GE.3 further agreed that a concept note be developed before the next session with considerations on what type of adaptation measures database would still bring added value, to whom such a database should be targeted, how it should be structured (construction/technical measures, infrastructure management measures, transport operation measures, regulations/standards measures, measures to increase awareness and provide necessary climate information) and which would be the requirements for its development and maintenance so that it could stay up-to-date over the long-term.

28. GE.3 requested the secretariat to work with experts who provisionally expressed interests in being involved in drawing up the concept note and, if possible, to prepare the note for the next session. When doing so, GE.3 requested the experts to consider various initiatives (and their outcomes) aimed at knowledge creation in this field. ISO 14090 standard framework could also be considered in this work.

VII. Guidelines for integrating climate change considerations in planning and operational processes (agenda item 6)

Documentation: ECE/TRANS/WP.5/GE.3/2021/2, Informal document WP.5/GE.3 (2021) No.3

29. GE.3 had agreed at its previous session to hold workshops during which users of the future guidelines for integrating climate change adaptation considerations in transport planning and operational processes, in particular policy makers on the one hand, and planning and operational staff on the other hand, could be consulted on their needs.

30. A small group of experts from Ireland, Germany, Netherlands and UNCTAD with support of the chairs and the secretariat had organized the first workshop on 26 March 2021, based on the concept presented in ECE/TRANS/WP.5/GE.3/2021/2. These experts reported then on the workshop and its results as contained in Informal document WP.5/GE.3 (2021) No.3.

31. GE.3 appreciated the work of the small group and congratulated the group on a successful workshop with strong outcomes. Taking into account the outcomes, GE.3 invited the small group supported by the secretariat to prepare and hold further workshops with the aim to raise awareness on the importance of adaptation of transport systems to climate change. Such workshops should in particular be organized for transport professionals in countries from South-Eastern and Eastern Europe, Caucasus and Central Asia as well as other interested countries outside of the ECE region.

32. GE.3 further recommended that the future workshops offer the opportunity to discuss the assessed needs for the guidelines.

33. GE.3 agreed then that more information also from projects led by other entities be considered before drafting of any guidelines would begin.

34. Finally, GE.3 encouraged strengthening the small group by inviting two-three more experts to join the group.

VIII. Other business (agenda item 7)

35. GE.3 had considered at its previous session Informal document WP.5/GE.3 (2020) No. 2 presented by the secretariat on the establishment of a funding project (GE.3 fund) in support of its activities. At the current session progress was reported in exploring further funding opportunities, however, no pledges could be confirmed.

36. The secretariat thanked then experts, especially those profoundly involved in the intersessional work, for their efforts, which constitute in-kind contribution to the work of GE.3.

IX. Date and place of next meeting (agenda item 8)

37. The secretariat informed GE.3 about the scheduled date for its twenty first session on 2 and 3 September 2021.

X. Summary of main decisions (agenda item 9)

38. The secretariat summarized the decisions taken by GE.3. The full report of the session, prepared by the secretariat in consultation with the Chair and Vice-Chairs, would be shared electronically after the session for adoption.