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SUBMISSION BY IRELAND AND THE EUROPEAN COMMISSION ON BEHALF OF THE EUROPEAN UNION AND ITS MEMBER STATES

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Subject: Research and Systematic Observation

1. Introduction and General Comments

The European Union and its 27 Member States (EU) consider that the Research Dialogue has been a highly effective vehicle for facilitating dialogue between research programmes and policy makers. Successful dialogue sessions since SBSTA 28 have allowed research organisations to update policy makers on developments, and for policy makers to communicate their views on Research priorities to those organisations. Research workshops provide an opportunity for more in-depth consideration of these issues. The EU appreciated the active participation of regional and international climate change research programmes and organisations in the Dialogue and thanks these organisations for their useful contributions to date.

2. The Research Dialogue at SBSTA 38

The EU welcomes the conclusions of SBSTA at its thirty-seventh sessions and the view that "the technical and scientific aspects of emissions by sources, removals by sinks, and reservoirs of all greenhouse gases, including emissions and removals from terrestrial ecosystems such as steppe, savannah, tundra and peatlands, with a view to identifying and quantifying the impact of human activities" would be a useful theme of the next dialogue.

The SBSTA also invited Parties to submit their views on the research dialogue. In this context the EU wishes to note the importance of terrestrial ecosystems and the importance of understanding and quantifying human impacts on these. The EU considers that the potential

roles of such ecosystems in achieving the shared goal of insuring the global temperature increase is kept below 2 degree Celsius, relative to pre-industrial temperatures (the 2C objective), needs to be better understood. It also recognises that considerable uncertainties and gaps exist in this area of research and that significant further effort is required including to prioritise actions to reduce relevant uncertainties and bridge gaps in knowledge. This includes increased efforts for the deployment of required systematic observation systems.

The EU considers that analyses of terrestrial ecosystems is essential to analysis of future emissions pathways consistent with the 2C objective, as well as analysis of future climate change impacts on major carbon pools in biomass and soils. This requires

- Assessment of major terrestrial ecosystems including the size, nature and climate vulnerability of their associated carbon pools
- Knowledge of the dynamics of the cycles and processes, including management systems, that maintain their vitality and the factors which regulate their stability
- Solutions in relation to management of ecosystems to maintain or enhance their mitigation contributions or to reduce their vulnerability to climate change impacts via adaptation as well as synergies/co-benefits between these activities

The EU would therefore welcome updates on

- Current research on quantification of carbon pools in terrestrial ecosystems, on-going changes in these pools, as well as research on the carbon, and other, cycles that impact on ecosystem-based GHG emissions and removals
- The development and deployment of systems used to monitor and assess changes in ecosystem at various resolutions and levels
- Approaches to inclusion of data and analysis of carbon in terrestrial ecosystems into Earth system models and appreciation of climate-carbon feedback in emission pathways
- Approaches to assess the challenges faced by these systems under future climate conditions and implications to the mitigation challenges, and on how vulnerabilities may be identified and addressed

- Information on adaptation measures for terrestrial ecosystems and the limitations of these as well as their potential co-benefits for mitigation
- Ways to reduce key uncertainties and bridge knowledge gaps in relation to vulnerability of terrestrial ecosystems and potential feedbacks e.g. those associated with permafrost dynamics and consequential potentials for GHG releases.

The EU also recognised that the dynamic of carbon exchanges between terrestrial, ocean and atmospheric reservoirs is determined by a range of factors and that decreased efficiency and potential saturation of ocean or terrestrial sinks would have significant consequences for atmospheric concentrations of carbon dioxide and therefore for future climate. Aspects of these for ocean regions may be further explored in a future Research Workshop. Thus the EU would also welcome updates of analysis of projections of future capacity of major reservoirs and saturation issues for terrestrial ecosystems.

Conclusion

The EU looks forward to an active Dialogue process on this theme during SBSTA 38. It considers that the Dialogue should allow Parties to gain a greater understanding of the extent and nature of carbon stocks in terrestrial ecosystems; their contributions as sinks for GHG and the vulnerability of their carbon stocks. These are key issues for achievement of the 2C objective. In this context it is important that work and systems to provide more accurate quantification of such sources and sinks and their variability at various timescales are outlined, and that the dialogue should aim to identify mitigation and adaptation solutions and the synergies between these.