Question 9/5 – Climate change and assessment of digital technologies in the framework of the Sustainable Development Goals (SDGs) and the Paris Agreement

(Continuation of Question 9/5)

1   Motivation

Question 9/5 aims to develop assessment methodologies and guidance that allow the objective, transparent and practical assessments of the sustainability impacts of digital technologies, including information and communication technologies (ICTs), artificial intelligence, 5G, etc., in order to align their developmental trajectories with the Paris Agreement and the United Nations Sustainable Development Agenda.

Also taking into account the importance of climate change and biodiversity challenges as stressed by the IPCC 1.5-degree Special Report and the IPBES May 2019 Report on the severity of biodiversity loss and damages, Question 9/5 intends to particularly focus on these two topics as well.

The ICT sector has the responsibility to limit its own life-cycle impacts on climate change, biodiversity, and other environmental aspects. In parallel, the ICT sector can contribute to changing the current unsustainable consumption and production patterns, strengthening scientific, technological, innovative capacities, and supporting the implementation of the latest technologies, which demonstrated to be sustainable.

Moreover, the ICT sector has a unique opportunity to shape behaviours in a more sustainable direction by accelerating climate change adaptation and mitigation actions and other sustainability improvement ICTs are providing technologies that enhance the developments of climate models including emission trends.

This Question also aims to study how environmental assessments may be used in the frame of broader sustainable development assessments including economic, environmental, and social assessments.

The Question is also in line with the Sustainable Development Goals: SDG 9 "Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation"; SDG 11 "Make cities and human settlement inclusive, safe, resilient and sustainable" and SDG 13 "Take urgent action to combat climate change and its impact".

The following Recommendations and Supplements, in force at the time of approval of this Question, fall under its responsibility:

–   ITU-T L.1400, L.1410, L.1420, L.1430, L.1440, L.1450, L.1451, L.1460, L.1470, L.1471;

–   L-series Supplements 2, 3, 13, 26, 34, 37 and 38.

2   Questions

Study items to be considered include, but are not limited to:

–   Examine how to assess the sustainability impacts of digital technologies, including artificial intelligence, IoT, 5G, etc., at different levels – including rebound effects;

–   Develop and provide detailed guidance on assessing the benefits brought by ICT goods, networks, and services in decarbonizing other economic sectors;

–   Examine how to assess the sustainability benefits offered by ICT resilience services (teleworking, telemedicine, early warning systems) in the context of sanitary and other crises;

–   Develop Recommendations and guidelines in the frame of Sustainable Development Goals (SDGs) and the Paris Agreement to support climate change adaptation and mitigation actions, reach IPBES Biodiversity objectives, etc., stay within the planetary boundaries[1];

–   Develop and update GHG emissions trajectories for at least 2025, 2030 and 2050 for the ICT sector, sub-sectors and organisations and provide targets guidance;

–   Provide guidance and assistance for the regular, possibly yearly, assessment of the lifecycle GHG emissions of the ICT sector and sub-sectors worldwide;

–   Develop and provide detailed guidance on recommended actions to follow in order to reach the 1.5°C trajectories described in Recommendation ITU-T L.1470, in collaboration with the relevant stakeholder;

–   Explore how environmental assessments methodologies may be used in the frame of broader sustainable developments assessments including economic, environmental and social assessments;

–   Establish a fact base regarding ICT in the frame of TCFD, regional taxonomies and similar initiatives from international organisations, governments, finance, and insurance sectors and develop guidance on how ICT actors can respond;

–   Provide guidance towards end-users on the way for them to use ICT services in order to limit the GHG emissions resulting from these ICT services, while experiencing a similar or improved performance.

3   Tasks

Tasks include, but are not limited to:

–   Develop Recommendations, Supplements and/or Technical Reports on GHG emissions trajectories for at least 2025, 2030 and 2050 for the ICT sector, sub-sectors and organisations and provide targets guidance;

–   Develop Recommendations on the methodologies to assess the positive environmental effects of digital technologies (including ICTs, AI, etc) in other sectors of the economy;

–   Develop Recommendations, Supplements and/or Technical Reports on the assessment of the benefits brought by ICT services in decarbonizing other economic sectors;

–   Develop Recommendations, Supplements and/or Technical Reports on the methodology for the assessment of the environmental impacts of digital technologies at country/sector level in line with the adoption of the UNFCCC Paris agreement;

–   Develop Recommendations, Supplements and/or Technical Reports for the regular, possibly yearly, assessment of the lifecycle GHG emissions of the ICT sector and sub-sectors worldwide;

–   Develop Recommendations, Supplements and/or Technical Reports on recommended actions to follow in order to reach the 1,5°C trajectories described in ITU-T L.1470, in collaboration with the relevant stakeholder;

–   Develop Recommendations, Supplements and/or Technical Reports to assess the sustainability impacts of digital technologies at different levels (country, city, communities, industry, etc), taking into account the Sustainable Development Goals (Paris Agreement, etc.) as applicable;

–   Develop Recommendations, Supplements and/or Technical Reports to provide guidance on the ICT related assessment of environmental impacts such as biodiversity loss, ecosystems

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[1] Planetary boundaries refer to global boundaries of nine processes that regulates the Earth systems stability and resilience. These boundaries consider stratospheric ozone depletion, loss of biosphere integrity (biodiversity loss and extinctions, chemical pollution and the release of novel entities, climate change, ocean acidification, freshwater consumption and the global hydrological cycle, land system change, nitrogen and phosphorous flows to the biosphere and oceans and atmospheric aerosol loading.

services impact, abiotic resources depletion, water eutrophication and soil contamination as applicable;

– Develop Recommendations, Supplements and/or Technical Reports on a fact base regarding ICT in the frame of TCFD, regional taxonomies and similar initiatives from international organisations, governments, finance, and insurance sectors and develop Recommendations, Supplements and/or Technical Reports on how ICT actors can respond;

– Develop Recommendations, Supplements and/or Technical Reports on the way for end-users to use ICT services in order to limit the GHG emissions resulting from these ICT services, while experiencing a similar or improved performance;

– Revise existing Recommendations related to the assessment of the environmental impact of ICT as required, based on the practical experience of the methodologies gained by ITU-T Members, and taking into account developments in other forums and SDOs;

– Maintain and revise existing Recommendations and other deliverables as needed.

An up-to-date status of work under this Question is contained in the ITU-T SG5 work programme (https://www.itu.int/ITU-T/workprog/wp_search.aspx?sp=17&q=9/5).

4 Relationships

WSIS Action Lines:

– C2, C7

Sustainable Development Goals:

– 7, 11, 13

Recommendations:

– L-series

Questions:

– Q6/5, Q7/5, Q11/5, Q12/5, Q13/5

Study Groups:

– ITU-T SGs 9, 13, 15, 16 and 20

– ITU-D

– ITU-R

Other bodies:

– ISO

– IEC

– ETSI

– UNFCCC

– IPCC

– UNIDO

– UNECE

– UNEP

– WEF

– WBCSD

– WRI

– ULE

- CDP
- WMO
- ICC
- IEA
- GeSi
- SBTi
- IPBES
- UICN
- FutureEarth
- Business for Nature