



14th Symposium on ICT, Environment, Climate Change and Circular Economy

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Action for biodiversity: Context and ITU-T SG5 work

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An urgent call to action !

Approximately 70% of animals (wild vertebrates, such as mammals, fishes, birds, amphibians, reptiles) have disappeared (in number of animals) between 1970 and 2018.

The United Nations has warned that one million species are in danger of extinction !



An international framework with the United Nations Convention on Biological Diversity (CBD)



- The Convention on Biological Diversity was established in 1992 under the auspices of the United Nations with three objectives:
 - Conservation of biological diversity
 - Sustainable use of biological diversity
 - Fair and equitable sharing of benefits arising from the use of genetic resources.
- 196 parties to date that meet every two years at COPs to review progress, establish priorities, and decide on work plans.
- In this context, the next COP, COP 15, to take place in December 2022 in Montreal, Canada, will review the outcomes of the CBD Strategic Plan for Biodiversity 2011-2020 and should define a roadmap for beyond 2020



SBT for Nature

- The Science Based Targets Network (SBTN) is a collaboration of leading global non-profits and mission driven organizations working together to equip companies as well as cities with the guidance to set science-based targets for all of Earth's systems
- In this frame, The Science Based Targets for Nature initiative, intends to help organisations to set targets related to terrestrial, freshwater and maritime/ocean biodiversity
- A guidance for organisations is expected to be released during the first semester of 2023



SCIENCE BASED TARGETS NETWORK
GLOBAL COMMONS ALLIANCE

ITU-T Study Group 5 and biodiversity

Biodiversity is included in the new mandate of SG5

Two work items have been launched:

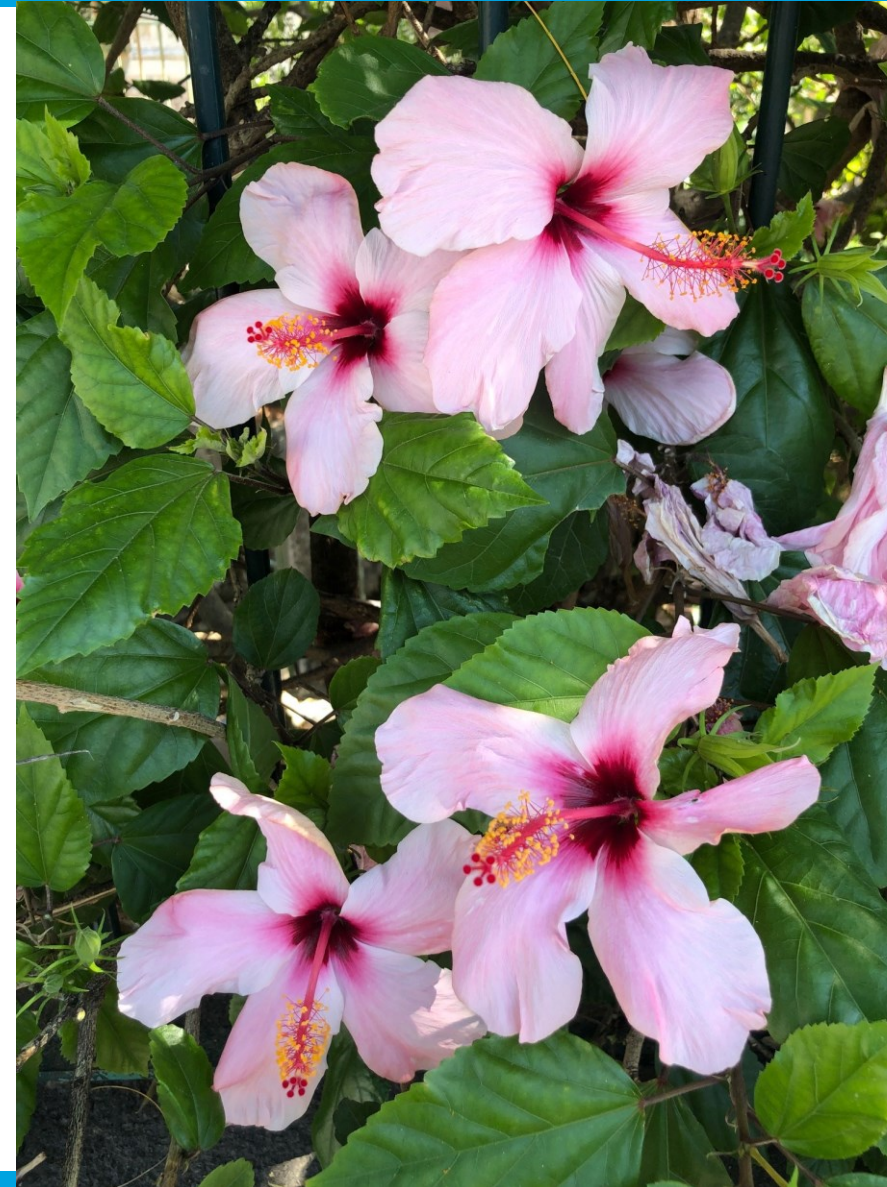
Methodology for the assessment of the footprint of an ICT organization on biodiversity

Targeted consent : end of 2023

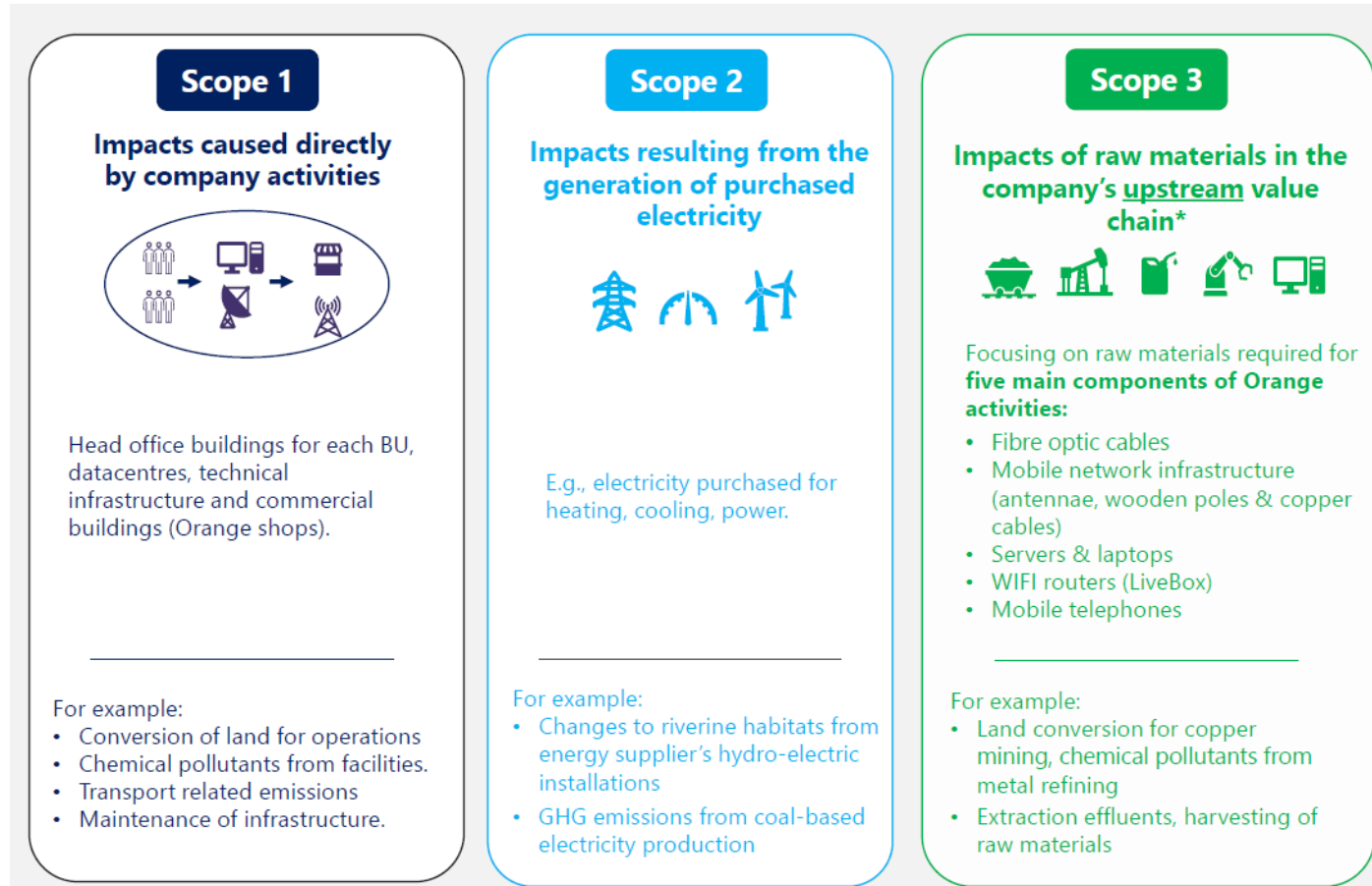
Development of guidance on how to assess the second order effects of ICT solutions on biodiversity, including positive effects

Targeted consent : end of 2023

Contributions are welcome !



Like for climate, assessment can be performed on 3 scopes



Source : The Biodiversity Consultancy for Orange

**Thank
you !**



Annexes



Example of upstream stakes

Pollution from key raw materials: Copper extraction



Context of Copper mining

- Copper occurs in nature in the form of sulphide and oxide ores and as native copper. It is the second most used non-ferrous metal in industry.
- Copper extraction is a multi-phase process, that involves mining, crushing, ore concentration, smelting, refining and waste management.



Main Pollutants

- Main pollutants from copper extraction is acid mine drainage and associated heavy metals.
- Extraction generates effluent, slag/tailings, dust and aerosols as by-products, which are contaminated with toxic heavy metals such as As, Cd, Hg and Pb.
- Large volumes of SO₂ discharged in the atmosphere.
- Pollution affects air quality and water.



Impacts on Biodiversity

- **Air Pollution:** Use of sulphuric acid in leaching of oxide ores, releases SO₂ and when it rains it forms acid rain which harm trees, crops, and buildings.
- **Water Pollution:** Slag/ tailings and other landfill waste including acid mine drainage leach toxic, acidic substances including heavy metals into terrestrial and aquatic environments.
- In aquatic environments, these cause species loss through poisoning as some species are sensitive high quantities heavy metals. Heavy metals also impact species reproduction and growth.

Source : The Biodiversity Consultancy for Orange

Example of upstream stakes

Pollution from key raw materials: Gold extraction



Context of Gold mining

- Mining, mineral processing and metallurgical extraction are the three principal activities of gold mining which produce large quantities of wastes.
- Gold mining operations can be surface opencast or underground mines and tend to cover wide areas and thus can inflict environmental damage over a geographically wide area.



Main Pollutants

- Pollution from gold mines is associated mainly with the release of harmful elements from tailings and other mining waste.
- **Acid mine drainage** is the major form of pollutant from gold mining - the infiltration of water through sulphide-containing tailings piles and ponds, surface and underground workings, and other waste leads to leaching of large volumes of heavy metals and seepage of acidic water into streams.
- Other pollutants from gold extraction process include:
 - **Cyanide.** A sodium cyanide solution is commonly used in extraction of gold from ore., resulting in hydrogen cyanide emissions.
 - **Mercury** - is also used in extraction and releases a toxic vapor. Mercury is mainly used by artisanal and small-scale gold mining.



Impacts on Biodiversity

- **Acid mine drainage** causes acidic water and heavy metals to into terrestrial and aquatic environments.
- Heavy metals are known to play a vital role in metabolic and physiological processes of plants, animals and macroorganisms
- The non-essential HM like Ag, As, Cd, Pb and Hg are of no biological importance to living organisms and are very toxic when found in the ecosystems (Fashola, *et al.*, 2016).
- **Air pollution** from hydrogen cyanide and mercury from smelting process leads to health issues including headaches, nausea and renal failure
- **Cyanide and mercury** from contaminated ponds/tailings may result in major fish mortalities, contaminated drinking water supplies and harmed agricultural lands.

Source : The Biodiversity Consultancy for Orange