

Mitigation of Climate Change and Earth Observation

Inge Jonckheere
FAO (NFO)

Living Planet Symposium 2022- Bonn



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INTERGOVERNMENTAL PANEL ON climate change

Climate Change 2022

Mitigation of Climate Change



WGIII

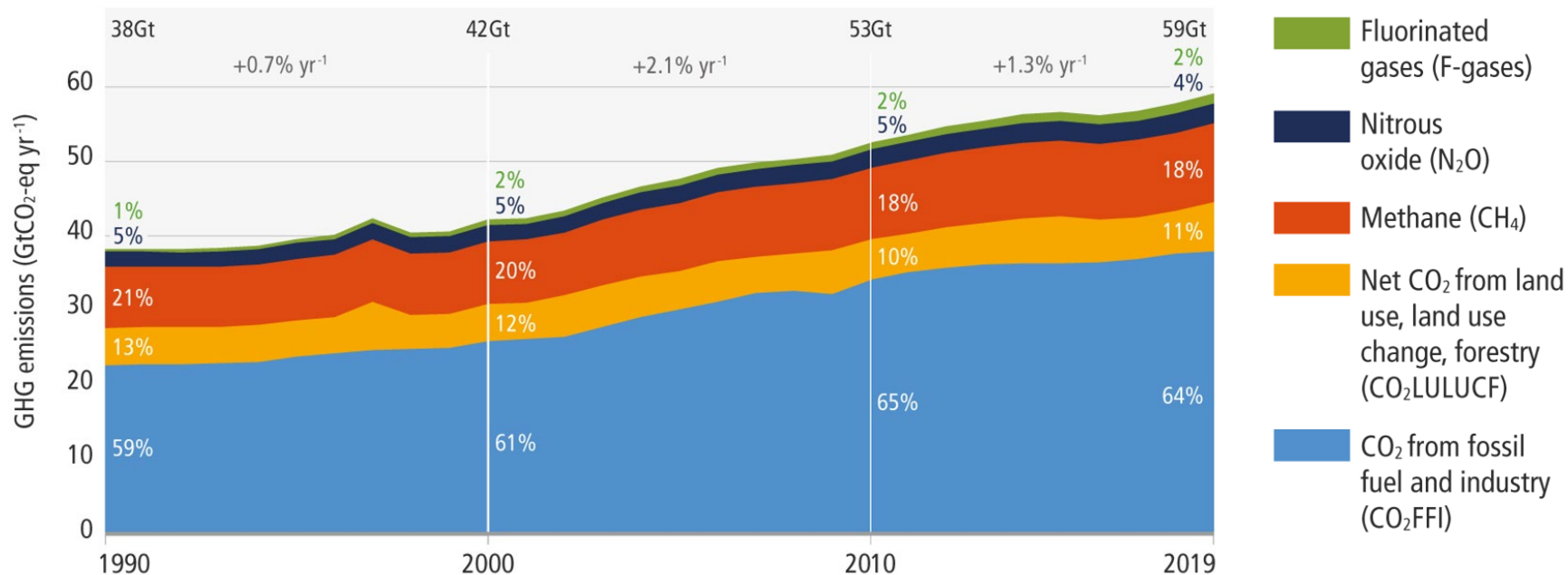
Working Group III contribution to the
Sixth Assessment Report of the
Intergovernmental Panel on Climate Change



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**2010-2019:
Average annual
greenhouse gas
emissions at
highest levels in
human history**

We are not on track to limit warming to 1.5 °C.



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...but there is
increased evidence of
climate action



Increased evidence of climate action



Some countries have achieved a **steady decrease** in emissions **consistent** with limiting warming to **2°C**.

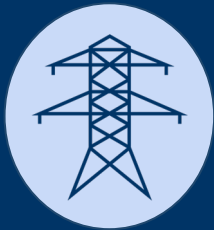


Zero emissions targets have been adopted by at least **826 cities** and **103 regions**

There are options available **now** in every sector that can at least **halve** emissions by 2030



Demand and services



Energy



Land use



Industry



Urban



Buildings



Transport

Land use

- can provide large-scale emissions reductions **and** remove and store CO₂ at scale
- protecting and restoring **natural ecosystems** to remove carbon: forests, peatlands, coastal wetlands, savannas and grasslands
- competing demands have to be **carefully managed**
- **cannot compensate** for **delayed** emission **reductions** in other sectors



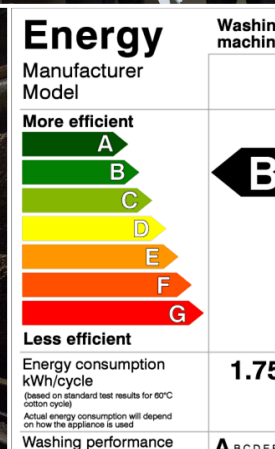
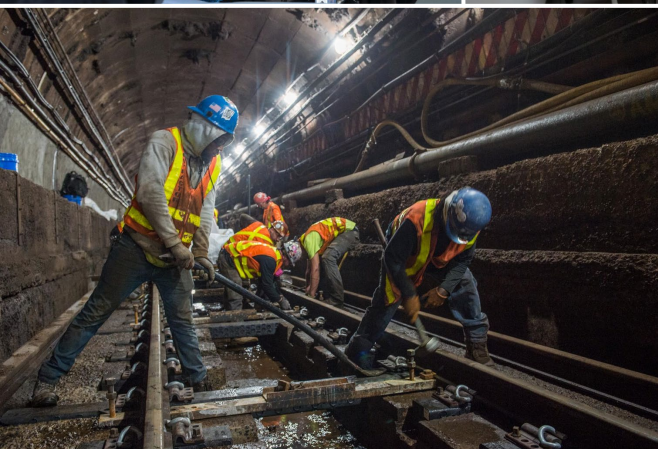
Closing investment gaps

- financial flows: **3-6x lower** than levels needed **by 2030** to limit warming to below 1.5°C or 2°C
- there is **sufficient global capital** and liquidity to close investment gaps
- challenge of closing gaps is widest for developing countries

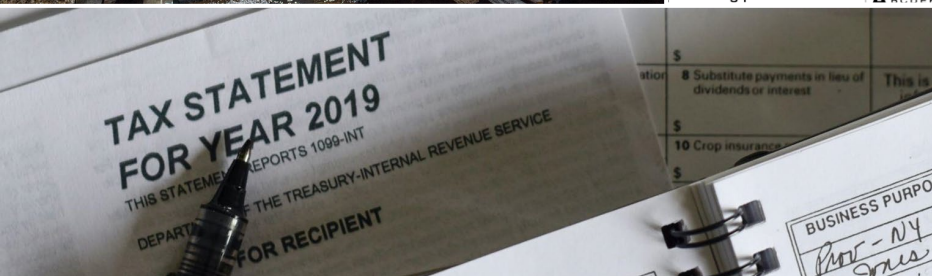




Policies, regulatory and economic instruments



- regulatory and economic instruments have **already proven effective** in reducing emissions
- **policy packages** and **economy-wide packages** are able to achieve **systemic change**
- ambitious and effective mitigation requires **coordination across government and society**

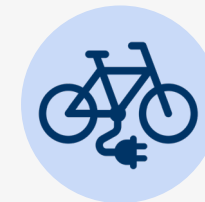
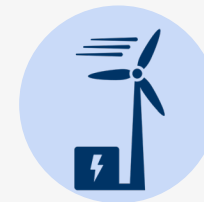


[World Bank/Simone D. McCourtie, Dominic Chavez CC BY-NC-ND 2.0, Trent Reeves/MTA Construction & Development CC BY 2.0, IMF Photo/Tamara Merino CC BY-NC-ND 2.0, Olga Delawrence/Unsplash.]

Technology and Innovation

- investment and policies **push forward low emissions** technological **innovation**
- **effective decision making** requires assessing potential benefits, barriers and risks
- **some options** are technically **viable**, rapidly becoming **cost-effective**, and have relatively **high public support**. Other options face barriers

Adoption of low-emission technologies is slower in most developing countries, particularly the least developed ones.



TAKE HOME MESSAGES and link with EO

-Options to reduce GHG emissions by about half of the 2019 level by 2030 are available at a cost of less than USD100 tCO₂-eq. Being the natural reduction option through afforestation/reforestation the cheapest option. There may be up-front costs associated with the different technologies or initiatives, but they can result in lower costs over a lifetime than the existing technologies or approaches (this has been the case for wind, solar and a range of efficiency options).

-Agriculture, forestry and other land use can not only provide large-scale GHG emissions reductions, but also absorb and store CO₂ at scale. Well-designed measures can benefit biodiversity, help us adapt to climate change, secure livelihoods, improve food security and wood supplies. Agroforestry, reforestation, avoiding deforestation, managing soils and sustainable livestock management can enhance productivity, improve livelihoods and provide renewable energy.

-Earth Observation with long data records and data over remote places can help in

- Validation of (climate and other) models
- Monitoring and early warning
- Process understanding
- Importance of free and open EO data

TAKE HOME MESSAGES (2)

- Positive impacts of certain **international and climate policies on reducing emissions** have been shown as for example deforestation, it argues that it is too early to say whether zero-deforestation pledges from the public and private sectors can be effective.

-- Achieving ambitious climate goals relies on **international cooperation**. Transnational partnerships are playing a growing role as technology, knowledge and experience are shared, also in Earth Observation and space technology

- Need for both **adaptation and mitigation**. (See also findings WG II on Adaptation and Vulnerability, published end of February 2022).

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“ The evidence is
clear:
The time for
action is now

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Thanks for your attention!

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@FAOForestry
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inge.Jonckheere@fao.org