



Swiss TPH



COVID-19 and climate change  
interlinkages: what we know and  
emerging questions

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# Swiss TPH, COVID-19, Climate Change

## Swiss TPH / University of Basel

- The largest Public Health Institute in Switzerland (#868 employees, 86 nations, 135 countries)
- Past, current, and future global health challenges, in Switzerland and worldwide
- Pandemics (**COVID-19**) in Switzerland and worldwide (21 related projects, 30 countries)
- Transdisciplinarity, One Health, Ecosystem Health, Health System Strengthening, **Climate change**, SDGs, ...



# This Presentation

1. What are the major planetary challenges?
2. What are the connections between COVID-19 and Climate Change?
3. What have been the responses to COVID-19?
4. What lessons are taken from the responses to COVID-19 that could be helpful for future Climate Action?



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## 1. Planetary challenges

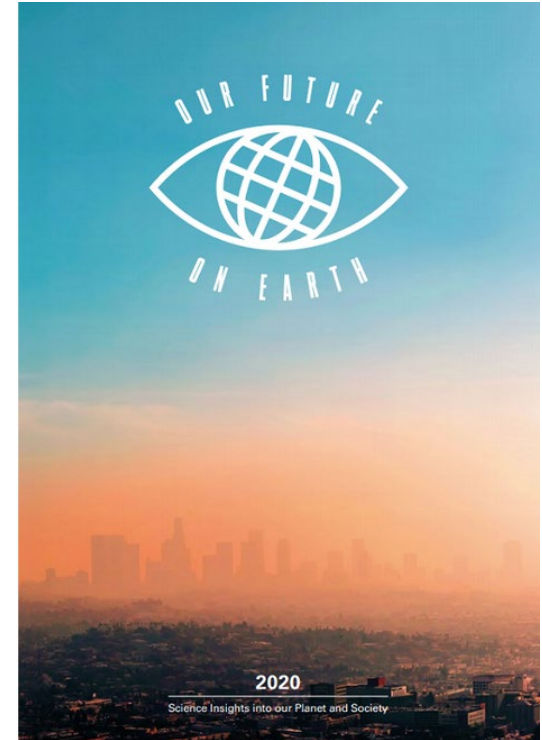
# 1. The most important risks to the planet?

The most severe **global risks** in terms of **impacts**

- **Climate change**
- Extreme weather
- Biodiversity loss and ecosystem collapse
- Food crisis
- Water crisis

The threat of **cascading** crises with one worsening another; ... risk of global systemic collapse

**Impacts: ... diseases, deaths, pandemics**



# 1. The most important risks to the planet?

- Natural habitat destruction
- **Climate crisis**
- Loss of Biodiversity
- Drowning in waste
- Water crisis
- Food crisis

... diseases, deaths, pandemics

... **human health impacts** from **disruptions of Earth's natural systems**

... **pandemics (COVID-19)**      **Climate change**












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*Review*

## Transdisciplinary Research Priorities for Human and Planetary Health in the Context of the 2030 Agenda for Sustainable Development

Kristie L. Ebi <sup>1,\*</sup>, Frances Harris <sup>2</sup>, Giles B. Sioen <sup>3,4</sup>, Chadia Wannous <sup>5</sup>, Assaf Anyamba <sup>6</sup>, Peng Bi <sup>7</sup>, Melanie Boeckmann <sup>8</sup>, Kathryn Bowen <sup>9,10,11</sup>, Guéladio Cissé <sup>12,13</sup>, Purnamita Dasgupta <sup>14</sup>, Gabriel O. Dida <sup>15,16</sup>, Alexandros Gasparatos <sup>17</sup>, Franz Gatzweiler <sup>18</sup>, Firouzeh Javadi <sup>19</sup>, Sakiko Kanbara <sup>20</sup>, Brama Kone <sup>21,22</sup>, Bruce Maycock <sup>23</sup>, Andy Morse <sup>24</sup>, Takahiro Murakami <sup>19</sup>, Adetoun Mustapha <sup>25</sup>, Montira Pongsiri <sup>26</sup>, Gerardo Suzán <sup>27</sup>, Chiho Watanabe <sup>4</sup> and Anthony Capon <sup>28</sup>

**Planetary Health!!!**



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## 2. Climate change and COVID-19 linkages

## 2. Climate change and COVID-19 interlinkages?

- Vast amount of research on climate change
- Climate change ... a problem for the entire planet
- Limited information on COVID-19
- COVID-19.... a pandemic, rapidly expanded planet
- They are both:
  - Huge in scale, with high death tolls
  - Important “shocks”, public “bads”
- The have both:
  - suffered from delayed, insufficient or mistaken actions
  - highest impacts on the most vulnerable people



PREVENTING THE NEXT PANDEMIC

Zoonotic diseases and how to break the chain of transmission

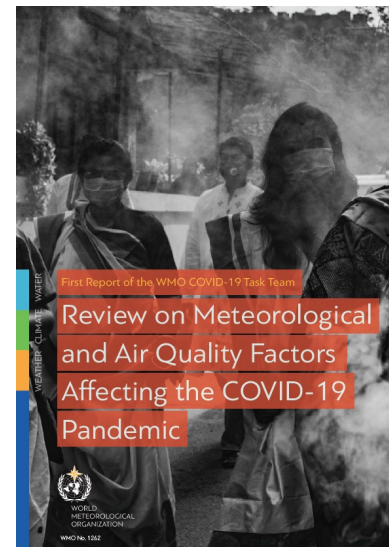


A Scientific Assessment with Key Messages for Policy-Makers  
A Special Volume of UNEP's Frontiers Report Series



## 2. Climate change and COVID-19 interlinkages?

- “... the virus survives longer under cold, dry and low ultraviolet radiation conditions”
- No evidence of a direct connection between climate change and the emergence or transmission of COVID-19 disease
- Key anthropogenic drivers : agricultural intensification, increased demand for animal protein, conversion of land and **climate change**
- Strong link between air pollution and higher rates of COVID-19-related deaths



Climate role on COVID-19 emergence: indirect, through major planetary disruptions affecting **human-animal-environmental health**



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### 3. Responses to COVID-19

### 3. Responses to COVID-19 ?

- Health authorities slow to recognize the gravity
- At least 150 millions diagnosed with COVID-19 (as of May 2021), hundred of thousands died
- Governments forced to strict lockdowns and massive financial investments
- Governments had, by August 2020, put in place short-term recovery measures estimated to cost at least US\$11.8tn or 8.7% of global GDP (World Bank, 2020)
- On average, government debt ratio to GDP would rise by almost 20 % by end-2022 for the OECD countries

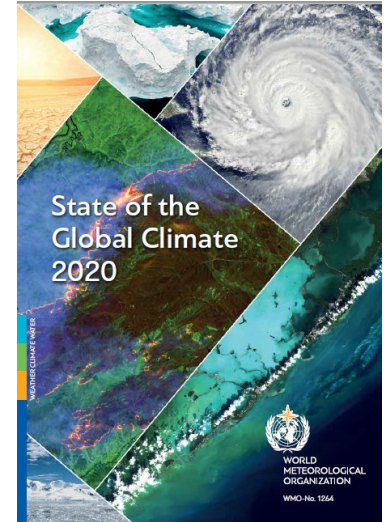
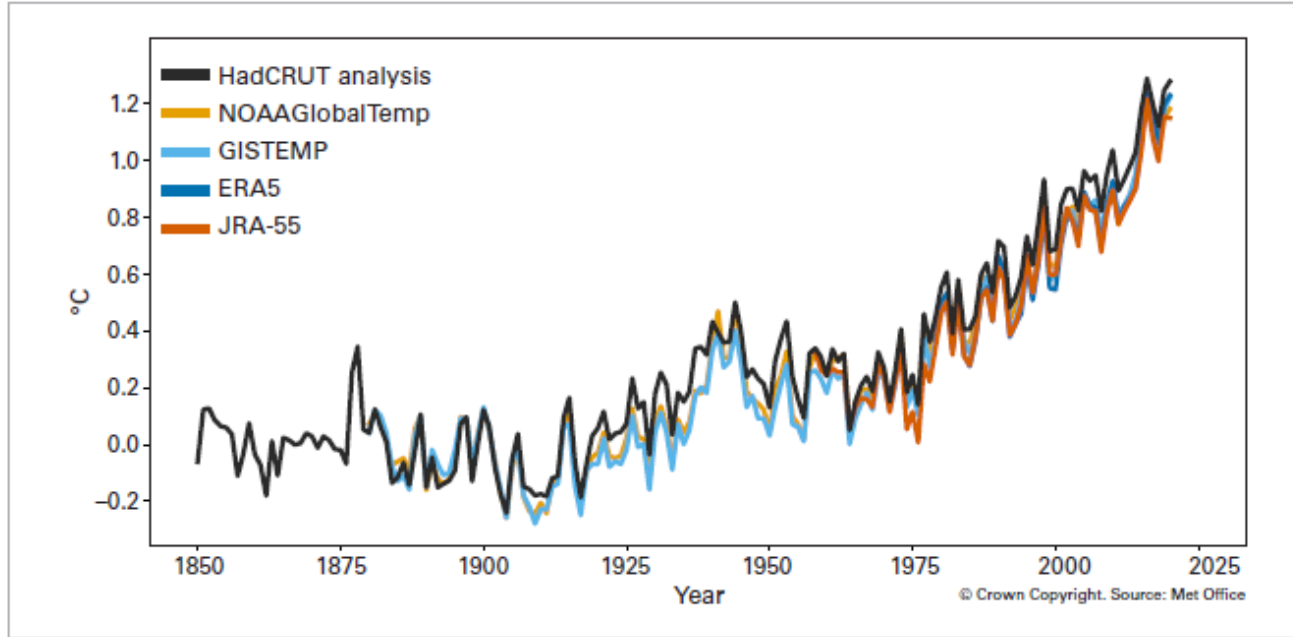


### 3. Responses to COVID-19... and climate change?

- Global carbon dioxide emissions dropped about 7% in 2020
- At end of restrictions and lockdowns, emissions returned to their normal climb
- 2011-2020: the warmest decade on record (WMO). The six warmest years have all been since 2015
- In 2020, the average global temperature is already about 1.2°C warmer than the preindustrial times
- There is at least a one in five chance of exceeding 1.5°C by 2024



### 3. Responses to COVID-19... and climate change ?



Global annual mean temperature difference from pre-industrial conditions (1850–1900) for five global temperature data sets



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## 4. Lessons for Climate Action from responses to COVID-19

## 4. Lessons from Responses to COVID-19?

- Increased belief in science in general (vaccins)
- Infectious diseases (COVID-19): **effects immediate** and hitting directly
- Climate change: slow motion, **effects less visible**, less concentrated
- Overlapping impacts : the two crises to be **tackled concurrently**
- UNFCC, National Determined Contributions (NDCs) COP26, to step forward with enhanced commitments, **COVID-19 and climate crisis in tandem**



## 4. Lessons from Responses to COVID-19?

- COVID-19 highlighted how vulnerable are all countries in an interconnected world, **even richest countries like Switzerland\***
- Climate crisis: major threat to the capacity for a good pandemic response (need **One Health**)\*
- Rapid and radical action is possible and humans can handle together a global crisis, **global cooperation, health systems** strengthening\*
- Global community able to move beyond sector-specific crisis reactions?



One Health







Thank you for your attention

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