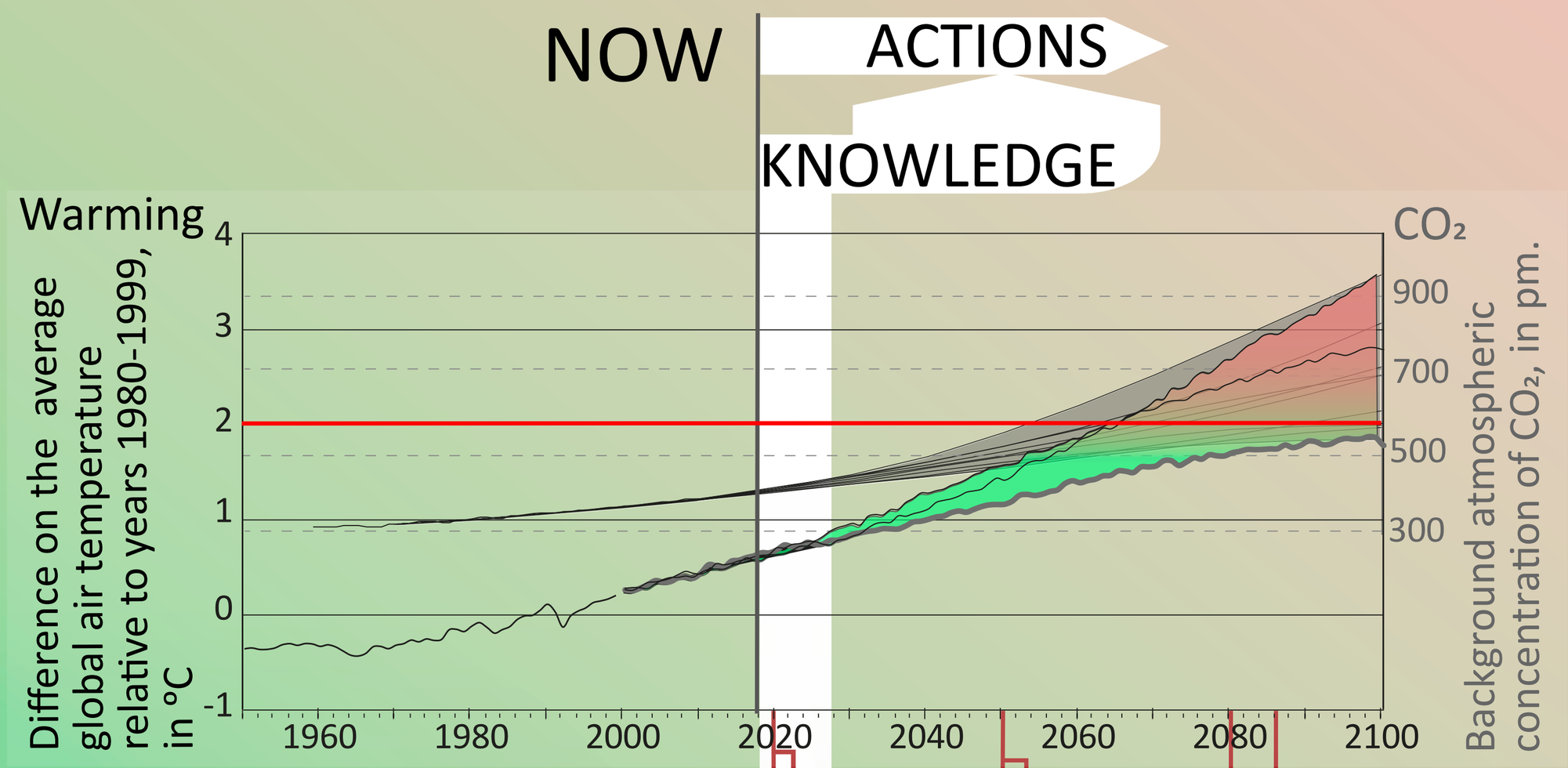
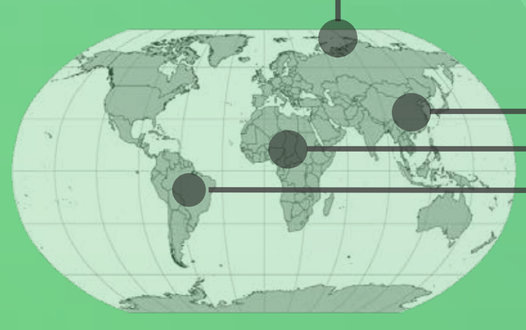
Based on Markku Kulmala´s comment in Nature 553, 21-23 (2018)

BUILD A GLOBAL EARTH OBSERVATORY

because





ARTIC+BOREAL

CITIES

AFRICA

S-AMERICA

75-250 M people exposed to water stress

50% decrease in rain-fed agriculture

Growing urban population compromises air quality

Decreased freshwater availability in large river basins

Replacement of tropical forest by savanna

Increase 5-8%arid lands

Sea level rise affects coastal areas with large populations

Large regions
with sparse observations.
Knowledge gap to be solved with
an integrated network,
extensive coverage and
exhaustive observations.

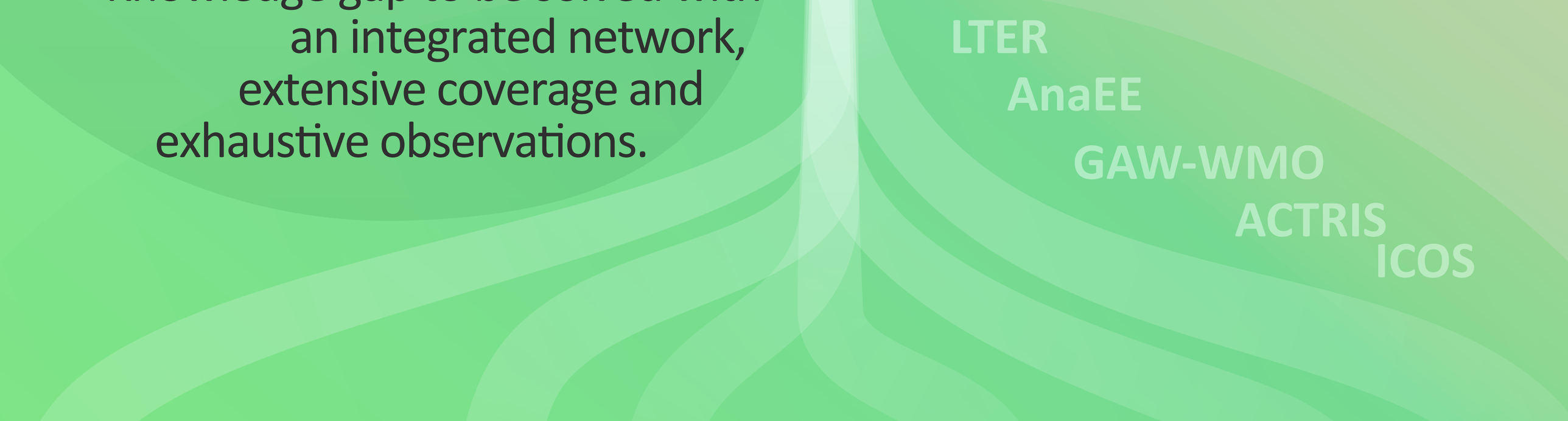
LTER

AnaEE

GAW-WMO

ACTRIS

ICOS



Cost

€ 10-20 M per station

€ 10-20 B per 1000 stations

compares with

€ 4-11 B, Large Hadron Collider

€ 10-20 B, Trump's wall

Data sources and details: past to current CO_2 concentration are Mauna Loa measurements as provided by Dr. Pieter Tans, NOAA/ESRL (www.esrl.noaa.gov/gmd/ccgg/trends/) and Dr. Ralph Keeling, Scripps Institution of Oceanography (scrippsco2.ucsd.edu/). Rest of data in the timeline is taken from IPCC data center (www.ipcc-data.org). Warming is expressed in ºC as the multi-model average of detrended globally averaged TAS anomalies relative to 1980-1999 as delivered in the IPCC 4th assessment report. Projected CO_2 and warming values are shown for the spectra of possible future scenarios, as described in IPCC reports. Cost of LHC is from CERN-Brochure-2017-002-Eng; cost of Trump's wall extracted from Statista.com, "dimensions-costs-trump-mexico-wall".

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