Europe keeps a space-based eye on climate change

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The Sentinel-6 satellite is designed to measuring sea levels as part of the European Union's Copernicus Earth Observation network

The head of the European Centre for Medium-Range Weather Forecasts knows a thing or two about the relentless intensification of climate change—his agency just released a report showing that the pace of global warming is accelerating.

But Jean-Noel Thepaut told AFP that the scale of the crisis really struck home in 2019 when he was in Paris with his family during the punishing heat wave that struck that year.

"The temperature in my flat was unbearable. I was with my children, who were living something I had never experienced in my whole life, and I'm in my late 50s," he told AFP.

"And I thought to myself, 'What have we done?'."

Thepaut's ECMWF released the EU's satellite-based climate change monitoring service's 2020 European State of the Climate Report on Thursday.

Here he puts its findings into perspective in an interview with AFP.

Q/ How does this report fit into the bigger climate change picture?

A/ 2020 was yet another warm year, among the top three. The last five years -– the warmest on record –- give us an idea of the trend line, even if the time period is short. We are about 1.2C above preindustrial levels globally, 2.2C in Europe, and 3C in the Arctic. That is the bottom line.

There will always be natural variability. Heatwaves in 2020, for examples, were a bit less intense and long than in 2019. But the trend over three years, five years, 10 years is unequivocal. This is the big picture. It is urgent to act.

Q/ Do you see signs of acceleration in global warming trends?

A/ Looking at temperature on a global scale, the last 10 to 15 years have shown an acceleration. It's the same for sea level. For other indicators it is less clear, but the trends are mostly going in the wrong direction.

What happens in the Arctic doesn't stay in the Arctic. There is a strong correlation between the extremely high warming—especially in the Siberian Arctic—and the impact on wildfires, sea ice loss, and fewer "snow days"

Q/ Temperatures have risen 1.2C globally and 2.2C in Europe compared to preindustrial levels. Is Europe more vulnerable to rising temperatures than other regions?

A/ It's not surprising to see faster warming in the northern hemisphere because there is more land, and land warms faster than the ocean.

As for vulnerability, increases in mean temperature have an impact on frequency and intensity of heat waves, droughts, and other elements. This shows that not only do we need to mitigate in keeping with the Paris agreement, but we also need to adapt.

Q/ For how many years has Europe's average surface temperature been more than 2C above the preindustrial benchmark?

A/ 2020 is probably the second or third year for which that is true. But let's remember that 1.5C and "well below 2C" in the Paris Agreement are global targets. Globally, we are not very far from 1.5C.

Q/ How do the radical changes we see in the Arctic affect Europe and the rest of the world?

A/ What happens in the Arctic doesn't stay in the Arctic. We see a strong correlation between the extremely high warming there—especially the Siberian Arctic—and the impact on wildfires, sea ice loss, and fewer "snow days".

Positive feedbacks make the warming problem in the Arctic. When there is less sea ice, the sunlight goes into the ocean and warms the water instead of bouncing back into space, leading increased temperature and further loss of sea ice. It's a vicious circle.

Q/ Why do you do what you do?

A/ My background is in weather and climate because I like the science. I'm not interested in building tanks or weapons. But that's only part of it.

Being concerned about the environment, and being able to contribute because of my profession –- and my job is extremely exciting, putting me right in the middle of things –- allows me to contribute to making the world a better place. It's just a small contribution, but it is very rewarding.