Climate Science use cases

In the climate science use cases, scientific teams across several regions utilized different models, software, and high-computing infrastructure to investigate climate change and air quality.

In the first use case, the scientific team predicted urban air quality in the South East Europe and Eastern Mediterranean regions. Services used included:

- WRF-ARW model
- Serbian thematic service DREAM dust models
- Airpollution Prediction service from the Republic of North Macedonia
- Aeolian dust particulate matter model
- Serbian generic service PARADOX-IV cluster
- EOSC services B2DROP and B2SHARE
- NI4OS-Europe generic Simple storage service
- Repository service Greek Repository service

In the second use case, the team investigated climate change and mineral dust pollution over the Caucasus region in Georgia. Services used included:

- Climate model RegCM4
- GRENA high-computing infrastructure
- WRF-Chem
- NI4OS-Europe digital repository service

In the third use case, the scientific team in Armenia used the Weather Research and Forecasting model with online coupled chemistry (WRF-Chem) to simulate air pollutants. Services used included:

- WRF-Chem
- AVITOHOL supercomputer
- NI4OS-Europe infrastructure
- Simple storage service

These use cases demonstrated the power of utilizing different services and infrastructure to provide insights into climate and air quality. By using these tools, teams could better understand environmental challenges and develop machine learning algorithms to increase forecasting and monitoring accuracy.

For more information about these uses cases please consult with the NI4OS-Europe deliverable 6.4 and the training platform.