

APPLICATE.eu

ADVANCED PREDICTION IN POLAR REGIONS AND BEYOND UNDERSTANDING THE ARCTIC'S CONNECTION TO WEATHER AND CLIMATE ACROSS THE NORTHERN HEMISPHERE

- ★ EU-funded project under the Horizon 2020 Research and Innovation programme with a budget of €8M. A four-year project, started 1. November 2016.
- ★ A consortium of 16 expert organisations from nine different countries!



Grant agreement
No. 727862

APPLICATE's objectives:

- ★ Develop advanced predictive capacity for weather and climate in the Arctic and beyond
- ★ Determine the impact of Arctic climate change on mid-latitude weather and climate
- ★ Exchange knowledge with stakeholders and provide training of early career scientists

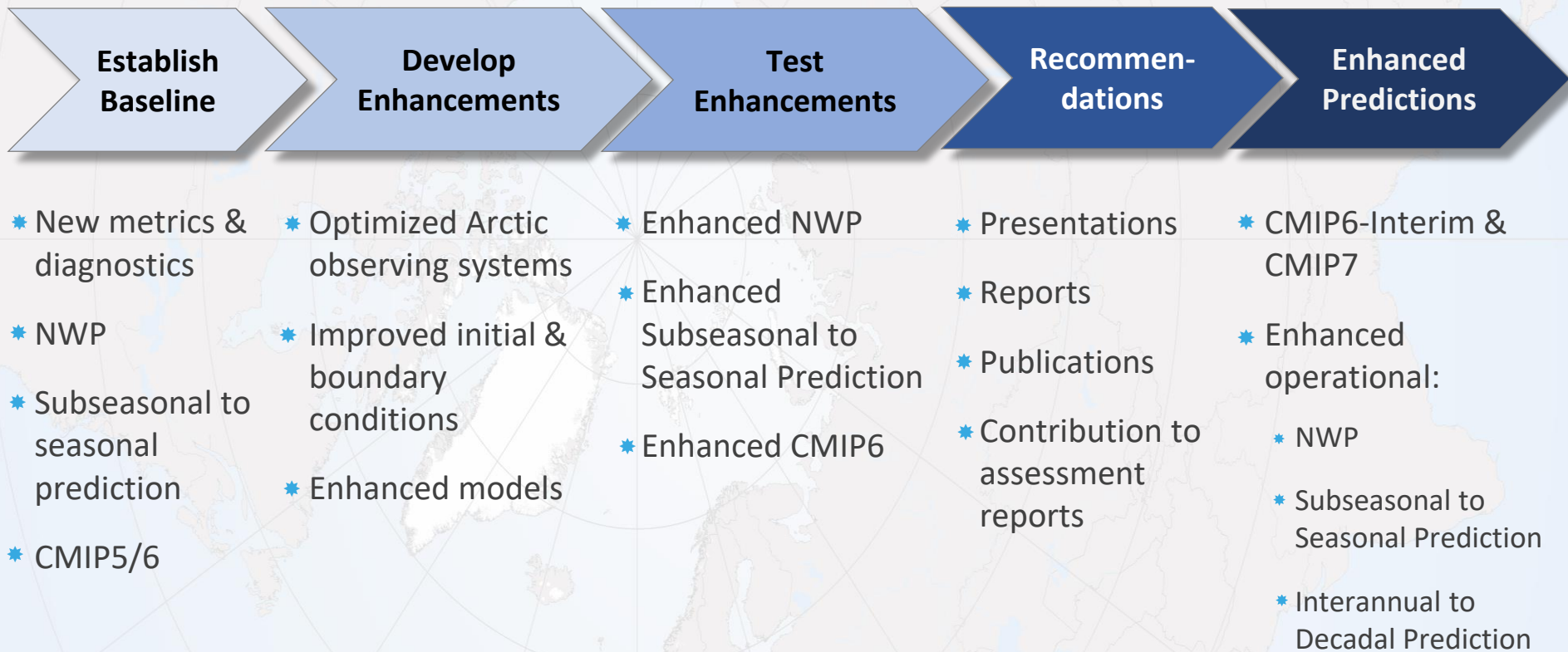


APPLICATE's general approach:

- ✦ Bring together the NWP and climate communities
- ✦ Involve experts on the Arctic and midlatitudes
- ✦ Engage operational centres and major modelling centers for maximizing impact
- ✦ Combine models and observations
- ✦ Shape and exploit European and international collaboration (e.g. YOPP and PAMIP)
- ✦ Stakeholder interaction
- ✦ Training of early career scientists



APPLICATE's strategy:



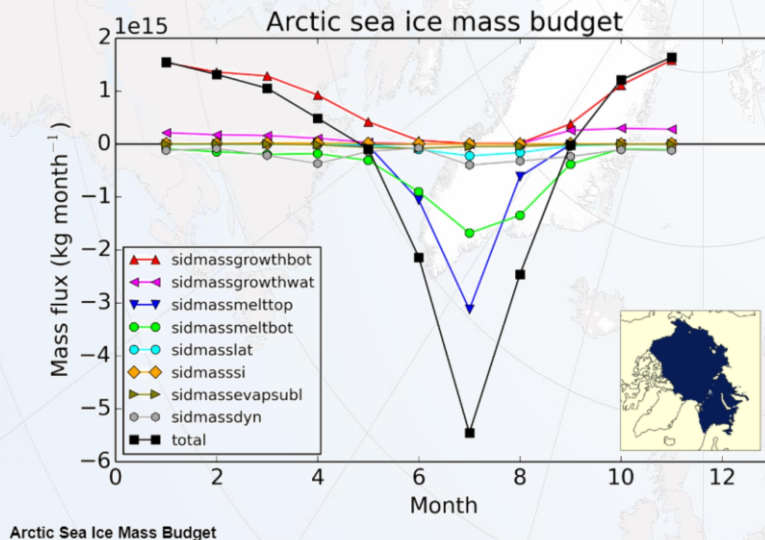
Scientific Highlights of the APPLICATE project include:

- ★ Development of process-oriented and user-relevant metrics and diagnostics.
- ★ Development of a coupled atmosphere-sea ice-ocean single-column model.
- ★ Contribution to the development of the Polar Amplification Model Intercomparison Project (PAMIP).
- ★ Evaluation of the importance of assimilating sea ice concentration and sea ice thickness for Arctic seasonal prediction.
- ★ Investigation of the impact of atmospheric observations on medium range forecasts in polar and lower latitude regions.
- ★ Finalization of baseline forecast experiments (Stream 1) on which the impact of APPLICATE developments will be tested (Stream 2).
- ★ Production and dissemination of the ECMWF-YOPP Analysis and Forecast Dataset.



Scientific Highlights of the APPLICATE project include:

- ★ Establishment of a data management system and post processing environment now available at applicate.met.no
- ★ Production and dissemination of the ECMWF-YOPP Analysis and Forecast Dataset.
- ★ Determination of the present limits of predictability in the Arctic from daily to subseasonal time scales.



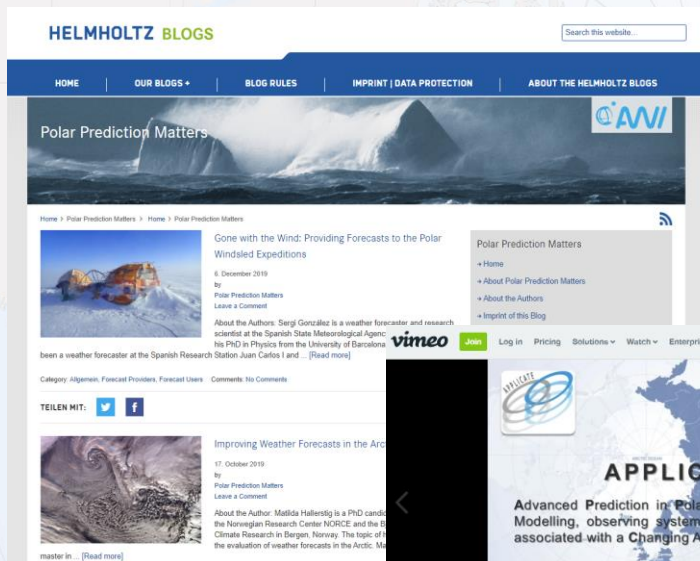
Improved knowledge of the sea ice volume/mass budget in climate models helps to better understand the spread in climate simulations and the drivers of Arctic sea ice decline.

SIMIP: A Sea-Ice Model inter-comparison Project of the mass budget of Arctic sea ice and snow in CMIP6 models.



Societal Highlights of the APPLICATE project include:

- ★ Engagement with stakeholders through a user-group, a user blog, case-studies and participation to dedicated events.
- ★ Organisation of a training school and interactive webinars with APECS and YOPP.

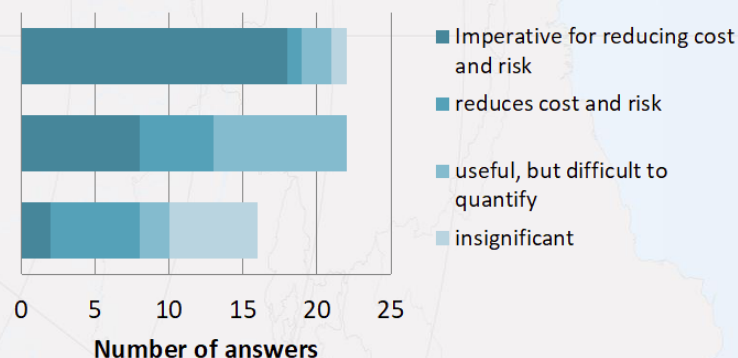


How important are Arctic predictions...

... from hours to weeks?
(tactical time scales)

... from months to years?
(operational time scales)

... from years to decades?
(strategic time scales)



Applicate stakeholders' engagement strategy:
stakeholders provide the project with an external perspective and feedback through dedicated interaction activities.

Stakeholders that can benefit from the work of the APPLICATE project include:

- ★ Climate scientists and modellers
- ★ Operational forecasting centres
- ★ Emergency services
- ★ Any business sector that is vulnerable to climate and weather from the Arctic to the mid-latitudes (tourism, shipping, agriculture, insurance, etc.)
- ★ Local and regional governments, businesses, communities, policy makers, indigenous people, NGOs and more in the Arctic and mid-latitudes



Stakeholders case-studies



APPLICATE.eu

Advanced prediction in
polar regions and beyond

We encourage stakeholder feedback!

Get involved – Provide feedback – [Join our blog](#)

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APPLICATE project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 727862