CRAICC-PEEC 3rd Workshop – well come speech

Ole Krarup Leth (head of section for Model Development, DMI)

Dear participants – guests, speakers, key note speakers, project partners, colleagues...

It is a great pleasure for me to welcome you to the 3rd CRAICC-PEEX workshop on "Climate Change for Arctic Seas and Shipping" here at the Danish Meteorological Institute - It really is a privilege to host this workshop.

DMI is the meteorological institute for the Unit of the Danish Realm which includes Greenland, Faeroe Islands and Denmark.

The Arctic region and the Arctic Ocean have very prominent roles in DMI's new over-all strategy, and also in our new research strategy that is being formulated this year.

DMI has a long track record of Arctic involvement: DMI is providing a huge range of daily nowcast and forecasts products for Greenland and for the North Atlantic and Arctic Ocean. Our products include also regular mapping of sea ice around Greenland for navigational safety purposes, operational oilspill tracking and satellite products of, for example, sea ice extend and thickness and sea ice temperature.

Evidently, DMI has a lot to offer and we will like to see ourselves as a very important player on the Arctic Scene.

This workshop is the 3rd in a row of 5 workshop organized in cooperation between the "CRyosphere-Atmosphere Interactions in a Changing Arctic Climate"-project which is coordinated by the University of Helsinki and the "Pan EurAsian Experiment"-study, PEEX. PEEX is a multi-disciplinary program addressing common challenges in the Arctic and northern Pan-EurAsia regions, such as: Climate change, air quality and loss of biodiversity. PEEX is also coordinated by the University of Helsinki.

Climate change is indisputable: Globally, 10 of the past 11 years have been the hottest on record. Although the months of June and July this year have been average (some may say lousy, temperature wise) here in Scandinavia they have been relatively warmer in the rest of the world, and with a month of August looking to be in the warm-end, there are some indications that 2015 may also belong in the top-ten, although it is too early to say anything conclusive. The World Meteorological Organization reported last year that the physical characteristics of extreme weather and climate events are being increasingly sharpened by climate change. They speak about: Major heat waves, drought and wildfires, extreme precipitation and floods. To this end I can mention that Germany had to pick up a bill last year of 6 billion

Euros of estimated damage after terrible flooding's.... Extreme-events like this are expected to become more frequent in a future climate.

Now, how will climate change impact the Arctic region?

Science is telling us that a future Arctic Region - 100 years from now - will be 3-6°C warmer than today, some argue that the increase maybe even larger, upto 10°C warmer than today. Winter sea ice cover will reduce markedly. Water level in the Arctic region will be maybe 80 cm to 1 meter higher than today. This increase in sea level stems from a number of factors: Thermal expansion of the water column owing to a warmer climate, loss of ice by glaciers and ice-sheets and reduction of liquid water storage on land.

Science is also telling us that the Arctic region will experience more precipitation in a future climate, especially in winter. Only part of the additional precipitation will fall as snow; some will fall as rain owing to the expected warming.

A warmer Arctic Ocean will see, scientist say, ice-free conditions for as long as four months each summer by year 2050. An ice-free Arctic Ocean during the summer months is giving the prospect, that it may soon be possible to navigate along the Arctic's northern sea routes with ease – a notion that also seems irresistible to shipping lines, not to mention mining companies and oil and gas exploration companies.

Climate change has a strong impact on ecosystem health, particular in the Arctic Ocean. A warmer climate will severely affect the ecosystem. Climate change will also result in shifts in species distribution in the marine ecosystem. Species that do not have sufficient adaptive capacity will disappear and new species will likely invade the Arctic Ocean.

Impacts from climate change are not limited to the ecosystem, fish stocks and to the spread of mammals in the Arctic, but will also affect, for example, coastal infrastructure, tourism industry, shipping industry and the way we trade and do business globally: For example, with free passage during the summer months between the North Pacific and North Atlantic via the Arctic Ocean, the maritime industry may cut upto 15 days compared to traditional routs via the Suez canal or Panama Canal. Such cuts in transportation-time means major savings in fuel.

Now, during this workshop, some of the serious concerns and big questions concerning the future development of Arctic shipping will be addressed: Shorter shipping route could cut emissions and the costs of trade, but with increased environmental risks. Another issue is that: Yes, the seas around the North Pole may be losing their summer ice, but there is still the ever-present danger of icebergs which can become a catastrophy for any cargo ship and tank ship AND for the environment....

At this workshop, I am really curious and hope to learn more on how we best take advantage of all the new possibilities in the Arctic, without damaging the sensitive environment and bringing the region at risk. You may not be able to come up with all the answers. But any effort, I think, to try and untie this “Gordian Knot” is important!

With this, I welcome you all and wish you all a very good workshop.

Thank you!