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Space for oceans, environment and climate

*Check Against Delivery
Seul le texte prononcé fait foi
Es gilt das gesprochene Wort*

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Climate change is a global phenomenon, its scale is planetary. Hence, space observations are an essential tool for climate policy complementing research land-based or sea-based research. It is no surprise that it is NASA - the US Space Agency – which is today one of the most reliable providers of the long-term data on global temperatures.

Climate monitoring from space is a relatively new tool.

In Europe, European Space Agency launched its Climate Change Initiative last year that is monitoring 11 different impacts of climate change, e.g. sea level rise, sea ice, forest cover etc. [I am sure that Mr Liebig will give you more details about this later in this session].

The Commission and ESA are also preparing to launch dedicated climate services under the earth observation programme – GMES or Global Monitoring for Environment and Security - in 2014. This programme will e.g. provide the data necessary to make annually updated, worldwide land-cover maps, helping to assess deforestation more precisely. But already now, these satellites are monitoring atmospheric concentrations and fluxes of CO₂, methane and aerosols.

The international architecture for climate observations from space is still in full development. The United States, China, Russia and others are also developing their climate space programmes. Some work is already being done on data standardisation and climate quality control. It is crucial that we continue coordinating our programmes with others to get the right data at the right time, in the right place, and at least cost. This is no matter only for individual countries or regions; we must pool resources and capacities to get the best result for our climate policies.

One example of successful cooperation between various European and American space agencies is the Jason ocean mission. Jason is an altimeter spacecraft that revealed the recent steady rise in global sea level by about 3cm a decade. Therefore, I am glad that the EU Galileo satellite navigation programme, of which the two first satellites were launched two weeks ago, is compatible with the American GPS and the Russian GLONASS, because such cooperation in the field of climate must definitely be enhanced.

The United Nations have a programme – GCOS or Global Climate Observing System - that defines what kind of data we precisely need for climate monitoring and policies. This includes concentrations of greenhouse gases, sea level rise, sea ice cover, land cover, ocean colour, etc. We must ensure that European space programmes in cooperation with others will be able to provide us with necessary information, so that we can fit all the pieces of the puzzle together at a global scale.

ESA and EUMETSAT are already global leaders in earth observation. I read a study which says ESA and EUMETSAT have today the potential to provide almost all the global satellite data we need to monitor the impacts of climate change, but they also called it an "underused asset". I hope that soon ESA's climate change initiative and GMES will become important pillars of the global climate space observation system. Europe must ensure it remains at the forefront of these technologies.

Space observations can also give valuable input for adapting our economies to the consequences of climate change. For instance, by providing information on vulnerabilities of different regions to temperature and precipitation changes. This can help us develop better policies, and save money, both in Europe and in projects we support in developing countries.

ESA satellites have e.g. analysed hot spots in 10 European cities. On this basis it is predicted that in the future heat waves like the one we had in the extreme summer of 2003 might re-occur every 3-4 years. So, satellite observations might help city

planners to develop more liveable cities (e.g. planning green spots), assess energy efficiency and assist civil protection authorities in taking adequate measures during heat waves.

Input from satellite observations will be used in the Commission's Clearing House Mechanism – an information tool for citizens and policy makers on adaptation to climate change that my services work on and which will be launched in half a year.

Satellite observations should also provide us with the necessary data to attribute, or not, extreme events and climate trends to climate change, and to refine our climate models and projections.

Space observations just for monitoring climate change may be quite costly. But synergies with practical applications in other sectors, delivering immediate technological improvements, are possible.

Galileo will allow for better voyage planning in transport, shipping and aviation sector. This will at the same time help to reduce fuel costs and emissions.

Galileo can also be used for road charging systems, which can – again - help limiting emissions in and around cities.

In agriculture, satellite observations can be helpful for farmers when they have to assess surface areas for subsidies under the Common Agricultural Policy or when they spread pesticides. It is also a useful instrument for assessing land use changes, ecological focus areas, crop rotation or diversification and deforestation.

But satellite technology needs to develop further before a full assessment of emissions and carbon sinks would be possible.

Budget for future space observations is foreseen under the new European Programme for Research and Innovation – "Horizon 2020" - that will be presented at the end of this month. The Commission requested in total €80 billion for Horizon 2020. We expect that a significant share of the budget would be invested in climate research and climate-related innovation activities.

Conclusion: Observations from space for climate purposes are not just nice to have; it's a need to have!