02.
Climate change

Reasons why you should take it seriously

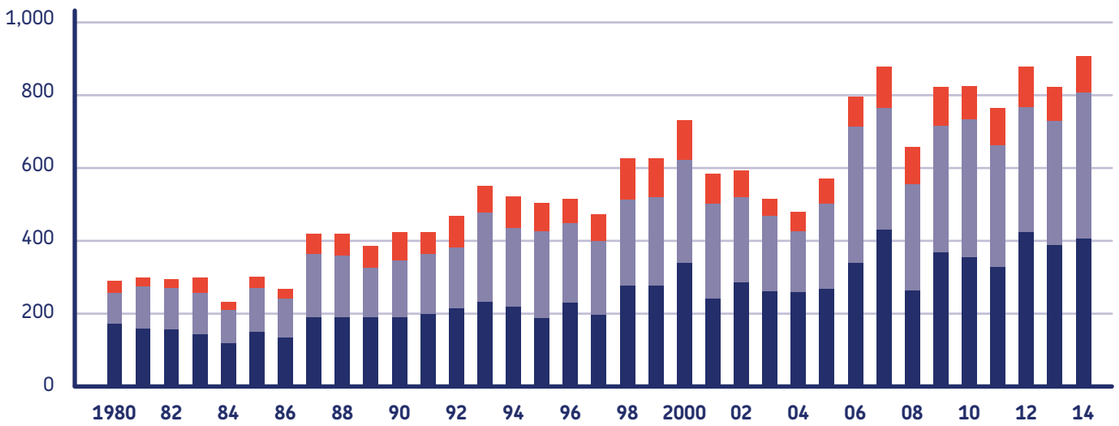
Why should you take the climate change seriously

There are very clear signs that climate change is actually taking place. The number of extreme weather -and climate- related events is rising. Serious storms have more than doubled in frequency since the early 1980s. Floods and heat waves have tripled or worse. Some irreversible processes are taking place, impacting weather patterns and making them more severe. The consequences for humanity may be serious. A global vision and understanding is needed to address this threat to our planet.

During recent summers we have witnessed extreme heat waves all over the globe. By mid summer of 2015, average temperatures have been the highest since record-keeping began. For example, India, was struck by a deadly heat wave in May 2015. Temperatures as high as 47°C caused 2,200 deaths. Another heat wave, in Pakistan, claimed the lives of hundreds more. A study published by the Lancet Commission on Health and Climate Change (June 2015) suggests that previous estimates of the future effect of global warming on health, made by the World Health Organisation and the Intergovernmental Panel on Climate Change, are underestimates because they failed to take into account vulnerabilities caused by ageing, migration and population growth.

The number of extreme weather -and climate- related events has multiplied in frequency since the early 1980s.

Disasters caused by weather and climate.



Source: Munich Re

Obama: No challenge poses a greater threat than climate change.

The subject of climate change is finally enjoying the importance in US government policy it deserves. This is expected to have a positive impact on global awareness and should lead to real action and stronger cooperation in climate change mitigation globally. In his 2015 State of the Union speech, President Obama said:

"No challenge -no challenge- poses a greater threat to future generations than climate change. 2014 was the planet's warmest year on record. Now, one year doesn't make a trend, but this does -14 of the 15 warmest years on record have all fallen in the first 15 years of this century."
"I've heard some folks try to dodge the evidence by saying they're not scientists; that we don't have enough information to act", he continued. "Well, I'm not a scientist either. But you know what - I know a lot of really good scientists at NASA, and NOAA, and at our major universities. The best scientists in the world are all telling us that our activities are changing the climate, and if we do not act forcefully, we'll continue to see rising oceans, longer, hotter heat waves, dangerous droughts and floods, and massive disruptions that can trigger greater migration, conflict and hunger around the globe. The Pentagon says that climate change poses immediate risks to our national security. We should act like it. That's why, over the past six years, we've done more than ever before to combat climate change, from the way we produce energy to the way we use it".

Source: US president Obama State of the Union speech.

Climate change is happening now

1921

2009

We should act to stop or limit it.

We can already see the negative impact of climate change already today.

The average concentration of CO_2 in the atmosphere in 2014 was 398 ppm, which is more than 140% higher than in pre-industrial levels. This indicator is tracked by the Mauna Loa Observatory in Hawaii. When records began being kept in 1956, CO_2 concentration was 316 ppm. Carbon-dioxide emissions have risen relentlessly and in the last couple of years the level of carbon dioxide in the atmosphere increased at its fastest rate for 30 years. (1)

The globally averaged temperature over land and ocean surfaces for June 2015 was the highest for the month of June since record keeping began in 1880. So far, the year 2015 is the warmest on the record. (2)

The polar ice caps have melted faster in than last 20 years than in the previous 10,000.
A comprehensive satellite study confirms that melting ice caps are raising sea levels at an accelerating rate.

It is expected that between 70% and 99% of Everest's glaciers will be lost by the end of the century.

According to projected CO_2 concentrations in 2100, only the glaciers at the altitude of above 7.000 metres will remain.

(1) Source: www.co2now.org
(2) Source: http://www.ncdc.noaa.gov

It's all about how we adapt to climate change, not whether it's taking place - IPCC.

Human Interference with the Climate System is clear and undeniable, states the Intergovernmental Panel on Climate Change (IPCC) in its 5th report.

The Intergovernmental Panel on Climate Change (IPCC) is the leading international body for the assessment of climate change. It was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in 1988 to provide the world with a clear scientific view on the current state of knowledge about climate change and its potential environmental and socio-economic impacts.

IPCC defines climate change as a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability, observed over comparable time periods.

In recent decades, changes in climate have impacted on natural and human systems on all continents and across the oceans. Evidence of climate-change impacts is strongest and most comprehensive for natural systems.

The impact of recent climate-related extremes, such as heat waves, droughts, floods, cyclones, and wildfires, reveal significant vulnerability and exposure of some ecosystems and many human systems to current climate variability. These include alteration of ecosystems, disruption of food production and water supply, damage to infrastructure and settlements, morbidity and mortality, with consequences for mental health and human well-being. For countries at all levels of development, these impacts are consistent with a significant lack of preparedness for current climate variability in some sectors.

Key risks across sectors and regions

Wide range of sectors under threat of climate change need adaptation policy.

Dangerous anthropogenic interference with the climate system is already causing severe impact on a wide range of sectors. The 5th IPCC report digs into details of key risks.

1. Freshwater resources.

The freshwater-related consequences of climate change increase significantly with increasing greenhouse gas concentrations. The percentage of the global population experiencing water scarcity and the fraction affected by major river floods will increase with the level of warming in the 21st century. Climate change is predicted to reduce renewable surface water and groundwater resources significantly in most dry subtropical regions, intensifying competition for water among sectors.

2. Terrestrial and freshwater ecosystems.

A large proportion of both terrestrial and freshwater species faces increased extinction risk under projected climate change, especially as climate change interacts with other factors such as habitat modification, over-exploitation, pollution, and invasive species.

3. Coastal systems and low-lying areas.

Due to sea level rise, coastal systems and low-lying areas will increasingly experience adverse impacts such as submergence, coastal flooding, and coastal erosion.

4. Marine systems.

Global marine-species' redistribution and marine-biodiversity reduction in sensitive regions will challenge the sustained provision of fisheries productivity and other ecosystem – related services.

5. Food security and food production systems.

All aspects of food security are potentially affected by climate change, including food access, utilisation, and price stability. For example, the major crops (wheat, rice, and maize) in tropical and temperate regions.

6. Livelihoods and poverty.

Climate-change is projected to slow down economic growth, making poverty reduction more difficult, further eroding food security, and prolonging existing and create new poverty traps, particularly in urban areas and emerging hotspots of hunger.

7. Urban areas.

Heat stress, extreme precipitation, inland and coastal flooding, landslides, air pollution, drought, and water scarcity pose risks in urban areas for people, assets, economies, and ecosystems. Risks are amplified for those lacking essential infrastructure and services or living in poor-quality housing and exposed areas.

Reducing basic service deficits, improving housing, and building resilient infrastructure systems could significantly reduce vulnerability and exposure in urban areas.

8. Rural areas.

The impact on water availability and supply, food security, and agricultural incomes, including shifts in production areas of food and non-food crops across the world is predicted to be considerable.

9. Key economic sectors and services.

For most economic sectors, changes in population, age structure, income, technology, prices, lifestyle, regulation, and governance are projected to be large, relative to climate change.

10. Human health.

Until the mid-21st century, projected climate change will impact human health mainly by exacerbating health problems that already exist. Climate change is expected to lead to increases in ill-health in many regions and especially in developing countries with low income, as compared to a baseline without climate change.

11. Human security.

Climate change is projected to increase the displacement of people. Climate change can indirectly increase risks of violent conflicts in the form of civil war and inter-group violence by amplifying well-documented drivers of these conflicts such as poverty and economic shocks.

The impact of climate change on the critical infrastructure and territorial integrity of many states is expected to influence national security policies. For example, land inundation due to the sea level rising poses risks to the territorial integrity of small island states and states with extensive coastlines.