

SHORT SUMMARY OF THE IPCC REPORT FROM WORKING GROUP 2



**CLIMATE CHANGE HAS
DEVASTATING IMPACTS**

TIME TO ACT!



The Greens | European Free Alliance
in the European Parliament

INTRODUCTION

The Intergovernmental Panel on Climate Change's (IPCC) reports are the most comprehensive global overview to date of the science behind climate change. These climate reports are used by governments to help them take the necessary action to prevent catastrophic global warming and adapt to the impacts of climate change.

The IPCC is composed of three working groups (WG) whose findings are brought together in a final synthesis report. Working Group 1 focuses on climate science and trends in extreme weather events; Working Group 2 focuses on impacts - agriculture, disease, infrastructure, and adaptation; Working Group 3 focuses on mitigation. The next IPCC's Fifth Assessment Report (AR5) will be published end of 2014.

→ The previous report from the UN scientific panel on climate change (IPCC) on climate science published in September 2013 confirmed that there is a 95% likelihood that global warming is caused by human activities. It also showed that most of the emission growth between 2000 and 2010 came from fossil-fuel use in the energy and industry sectors, and took place in emerging economies.

This new report, produced by the IPCC's working group II, warns about the risks that the world faces from climate change impacts in the next decades if countries do not seriously reduce their greenhouse gas emissions and do not adapt to the changes quickly enough. The document looks at the impacts which can already be felt but also projects the future impacts based on unchecked emissions of greenhouse gases under different scenarios.

Despite the fact that the climate change impacts picture remains far from complete, the results of this latest report clearly indicate that the impacts on nature and society would increase sharply with each degree of global warming.

The Greens call once again on policy-makers across the globe to recognise the importance of these scientific findings. They urge them and Europe in particular to increase efforts to ensure that the level of ambition in the future global climate deal in 2015 effectively minimises the risks presented in this WGII report. The level of ambition of all countries MUST reflect these science-based warnings.

KEY MESSAGE OF THE IPCC REPORT (WG II)

WHAT ARE THE RISKS IF WE DO NOT REDUCE OUR EMISSIONS?



The effect of climate change will not be the same in all regions of the world. Some risks will be limited to a particular sector or region, and other will have cascading effects.

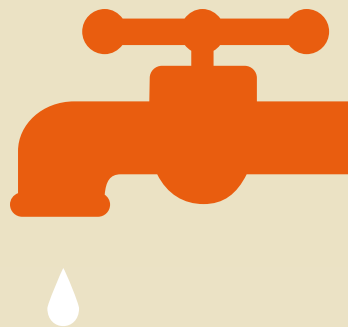
FRESHWATER

Freshwater availability is significantly hit with increasing emissions.

There is robust evidence that freshwater-related risks of climate change increase significantly with increasing greenhouse gas emissions. Climate change will reduce renewable surface water and groundwater resources significantly in most dry subtropical regions, exacerbating competition for water among sectors.

The WGII IPCC report from on climate impacts predicts that **for every degree increase in temperature, an additional 7 percent of the world's population will see a decline in water resources of 20 percent.** Climate change is also expected to worsen water quality in some places due to sediment and pollutant inflows from increasingly heavy rainstorms.

Furthermore changing precipitation or melting snow and ice are altering hydrological systems, thus affecting water resources and quality.



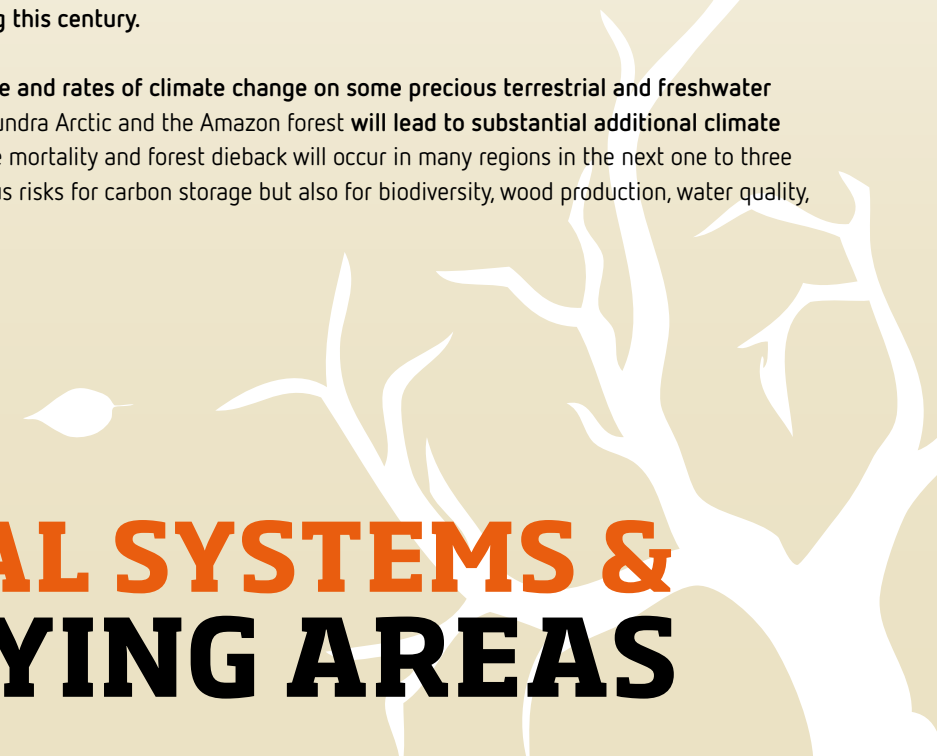
TERRESTRIAL & FRESHWATER ECOSYSTEMS

In response to ongoing climate change, terrestrial and marine species have already shifted their ranges, seasonal activities, migration patterns, and abundance, and have demonstrated altered species interactions. The report shows that **a big number of terrestrial freshwater species faces increased extinction risk and that many species will be unable to adapt fast enough during this century.**

Even more worryingly, **the magnitude and rates of climate change on some precious terrestrial and freshwater ecosystems** such as on the boreal tundra Arctic and the Amazon forest **will lead to substantial additional climate change.** Scientists also fear that tree mortality and forest dieback will occur in many regions in the next one to three decades. Forest dieback poses serious risks for carbon storage but also for biodiversity, wood production, water quality, amenity and economic activity.

COASTAL SYSTEMS & LOW-LYING AREAS

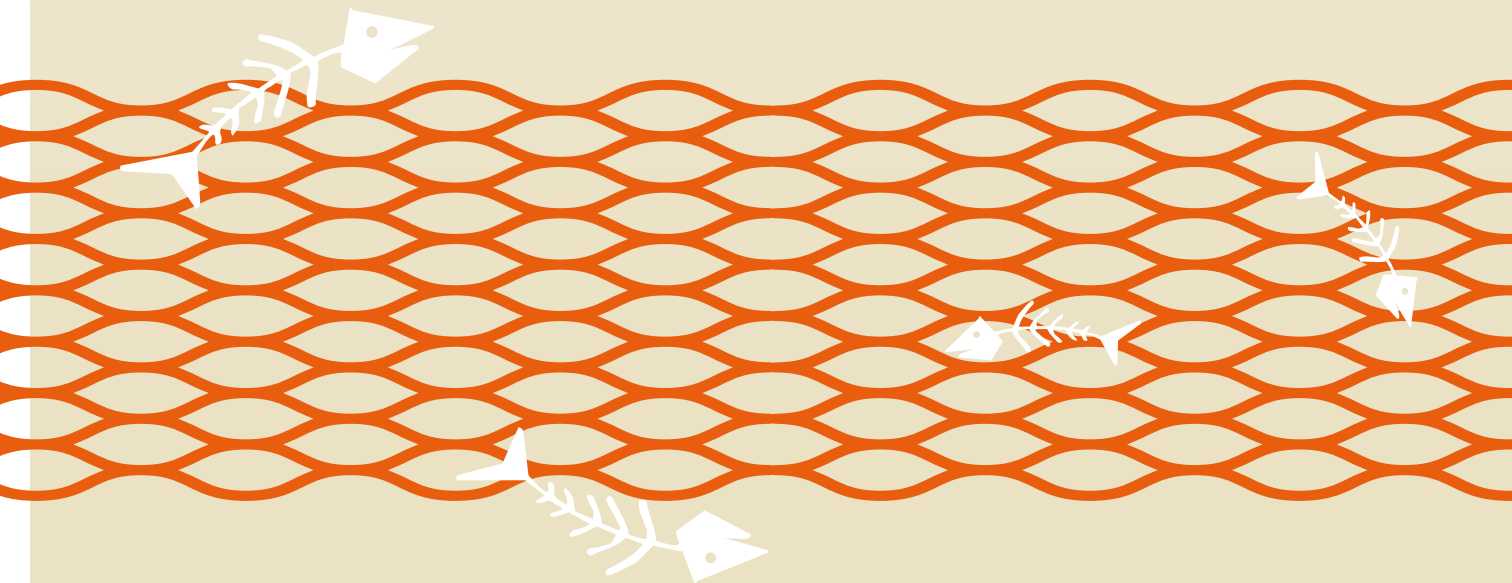
Due to **sea-level rise** throughout the 21st century and beyond, coastal systems and low-lying areas will increasingly experience adverse impacts. **Coastal risks** will also be exacerbated by human pressures such as population growth, economic development and urbanization.



MARINE SYSTEMS

By mid-century, marine species will experience spatial shifts. This will result in global redistribution of catch potential for fish and invertebrates, with **implications for food security**. Over-fishing will only add to the threat of climate change.

Ocean acidification due to global warming poses risks to ecosystems, especially polar ecosystems and coral reefs. This has consequences for fisheries and livelihoods. Environmental changes both at global (warming, decreasing oxygen levels) and local (pollution, eutrophication) levels reinforce the trend.



AGRICULTURE - FOOD PRODUCTION & FOOD SECURITY

For agriculture dependent countries, the report warns of worrying changes in crop yields. **With or without adaptation climate change will reduce median yields by 2% per decade for the rest of the century**, as compared to a baseline without climate change. These projections will occur in the context of rising **crop demand, projected to rise by about 14% per decade until 2050**. This growing gap between demand and supply will exponentially increase pressure on the global food system and drive **more hunger and poverty** among the world's most vulnerable populations. Scientists also warn that impacts on food supplies will also create **more conflict**.

The science is practically certain that negative impacts on crop and food production have been more common and outweigh any positive impact. Moreover, the rapid food and cereal prices increases have shown that current markets in key producing regions are sensitive to climate extremes.



IMPACTS ON URBAN & RURAL AREAS

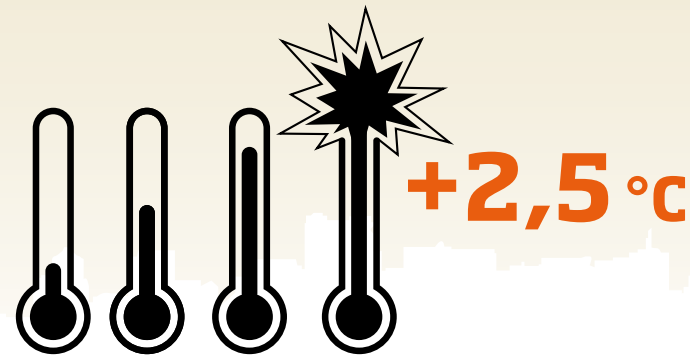
Heat stress, extreme precipitation, inland and coastal flooding and drought and water scarcity pose **risks in urban areas for people, assets, economies and ecosystems**. But it is mostly in rural areas that scientists predict that major future impacts will be felt in the near-term and beyond through **impacts on water supply, food security and agricultural incomes**, including shifts in production of food and non-food crops in many areas of the world. It is in the countryside that the welfare of the poor is the most at threat.

ECONOMIC SECTORS

Climate change impacts will slow economic growth and poverty reduction and will also further erode food security. Experts also fear that it will trigger new poverty traps, particularly in urban areas and emerging hotspots of hunger.

Climate change is predicted to reduce energy demands for heating but increase energy demand for cooling. Energy sources and technologies will be affected differently, depending on the resources, technologies or locations involved. In some parts of the globe, the combination of high temperature and humidity will compromise normal human activities (such as growing food, working outdoors).

Overall, Scientists predicts that the economic cost of warming of 2.5 degrees from pre-industrial levels may range from 0.2% to 2% of global output.



HUMAN HEALTH

Climate change has likely contributed to human ill-health although it is hard to quantify precisely. There is medium confidence that warming has increased heat-related mortality and decreased cold-related mortality in some regions.

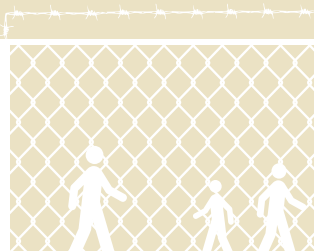
Scientists predict that up to 2050 climate change will impact human health mainly by exacerbating existing health problems. Climate change will increase the likelihood of injury, disease and death due to more intense heat waves and fires. It will increase the likelihood of under-nutrition resulting from diminished food production in poor regions, reduce labor productivity in vulnerable populations and increase risks from food and water-borne diseases.



VULNERABILITY AND HUMAN SECURITY

The impacts of recent extreme climatic events (such as heat waves, droughts, floods, wildfires...) have showed the vulnerability of some ecosystems as well as many human systems. The vulnerability depends on the development of the different regions of the globe.

There is high confidence that over the 21st century climate change will have impacts on forms of migration and that this will compromise security. Climate change also indirectly increases risks of conflicts such as civil war, inter-group violence and violent protests. Climate change will also have trans-boundary impacts such as changes in sea ice, shared water resources, migration of fish stocks and so increased rivalry among states.



DANGEROUS RISKS OF CLIMATE CHANGE

What does article 2 of the UNFCCC mean?

1. Risk of death, injuries and disrupted livelihoods in low-lying coastal zones and small island developing states due to sea level rise, coastal flooding and storm surges
2. Risks of food insecurity linked to warming, drought, precipitation variability
3. Risk of severe harm for large urban population due to inland flooding
4. Risk of loss of rural livelihood and income due to insufficient access to drinking and irrigation water and reduced water productivity
5. Systemic risks due to extreme events leading to breakdown of infrastructure network and critical services
6. Risk of loss of marine ecosystems and all the services they provide, particularly for fishing communities
7. Risks of loss of terrestrial ecosystems and the services they provide for terrestrial livelihoods
8. Risk of mortality, morbidity and other harms during periods of extreme heat, especially for vulnerable urban populations

THE KEY RISKS FOR EUROPE

- **Increased economic losses and people affected by flooding** in river basins and coasts, driven by increasing urbanisation and by increasing sea levels and peak river discharges.
- **Increased water restrictions:** Significant reduction in water availability for river abstraction and from groundwater resources, combined with increased water demand (such as for irrigation, energy and industry, domestic use) and with reduced water drainage and runoff as a result of increased evaporative demand
- **Increased economic losses and people affected by extreme heat events:** impacts on health and well-being, labor productivity, crop production and air quality

CONCLUSION

The IPCC WGII report warns that **large magnitude warming increases the likelihood of severe, pervasive and challenging impacts**. These findings are much more alarming than those contained in the most recent report published in 2007, relative positive impacts being by far outweighed by the negative ones. **If global temperature rises beyond 4°C, experts predict adverse impacts on agricultural production worldwide, extensive ecosystem impacts and increasing species extinction risk.**

With the scenario of limiting the average temperature increase to 2° C becoming increasingly challenging, **this IPCC report on climate impacts shows once again the importance and urgency of climate action** to avoid overshooting this target, that was agreed upon at international level in Copenhagen in 2009. And beyond which scientists expect climate change to spin out of control.

There is still time to avoid the worst impacts. The report confirms that mitigation of greenhouse gas emissions over the next decades can substantially reduce risks of climate change in the second half of the 21st century. **With serious mitigation actions, risks and climate change impacts** - such as negative agricultural yield impacts, water scarcity, challenges to urban settlements and infrastructure, adverse impacts from heat extremes, floods, droughts etc. - **can be reduced.**



For the Greens there is clearly enough certainty about climate change science and impacts to recognize how urgently action is needed. There are also many possibilities for modernising our economy, cleaning up our energy systems and phasing out climate-polluting emissions, while respecting our planet's limitations.

The group pushes the EU to quickly make the transition to a sustainable, climate-friendly economy and launch a dynamic and positive trend on the international stage. Several countries, regions, cities and citizen groups across the globe have already started to reduce their carbon footprint. This must now be reflected and intensified by as many countries as possible.



**WE NEED
ACTION NOW!**



THE GREENS / EFA GROUP IN THE EUROPEAN PARLIAMENT

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STOP CLIMATE CHANGE
PLAY YOUR PART