The Potsdam Institute for Climate Impact Research (PIK) is a member of the Leibniz Association. Set up in 1992, PIK is regarded as a pioneer in interdisciplinary research and as one of the world's leading establishments in its field. It currently has around 300 employees and receives core funding from the federal and state governments of roughly 11 million euros annually. Considerable additional project funds come from external organisations. The institute's historic buildings and high performance computer are situated on the famous Telegraph Hill where scientific giants like Einstein, Schwarzschild and Michelson pursued their studies.

More than any other problem humanity is facing, global warming is urging science out of its ivory tower. PIK has succeeded not only in pushing forward the scientific debate on the whole issue of climate change, but in initiating intensive dialogue with and action in the public sphere.

Research Domains
Climate change and its related problems are characterised by a complex web of causes and effects and can only be managed in the context of a general transition to global sustainability. In order to encompass and address all material aspects, the scientific activities at PIK are organised in four major research domains.

1. Earth System Analysis
2. Climate Impacts & Vulnerabilities
3. Sustainable Solutions
4. Transdisciplinary Concepts & Methods

The Institute
Climate change and its related problems are characterised by a complex web of causes and effects and can only be managed in the context of a general transition to global sustainability. In order to encompass and address all material aspects, the scientific activities at PIK are organised in four major research domains:

1. Earth System Analysis
2. Climate Impacts & Vulnerabilities
3. Sustainable Solutions
4. Transdisciplinary Concepts & Methods
The Task

PIK addresses crucial scientific questions in the fields of global change, climate impacts and sustainable development.

Natural and social scientists work together to assess the Earth system’s resilience to human interventions and develop pathways for sustainable development. The models used and developed at PIK are solution-oriented, their projections forming a basis for decision making in politics, economics and civil society.

Natural and social scientists work together to assess the Earth system’s resilience to human interventions and develop pathways for sustainable development. The models used and developed at PIK are solution-oriented, their projections forming a basis for decision making in politics, economics and civil society.

1. The precondition for the research carried out at PIK is a thorough understanding of the climate system. This understanding is founded on the analysis and modelling of the manifold interactions between the atmosphere, the oceans, vegetation and human activity. Simulations with modern Earth System models developed at PIK have proven successful in reproducing the dynamics of the Earth’s climate history. These models can therefore be used to also project global and regional patterns of future climate change.

2. Vulnerability to climate change differs from country to country, from landscape to landscape, and from sector to sector. Human-made global warming will produce some winners, but mainly losers, since the means to adapt to changed environmental conditions will be limited and – above all – not equally available to everyone. PIK’s investigations identify ways in which negative effects of climate change can be confined and potential opportunities be seized.

3. Modern societies have to be exposed to manageable risks. Global warming needs to be kept within a very limited range. An essential objective of PIK’s research is to devise solution strategies that enable society to meet this objective. One of the key questions is the role of different technologies and policy instruments for a sustainable transformation of worldwide energy systems. PIK also explores the growing significance of and the variety of options for adapting to a changing climate.

4. Transdisciplinary research combines science with practice, something which is of overriding importance in the intellectual debate on climate change. To build this bridge, concepts and techniques are needed which reveal the systemic characteristics of the objects of research. This approach, which is based particularly on mathematical and qualitative-discursive methods, has a long tradition at PIK. PIK elaborates the application of complex systems and transdisciplinary network science to the problem of climate change.

The Task

The precondition for the research carried out at PIK is a thorough understanding of the climate system. This understanding is founded on the analysis and modelling of the manifold interactions between the atmosphere, the oceans, vegetation and human activity. Simulations with modern Earth System models developed at PIK have proven successful in reproducing the dynamics of the Earth’s climate history. These models can therefore be used to also project global and regional patterns of future climate change.

Vulnerability to climate change differs from country to country, from landscape to landscape, and from sector to sector. Human-made global warming will produce some winners, but mainly losers, since the means to adapt to changed environmental conditions will be limited and – above all – not equally available to everyone. PIK’s investigations identify ways in which negative effects of climate change can be confined and potential opportunities be seized.

Modern societies have to be exposed to manageable risks. Global warming needs to be kept within a very limited range. An essential objective of PIK’s research is to devise solution strategies that enable society to meet this objective. One of the key questions is the role of different technologies and policy instruments for a sustainable transformation of worldwide energy systems. PIK also explores the growing significance of and the variety of options for adapting to a changing climate.

Transdisciplinary research combines science with practice, something which is of overriding importance in the intellectual debate on climate change. To build this bridge, concepts and techniques are needed which reveal the systemic characteristics of the objects of research. This approach, which is based particularly on mathematical and qualitative-discursive methods, has a long tradition at PIK. PIK elaborates the application of complex systems and transdisciplinary network science to the problem of climate change.