GEO-NET
Climate services
Climate ecology in spatial planning
Climate services for every spatial level

Reliable analysis and precise concepts are essential for a climate-friendly urban and regional development. GEO-NET has already successfully carried out above 300 projects in this field. We are a professional, reliable and innovative service provider when it comes to the issues of climate ecology and air quality. We offer individual solutions for individual questions, for private and for public clients and at every spatial level.

Local and regional climate analyses

Would you like to integrate the issues of climate ecology into the spatial development of your city or region? Our local and regional climate analysis is a reliable basis for this purpose. We begin by creating a climatotope map based on your town’s or your region’s structural data, which shows and assesses impact areas (settlement areas) and compensation areas (open sites). The next step is the creation of a climate analysis map by means of computerized modeling. This map allows you to better evaluate the climate interrelations and processes. The final region's structural data, which shows and assesses impact areas (settlement areas) and compensation areas (open sites). The next step is the creation of a climatotope map based on your town’s or your region’s structural data, which shows and assesses impact areas (settlement areas) and compensation areas (open sites). The next step is the creation of a climate analysis map by means of computerized modeling. This map allows you to better evaluate the climate interrelations and processes. The final campaign

Meteorological measurement campaigns

Would you like to be able to evaluate the current climatic conditions in your city during warm summer periods on the basis of measurements? For this purpose we offer stationary measurements of the most essential parameters of a city’s climate being wind, air temperature and humidity. In addition to the long-term measurements at selected locations, mobile measurements can be carried out in order to measure the temperature and humidity fields in a city area. We use the measured meteorological data as an additional factor to be included in our climate analysis or to verify computer simulated results. Measurement campaigns can also be used as an initial step towards achieving an accurate evaluation of the climatic situation of your town.

Climate ecological concepts

Are you currently drafting an urban structural development plan or managing a construction project? Then you should consult with us in order to determine the impact of the plan on the climate and air conditions. We assess all functional links between planning goals and the climate in reasonable detail. Our services fulfill the legal requirements that are made on development planning. We do not only offer basic expert statements, but also large-scale and detailed analyses and forecasting modeling on the basis of advanced numerical models. The effects of individual construction variants or measure scenarios can be evaluated and compared. In close collaboration with you, we develop planning recommendations with the aim of avoiding or at least minimizing the potential impairments.

Air quality expertise

Can you comply with limit values in realizing your project? We can help you with the answer! We analyze emissions and air pollution from traffic, industry and households. The analysis can be carried out for the current and for the planned situation. Our range of methods includes the large-scale modelling of the air pollutants, for example for regional planning or air quality planning as well as a study of pollution directly at certain constructions or for the assessment of traffic measured which is accurate down to a meter. Furthermore we offer modelling of odour dispersion for the estimation of odour impact especially in rural areas (for biogas plant or livestock farming).

Climate change mitigation

Are you looking for ways to reduce or even neutralize your greenhouse gas emissions? We support you with developing high quality mitigation concepts for all key action fields and also with public funding.

Climate change adaptation

Do you want to face the impacts of climate change in your local region? We support you in fulfilling this complex responsibility with our technical and methodical expertise. We offer expertise for a specialized range of tasks (e.g. urban warning) or adaptation strategies which span different fields of action. From the regional climate modeling we derive information about the local climate change in a high spatial and temporal resolution. On this basis we compile local vulnerability studies. In agreement with decision-makers on site, we develop a program of climate-adaptation measures for specific areas. We can also help you with public fundraising.

Methodological expertise

Individual questions need individual solutions. Thanks to our extensive experience, we could develop a methodological toolbox from which we can choose the suitable components together. In order to keep our methodical expertise up-to-date, we invest continuously in research and development.

- self-developed meso-scale and micro-scale climate and dispersion models (mesoscala, ASMUS)
- software for statistical analysis and visualisation of geodata and satellite imagery (ArcGIS, ArcView, ArcScene, ENVI, ENVI-met)
- stakeholder participation (workshops, expert interviews, questionnaire campaigns)
- self-developed downsampling of global/regional climate model simulations (ENVELOPE)
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Our methodical toolbox:
Our main services include:

+ Local and regional climate analysis
+ Meteorological measurement campaigns
+ Climatic and ecological expertise
+ Air-quality expertise
+ Climate change mitigation concepts and expertise
+ Climate change adaptation strategies and expertise

Experience builds confidence

Climate ecology is becoming increasingly important within the framework of land use planning and project planning. As a professional and reliable service provider we support you in every facet of this issue regardless of the spatial level of the project.

Our work focuses on services to do with climate ecology, air quality, climate change mitigation and climate change adaptation. Our customers, especially in the public sector range from local municipalities and regional authorities through to federal state governments. Furthermore we work for private clients, like farmers or building developers.

Depending on the task, we apply proven methods or develop innovative solutions. We use our validated computer models and GIS-analysis. We organize expert discussions or workshops and take part in research projects. The compliance with the legal standards by our expertise goes without saying for us.

+ Market experience since 1995
+ Successful implementation of more than 500 projects in Germany
+ Our own meso-scale and micro-scale climate and dispersion simulation models FITNAH 3D and ASMUS
+ Participation in research projects in order to improve the offered products and in order to develop new solutions
+ Cooperation with partner offices from urban and traffic planning sector, urban water management, energy consulting as well as stakeholder participation
+ Certified quality management system (ISO 9001)

Quality standards and technical competence

GEONET offers high quality and reliable expertise guaranteed by the accreditation according to DIN EN ISO/IEC 17025:2005 (DAkkS*1, ILAC*2) and internal quality management (DIN EN ISO 9001:2008 TÜV Nord). As certified and accredited laboratory, GEONET follows the national and international technical guidelines and standards for the wind industry. The accreditation by DAkkS covers the following procedures: wind measuring and wind data analysis, the determination of wind potential and energy yield of wind turbines, and the determination of reference yield of wind turbines.

GEONET is recognized by banks and public authorities worldwide, ensured via the ILAC Mutual Recognition Agreement.

GEONET is a member of the advisory board for wind consultants of the German Wind Energy Association (BWE, Bundesverband WindEnergie e.V.), of the technical committee of the Society for the Promotion of Wind Energy (FGW, Fördergesellschaft Windenergie), and of the European Wind Energy Association (EWEA).

*1DAkkS = Deutsche Akkreditierungsstelle (German Accreditation Body)
*2ILAC = International Laboratory Accreditation Cooperation

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