

## News from LIFE LOCAL ADAPT

The half-way mark of our Life project is achieved. Meanwhile 15 communities, which undertake measures to adapt to climate change, are actively involved in the project. All project partners who are directly collaborating with these communities have presented themselves in the preceding three newsletters of LIFE LOCAL ADAPT. In this issue you will learn more about the work of the Climate Service Center Germany (GERICS) in Hamburg. In LIFE LOCAL ADAPT GERICS provides harmonized regional climate information, develops a transformability concept and is leading supranational and international communication.

If you are still interested in receiving this information we would like you ask you to register for the newsletter at [www.life-local-adapt.eu](http://www.life-local-adapt.eu).

With kind regards

Prof. Dr. Christian Bernhofer

Project coordinator

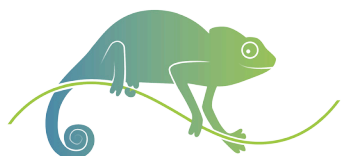
November 2018

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## Project responsibilities of GERICS

HZG-GERICS takes over two tasks within the framework of the project. On the one hand, this involves the harmonized presentation of regional climate information with the corresponding bandwidths; on the other hand, HZG-GERICS

is developing a transfer concept that makes it possible to apply the knowledge gained in the pilot regions to other areas. These two focal points are briefly presented here.

## Regional Climate-Fact-Sheets

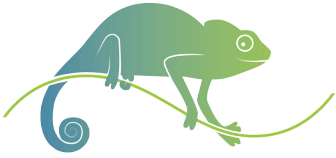
For the planning of many investment projects in the industrial and financial sectors, information on a possible impact of climate change is required before they can be approved. The Climate-Fact-Sheets provide this information in a consistent manner through careful analysis and compilation of a large amount of existing climate data for different countries, regions or climate zones of the world.

In the following years, the original concept was adapted to other issues, e.g. fact sheets for specific sectors or production sites.

The Climate-Fact-Sheets prepared within the framework of LIFE LOCAL ADAPT take up the basic concept and provide the corresponding climate information for the four regions Saxony, Styria, the north-west territory in the Czech Republic and the region around Valka in Latvia. The selected climate parameters were coordinated in the LIFE LOCAL ADAPT consortium. In this way it is ensured that the results are comparable between regions.

The following climate parameters are presented in the Regional Climate-Fact-Sheets.

Temperature-based parameters	Precipitation-based parameters	other parameters
Temperature	Precipitation total	Windspeed
Summer day	Precipitation > 10 mm / day	Winddirection
Hot day	Precipitation > 20 mm / day	Climatic water balance
Tropical nights	Dry days	Sultriness days
Heat wave duration	Wet days	
Days > 5°C		
Heating degree days		
Ice days		
Frost days		
Spring frost days		



The projected climate changes presented in the Regional Climate-Fact-Sheet are based on regional climate projections, which are presented in the framework of the EURO-COREX initiative (<https://www.euro-cordex.net>).

The climate projections in the fact sheet are based on the Representative Concentration Pathways (RCPs.), of which the RCP8.5 represents a “business-as-usual” scenario, RCP4.5 a “medium” scenario, and RCP2.6 a “climate protection” scenario.

34 climate projections were obtained in December 2016 from the ESGF data portal via the data node at the German Climate Computing Centre (<https://esgf-data.dkrz.de>).

In addition, 5 further regional climate projections for RCP2.6 were included, which were created with the regional climate model REMO at GERICS and which are available at the time of writing. In other words, a total of 39 regional climate projections is analyzed. Of these, 14 simulations for the medium (RCP4.5) and 14 simulations for the “business-as-usual” (RCP8.5) emission scenarios are available.

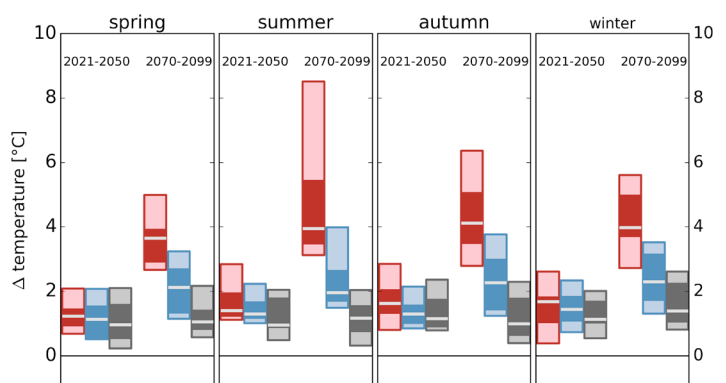
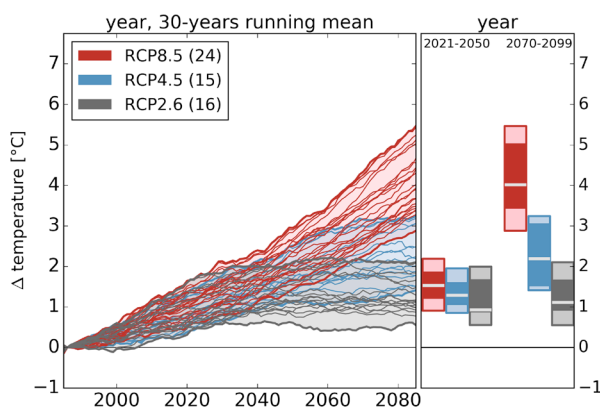
For both scenarios the simulations were crea-

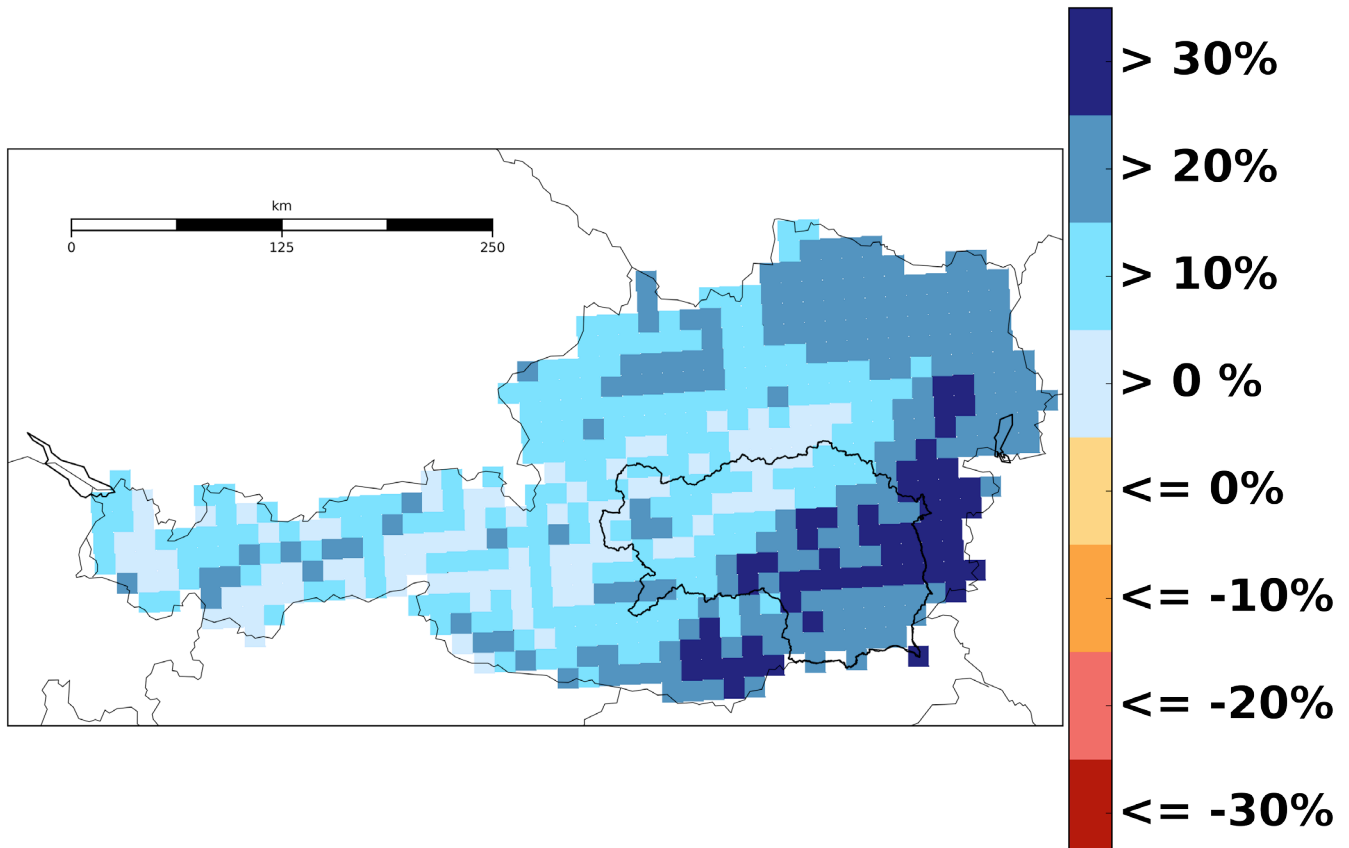
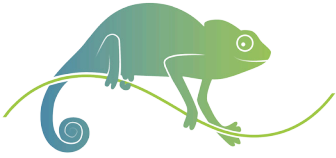
ted with 5 different regional climate models (RCMs).

The regional climate models are forced with data from eight different simulations of different global climate models (GCMs). The table below provides an overview of the regional climate models and their respective global forcing data. 11 simulations are available for the “climate protection scenario” (RCP2.6) so far.

Please note that the ensemble for RCP2.6 is made up of other combinations of GCMs and RCMs as the ensembles for RCP4.5 and RCP8.5. The EURO-CORDEX simulations are available on a grid with a spatial horizontal resolution of 12 km x 12 km. The climate change signals for the different variables presented in this regional climate fact sheet are calculated as the mean value for all grid cells located in this region.

Climate-Fact-Sheets provide information on climate and climate change for regions and climate zones as well as the associated bandwidths in standardised, compressed form as shown in the following figures for temperature and precipitation.





## Transfer concept

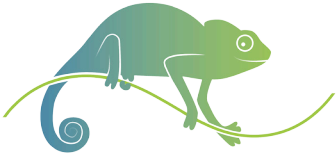
In the four pilot regions (Saxony, Styria, the north-western territory of the Czech Republic and Valke) different approaches are being tested on how information on climate change and its impacts can be integrated into decision-making processes, especially in small and medium-sized municipalities.

It is an important objective of LIFE LOCAL ADAPT to make the knowledge gained available to others. In order to ensure the necessary transfer from the pilot regions also for other applications, HZG-GERICS is developing a corresponding transfer concept.

The approaches pursued in the pilot regions and the results achieved so far are currently being reviewed and evaluated. Building on this, a flexible framework is being developed that will allow interested regions and municipalities to choose the path that suits them best.

This transfer concept will be available at the beginning of next year and will be tested for its practicability during the rest of the project period. Any emerging adjustments to the concept will be taken up continuously until the end of the project and the concept will be further developed accordingly.





# Status Report Saxony

## 11th Annaberger Klimatage on 16. and 17. May 2018 in Annaberg-Buchholz

Every two years since 2001, the Annaberger Klimatage take place in the Ore Mountains in Saxony. Renowned climate scientists and representatives of authorities, associations, chambers and educational institutions discuss the issues of regional climate change.

This year, the main topic was: „Low Mountain Ranges - A White Spot in Climate Change?“. The current state of climate change in the Saxon low mountain ranges was discussed, in particular its influence on the meteorological extremes and the forest.

Other topics included adaptation to the consequences of climate change in the low mountain range as well as risk analysis and communication. As part of the conference, the project LIFE LOCAL ADAPT, its work with small and medium sized communities, the Regional Climate

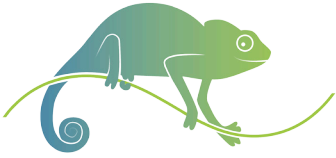
Information System for communities ReKIS kommunal (see below) as well as the municipal winners of the 2017 Competition on Adaptation Measures were presented.

The Annaberg Klimatage is a joint event of the Saxon State Foundation for Nature and Environment with the Saxon State Ministry of Environment and Agriculture, the Saxon State Agency for Environment, Geology and Agriculture, the TU Bergakademie Freiberg, the TU Dresden, the city of Annaberg-Buchholz and the county Erzgebirgskreis as well as the German Meteorological Society and the German Weather Service.

Some presentations are available under:

<https://www.umwelt.sachsen.de/umwelt/klima/22721.htm>





## “ReKIS kommunal” – Regional Climate Information System for Municipalities

ReKIS kommunal is an additional feature of the Regional Climate Information System ReKIS ([www.rekis.org](http://www.rekis.org)), tailored to the needs of Saxon communities.

The web application ReKIS serves for the provision, documentation, evaluation as well as interpretation of climate data and information for the federal states of Saxony, Saxony-Anhalt and Thuringia. On behalf of these federal states and in close cooperation with them, the Chair of Meteorology of the TU Dresden is responsible for the development and provision of ReKIS.

The data, maps, graphics and functionalities offered by ReKIS address primarily experts in the field of climate analysis, familiar with the topics of climate modeling, climate change and climate adaptation. In order to provide communities and municipal administrations with information they require, the Saxon State Office for Environment, Agriculture and Geology (LfULG) and the TU Dresden are developing the addi-

tional tool ReKIS kommunal for Saxony during the project time of LIFE LOCAL ADAPT. In three categories, tailored information is offered for the main target group of small and medium sized communities and their administrations.

### Climate Risks

With the help of an interactive map, specific thematic plots on climate change impacts (heat, heavy rainfall, erosion) can be accessed for each Saxon community and for different periods. Fact sheets summarize the information.

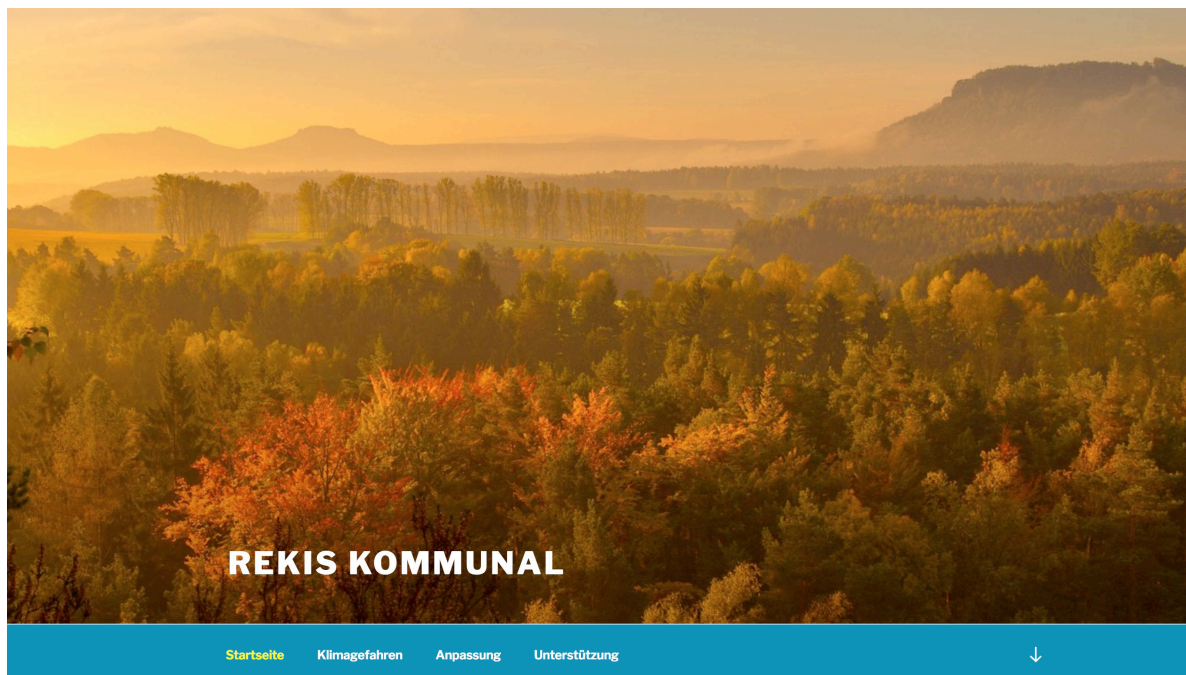
### Adaptation

This site provides information and examples on the topic of adaptation to climate change.

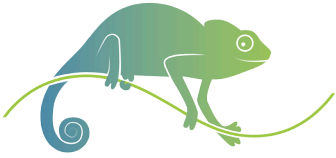
### Support

Advisory services and a list of funding opportunities are intended to help communities to implement their ideas and plans.

Currently the web pages are under construction. From 2019, all functions will be available.







## Workshop on flood and erosion protection in Nossen / Pröda 14.08.18

On August 14, 2018, the Saxon State Office for Environment, Agriculture and Geology (LfULG) presented a practical and cost-effective measure for flood and erosion protection in a workshop within the framework of the EU project LIFE LOCAL ADAPT: The integrated management of arable land in Pröda (near Meissen, Saxony). Following a theoretical introduction to the subject of climate change as well as flood and erosion protection, an on-site visit of the measure took place with the farmer. This measure was technically accompanied by the LfULG between 2011 and 2012 and displayed a feasible way in which arable land can be managed with the help of these two groves and used without any loss of agricultural land. However, the system only works if further ero-

sion-reducing measures are consistently implemented at the same time or before. These are e.g. permanently plow-less (non-turning) tillage and direct sowing, straw on harvested fields and much more.

There was a lively exchange in the diverse circle of participants, which included representatives of the regional directorate of Saxony, the ministry, various authorities and affected farmers. This project serves as an example and suggestion for solutions to similar problems.

Further information and the individual presentations can be found at:

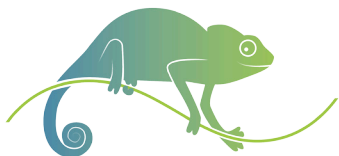
<https://www.umwelt.sachsen.de/umwelt/klima/47158.htm>

Aerial view of the management-integrated grove after completion in 2012 (photo: LfULG 2012). Since then, this has provided flood and erosion protection on the field itself as well as the village lying in the valley.



Protection against erosion by small-scale grove - upper line marks the ridge of the grove (Photo: Caterina Joseph)






## Actions plans in Styria

Climate change is present in all Styrian pilot communities, we were able to convince ourselves of this in the last two workshops held with citizens of the communities of Weiz, Hartberg, Deutschlandsberg, Gleisdorf and Marziazell.

In the first two workshops we discussed how the climate in the respective region will change by the end of the century and above all what this change means for the people living there (e.g. increased heavy rainfall, increase in heat days, dry periods, late frost, etc.). In the last workshop,

regional measures for adaptation to climate change were developed for five sectors (settlement space, security of supply, health, social & education, economy and agriculture/forestry & ecosystems) together with the stakeholders of the respective communities.

From the measures selected for each pilot community, an action plan was then drawn up for each community. The action plans were intended to support the municipalities in implementing concrete measures in all areas.



Graz, November 2018

# Regionale Anpassungsstrategien

Deutschlandsberg

LIFE LOCAL ADAPT Integration of climate change adaptation into the work of local authorities

Das Projekt wird durch das EU-Klimawandelprogramm LIFE gefördert


34 Siedlungsraum

SIEDLUNGSRAUM

Raumplanung und urbane Räume

Der demographische Wandel, sozioökonomische Veränderungen, Verdichtung und Zersiedelung, zunehmender Nutzungswandel und Bodenversiegelung sowie erhöhte Mobilitätsanprüche und wachsende Flächenkonkurrenz sind einige Prozesse, welche die Raumordnung vor große Herausforderungen stellen. Ein Anstieg der Temperatur, Veränderungen in der Niederschlagsverteilung, häufigere Extremwetterereignisse beeinflussen die Natur, was in städtischen Gemeinden und stellen damit einen raumwirksamen Prozess dar, dem besondere Beachtung zukommt. Die Verwundbarkeit und das Risiko werden zusätzlich durch die Ausdehnung von Siedlungsflächen und den steigenden Energieverbrauch in den Gebäuden erhöht. Die Risikoabschätzungen der veränderten Klimabedingungen müssen daher künftig als wesentliche Planungsgrundlage eingehen.

Die Gemeinde ist in vielen Bereichen gefordert, Anpassungsmaßnahmen, Grün- und Wasserflächen, die Gestaltung von Fassaden, Dachflächen von Gebäuden sowie Maßnahmen für die städtische Luftqualität von großer Bedeutung. Ebenfalls gilt es die sparsame und zweckmäßige Nutzung von Flächen (Entsorgung der Versteigerung), Verminderung des motorisierten Verkehrs, Schaffung von kurzen Wegen etc. als wichtigen Part der Raumplanung neben Anpassungs- auch Klimaschutzmaßnahmen zuzugestehen, um zu setzen.

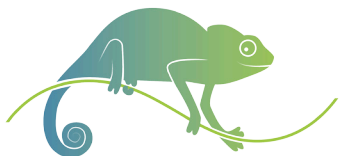


Bildquelle: Stadtgemeinde Deutschlandsberg

42 Siedlungsraum

Maßnahmen-Nr.	BW 3
Maßnahmen-Titel	Klimatologische Verbesserung urbaner Räume, insbesondere Berücksichtigung von mikro-klimatischen Bedingungen bei der Stadt- und Raumplanung (z.B. Prüfung der Möglichkeiten zur Nutzung von Fassaden und Dachflächen in Stadt- und Ortskernen)
Ziel	Optimierung der Lebensbedingungen und der Human- und Wölkungsbedingungen sowie Reduktion des Wärmeinhalts durch die Stadt- und Raumplanung.
Kurzbeschreibung & Umsetzungsziele	<p><b>Kurzbeschreibung:</b> Durch die Verdichtung der Anzahl der Häuser bis Mitte des 21. Jahrhunderts in Deutschlandsberg ist auf die klimatische Verbesserung von urbanen Räumen und die Verminderung von Hitzebelastung besonders Wert zu legen. Die Mikro- und Mesoklima in urbanen Gebieten wird insbesondere von der Bebauung, der Versiegelung, dem Verkehrsaufkommen, der Abwärme und den Luftschadstoffemissionen etc. beeinflusst. Diese Veränderungen erschweren das Stadtklima, welches sich durch erhöhte Lufttemperaturen im Jahresmittel, geringere nächtliche Abkühlung, eine geringere relative Luftfeuchtigkeit und weniger Windgeschwindigkeit sowie eine bis zu 10 Tage längere Vegetationsperiode auszeichnet.</p> <p>Der Wärmeinhaltsindex, der die erhöhte Temperatur in urbanen Räumen im Vergleich zum Umland, hat sich durch eine Vielzahl an baulichen und strukturellen Maßnahmen erhöhen können. Die Begrünung von Dachflächen und Fassaden in Stadt- und Ortskernen kann dabei eine ausgleichende Funktion übernehmen. Daher gilt es, sich die Bauplanungsaktivitäten in besonders gefährdeten Ortskernen anzusehen und Möglichkeiten der Nutzung von Fassaden und Dachflächen zu erhalten.</p> <p><b>Umsetzungsschritte/verfügbare Aktivitäten:</b></p> <ul style="list-style-type: none"> <li>• Erstellung eines Katalogs zu möglichen Hitzezeiten in Städten und Ortskernen</li> <li>• Erhebung von geeigneten Gebäuden für Fassaden- und/oder Dachflächenbegrünung</li> <li>• Entwicklung eines Masterplans für die Umsetzung von Begrünungsmaßnahmen im städtischen Bereich</li> <li>• Veränderung der Bebauungspläne, z.B. durch Verwendung von hellen Farben, durch entsprechende Oberflächenbegrünung</li> <li>• Vermeidung weiterer Bodenversiegelung</li> <li>• Veränderung des Wasserhaushalts, z.B. durch Schaffung von Verdunstungsflächen zur Kühlung und/oder durch Schattierung der Bewässerung von Grünflächen</li> <li>• Freibaltung und Schaffung von Luftleitbahnen und Klimakorridoren zur Nutzung der kühleren Temperaturen im Umland</li> <li>• Berücksichtigung von mikro- und mesoklimatischen Bedingungen bei der Erstellung von strategischen Instrumenten (Richtungsplanung, Bebauungsplan, Stadterneuerungsplan etc.) durch verstärkten Einsatz von Digital-Tools (z.B. Simulationen, 3D-Modellierung etc.) zur Stadtplanungsentwicklung</li> <li>• Erhöhung des Wasseranteils in der Stadt (Regenwassermanagement, Erhöhung des Anteils an Wasserflächen, Freigeben von versiegelten Gewässern etc.)</li> </ul>
Verantwortung	Gemeinde
Umsetzungshorizont	
Budgetveranschlagung	
Messindikatoren	Anzahl der Dach-/Fassadenbegrünungen
Anlaufpunkt	Stmk. BauG, SRGOG 2010, Bebauungspläne





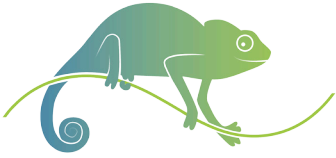
## **Adaptation strategy of Litoměřice has been finalized**

Within the LIFE LOCAL ADAPT project we co-operated with the Litoměřice city council representatives on the development of Sustainable Energy and Climate Action Plan (SECAP) for Litoměřice city.

As part of the SECAP plan, Adaptation Strategy of the city has been formulated in close cooperation with LIFE LOCAL ADAPT project. The Adaptation Strategy is focusing on climate change-related problems (such as heatwaves

and extreme heat, extreme precipitation and insufficient rainwater retention, floods and drought) and consequent adaptation solutions.

The identified adaptation measures focused mainly on use of nature-based solutions as well as technical measures (e.g. buildings adaptation to changing climate). Litoměřice city council approved the SECAP of Litoměřice on 13th September 2018.



# LIFE LOCAL ADAPT 2. Project Meeting

## Second LIFE LOCAL ADAPT project meeting at GERICS

The second joint project meeting after the kick-off in August 2016 took place in June 2018. Each of the annual meetings is hosted by one of the project partners. This year's meeting was hosted by the Climate Service Center Germany (GERICS).

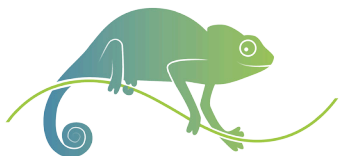
In addition to the presentation of the previous activities in the four project regions, cross-task and cross-regional topics were also discussed in smaller working groups according to the focal points of the work.

Another important topic of the annual conference was the presentation, planning and orga-

nisation of the cooperation between the project partners for the next project steps. The forthcoming tasks include questions on the standardisation of the fact sheets, the forthcoming project assessment in spring 2019 or the planning of the first joint dissemination activities. In this context, it was decided to submit a proposal for a session for the ECCA conference in Lisbon next year. It was decided to conduct the session together with other projects funded by EU-LIFE.

The two-day project meeting helped to promote communication among the project partners and the progress of the project.





### LIFE LOCAL ADAPT project presented at ALiZi workshop

LIFE LOCAL ADAPT project was presented at ALiZi Workshop Umwelt, which was organized in Zittau on 16th May 2018.

ALiZi project focuses on cross-border cooperation between Liberec and Zittau in various thematic areas.

At the workshop, outcomes and approaches of LIFE LOCAL ADAPT project were presented by two speakers. Eliška K. Lorencová (CzechGlobe) shared experiences from Czech small and medium-size municipalities and Thomas Gottschalk (ZSG mbH) from German municipalities.



Photo source: Liberec, <https://www.liberec.cz/cz/radnice/strategie-projekty/projekty-mesta/alizi/aktuality/zivotni-prostredi-hranice-nedeli-shodli-se-zitave.html>

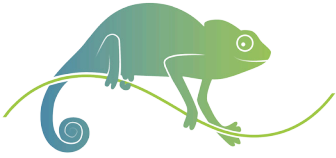
### LIFE LOCAL ADAPT project presented at ESP conference

Outcomes of LIFE LOCAL ADAPT project were presented during ESP Regional conference (<https://www.espconference.org/eu2018>), which took place 15 - 19 October 2018 in San Sebastián, Spain.

The conference theme was focusing on ecosystem services in a changing world: moving from theory to practice. Zuzana Harmáčková (from Stockholm Resilience Centre and CzechGlobe) presented results from LIFE LOCAL

ADAPT project focusing on stakeholder preferences for ecosystem-based adaptation measures in Czech cities.





### Preparations for ECCA 2019 conference

LIFE LOCAL ADAPT project is preparing for European Climate Change Adaptation conference (ECCA 2019).

ECCA 2019 (<https://www.ecca2019.eu>) as a science-policy-practice platform, provides an opportunity to share and learn from adaptation practices, research outcomes and engage with stakeholders across Europe. The ECCA 2019 conference will take place in Lisbon, 28th - 31st May 2019 and calls for session proposals and abstracts are open until 31st October 2018.



LIFE LOCAL ADAPT project plans to organize a session to share results and present approaches and experience in climate change adaptation of small and medium-size municipalities in Europe.

### 11. Municipal Climate Conference, 6 - 9 December 2018

Berlin, 6 - 9 December 2018

<https://www.klimaschutz.de/11.Klimakonferenz>

### European Geosciences Union General Assembly 2019, 7 - 12 April 2019

Vienna, Call for Abstracts 10 January 2019

<https://www.egu2019.eu/>

### 20. Österreichischer Klimatag, 24. - 26. April 2019

Vienna, Universität für Bodenkultur, 24.- 26. April 2019

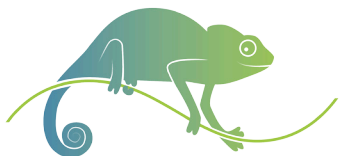
<https://klimatag-portal.ccca.ac.at/>

### Resilient Cities 2019, 26 - 28 June 2019

The 10th Global Forum on Urban Resilience and Adaptation will take place from 26 - 28 June 2019 in Bonn / Germany.

<https://resilientcities2019.iclei.org/>





# Team members of LIFE LOCAL ADAPT

## Technische Universität Dresden, Germany

Christian Bernhofer, Valeri Goldberg, Majana Heidenreich,  
Barbara Köstner, Rico Kronenberg and Ines Schmidt



## Helmholtz-Zentrum Geesthacht / GERICS, Germany

Jörg Cortekar, Claas Teichmann and Uwe Kehlenbeck



## Saxon State Office for Environment, Agriculture and Geology (LfULG), Germany

Caterina Joseph, Dominic Rumpf, Andreas Völlings and  
Werner Sommer

LANDESAMT FÜR UMWELT,  
LANDWIRTSCHAFT  
UND GEOLOGIE



## Provincial Government of Styria, Austria

Andrea Gössinger-Wieser, Adelheid Weiland and Bettina Fischer



## CzechGlobe – Global Change Research Institute, The Czech Academy of Science, Czech Republic

Eliška K. Lorencová, Vojtěch Cuřín, David Vačkář and Manuel Acosta



## Valka Municipality, Latvia

Inga Aleksejeva and Jana Putniņa



For further information please visit our website: [www.life-local-adapt.eu](http://www.life-local-adapt.eu)

The newsletter was compiled by Climate Service Center Germany (GERICS)

### Imprint

Technische Universität Dresden  
Institute of Hydrology and Meteorology  
Chair of Meteorology

01062 Dresden, Germany  
<https://tu-dresden.de/bu/umwelt/hydro/ihm/meteorologie>  
Contact: [barbara.koestner@tu-dresden.de](mailto:barbara.koestner@tu-dresden.de)