

News from LIFE LOCAL ADAPT

This is the last newsletter of the LIFE LOCAL ADAPT project. After a project extension of six months due to Covid-19, the project duration ended on December 31, 2021. The last months were mainly used to catch up on postponed workshops with the now more than 30 active municipalities. These were held partly in person and partly - mainly due to the pandemic - as digital events.

Final results of LIFE LOCAL ADAPT were presented at the Status Colloquium Climate of the Saxon State Office for Environment, Agriculture and Geology (LfULG). It is particularly pleasing that the final meeting of the project with all partners could take place in Dresden in presence. This will be reported in the newsletter.

Despite the difficult circumstances during the pandemic, it has been shown that many new communities are interested in the goals of LIFE LOCAL ADAPT and participate in a transfer. Also new, continuing projects in the regions could be initiated.

You can still find the project results, all newsletters and contacts on the project website at www.life-local-adapt.eu.

We thank you for your interest and wish you all the best for 2022.

With kind regards and best wishes for good health

Prof. Dr. Christian Bernhofer

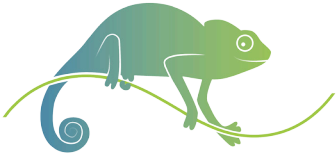
Project coordinator

April 2022

IN THIS ISSUE

News from LIFE LOCAL ADAPT	1
• Final Project Meeting	2
• Focus Report SAXONY	5
• Focus Report GERICS	8
• Focus Report STYRIA	10
• Focus Report CZECHGLOBE	14
• Final Conclusive Statement	17





Final Project Meeting

Final LIFE LOCAL ADAPT Project Meeting in Dresden

On the 10. and 11. November 2021, the final meeting of LIFE LOCAL ADAPT took place in Dresden. Fortunately, this meeting could be held with all partners in person. The aim of the meeting was to summarize all the work and results achieved by the individual partners and to discuss important experiences and examples of good practice. Thereby the networking among each other and with new partners was strengthened and possible subsequent projects were discussed.

It has been shown that especially in the case of the partners Styria and Saxony, which at the same time represent state authorities, the transfer to new municipalities and local administrations has already taken place very successfully within the project period. At the beginning of LIFE LOCAL ADAPT, about 15 municipalities were targeted as practice partners. In the course of the project, 16 municipalities have already started implementation of adaptation measures, and 43 municipalities have participated in preparatory measures such as workshops, development of individual action plans and competitions.

Among them is the municipality of Valka, which

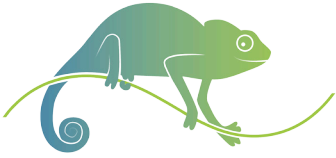
is also a project partner and has also carried out an implementation project. Through follow-up activities, there are now offers for all 419 municipalities in Saxony on the ReKIS kommunal platform (www.rekis.org). Styria now address 136 new municipalities with support to adapt to climate change. In both Saxony and Styria, a new position is created for the continuation of the work.

At the partner CzechGlobe the developed methods of participatory workshops were used in further projects and among others the concept of nature-based solutions for adaptation measures was further developed in future projects.

Four new central brochures were presented by the coordinating partner TU Dresden, which are based on joint work of the project partners. They refer to the following topics

1. introduction to climate adaptation for municipalities,
2. increasing resilience to heavy rainfall,
3. increasing resilience to heat and
4. increasing resilience to soil erosion.





Final Project Meeting

All brochures, as well as other materials developed during the project, will be available through the website <https://life-local-adapt.eu/de> even after the end of the project period.

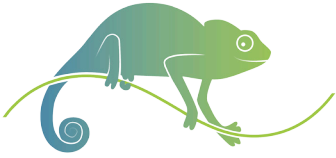
Overall, the project was considered very successful by the project partners. In particular, it was helpful that the coordinating tasks from application to project completion did not have to be performed by the individual partners, but were taken over by the TU Dresden.

The establishment of climate adaptation measures at the level of the regional administration and at the level of the municipalities could not otherwise have been achieved to this extent.

Delays due to Covid-19 must be resolved over time. This can be achieved through follow-up projects already underway and targeted, as well as further networking among LIFE LOCAL ADAPT partners.



Group picture of the participants of the closing event Foto: TU Dresden



Follow-up projects of LIFE LOCAL ADAPT and further activities of LIFE LOCAL ADAPT partners

Federal Republic of Germany

WIRKsam (Climate Service Center Germany)

<https://www.gerics.de/science/projects/detail/086832/index.php.en>

Saxony, Germany

KlimaKonform (Chair of Meteorology, TU Dresden)

<https://klimakonform.uw.tu-dresden.de/>

General climate change website of the Saxon government

<https://www.klima.sachsen.de/>

ReKIS: Regional climate information platform with module on municipalities (REKIS kommunal)

www.rekis.org

Styria, Austria

General platform of the climate action program at the regional authority of Styria

<https://www.ich-tus.steiermark.at/>

Platform for climate action of communities

www.gemeindeservice-stmk.at

Platform of the CC natural hazard check

<https://www.naturgefahrenimklimawandel.at/>

CzechGlobe, Czech Republic

CzechGlobe climate information platform CzechAdapt:

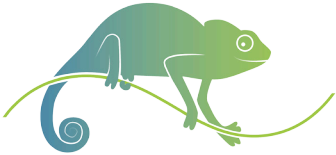
<https://www.klimatickazmena.cz/>

CzechGlobe project information and outputs on platform

www.ecosystems-services.cz

Valka, Latvia

<http://www.valka.lv/lv/valkas-novads-1/pasvaldiba-1/projekti-2/-life-local-adapt>



Priorities and activities

The focal points of the LIFE LOCAL ADAPT project in Saxony were:

- Identifying concrete climate change-related risks for Saxon municipalities
- Accompanying the municipalities in the risk assessment and development of solutions
- Supporting selected municipalities with the implementation of pilot projects.

The main activities of LfULG were connected to the two contests in 2017 and 2019. Saxon municipalities could participate with their project ideas for climate adaptation measures. A total of 19 municipalities submitted 25 project ideas, of which twelve were ultimately selected by a jury. The winners were supported in the further development of the project ideas by:

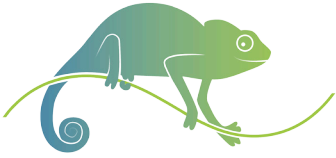
- Support for the development and planning process in the municipality
- Financing of the further planning steps (in total 335,600 EUR)

- Support for public relation and citizen participation.

By the end of 2022, the further planning phases of the winning projects were mostly completed. Some of the municipal projects are now being implemented thanks to funding from Saxon funding programmes.

Due to Corona, various workshops and public participation formats had to be postponed, re-designed or even cancelled in some cases. Two workshops on the topics of erosion reduction and health care were successfully carried out, as well as numerous workshops in the winning municipalities in the course of project processing.

The web application Regional Climate Information System ReKIS is used to provide, document, evaluate and interpret climate data and climate information in the federal states of Saxony, Saxony-Anhalt and Thuringia. ReKIS had originally been tailored to be used by experts.



Within the framework of LIFE LOCAL ADAPT, ReKIS was extended by a special portal area for municipalities: ReKIS KOMMUNAL.

The aim was to prepare and further develop the offers to be used by municipal administrations. The new portal was developed over the course of the project, tested with users and further revised. Saxon municipalities can now find municipal climate checklists here as well as information on climate risks and adaptation options.

At the LfULG, the activities and competences on regional climate change and climate adaptation were previously integrated in the „Clima-

te and Air Quality“ unit. On 1 September 2021, the “Competence Center for Climate Change” was founded in order to make the LfULG’s services more visible and - based on the experience gained in LIFE LOCAL ADAPT - to expand them.

The results of the LIFE project are also being further tested and developed in a BMBF-funded project „KlimaKonform“. One focus of „KlimaKonform“ is the expansion of a concept for climate coaching in municipalities, which builds on the initial concepts and experiences of LOCAL ADAPT.

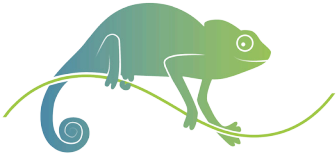
Climate protection and climate adaptation

Climate protection and climate adaptation are different aspects and necessities of anthropogenic climate change. Climate adaptation measures are necessary to limit economic, ecological and human damage caused by the impacts of climate change.

LIFE LOCAL ADAPT has supported municipalities in finding suitable climate adaptation measures. However, climate protection to reduce greenhouse gas emissions (GHG) is still necessary, as this is the only way to avoid irreversible systemic changes that would exceed the adaptive capacity.

In order to address also the topic of climate protection in the project, the role of carbon dioxide sequestration and release in the non-energy sector was investigated using the example of the municipality of Tharandt.

Tharandt was chosen because of the existing GHG monitoring network of the TU Dresden in the municipality and its immediate vicinity. This allows an independent examination of the nationally and regionally derived emission factors and as well as deeper insights into the dynamics of the GHG fluxes.



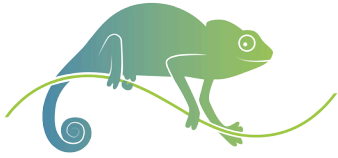
Focus Report Saxony

The results of this work show how important the age structure and sustainable management of forests are for carbon sequestration. Forest owners, including municipalities, have

the power to contribute to carbon sequestration in their forests and to continue the conversion to robust forests adapted to current and future climatic conditions with increasing extremes.



Measuring towers of the TU Dresden (Chair of Meteorology) in the Tharandter Forest to determine the water and carbon flows. Photo: Ronald Queck



New products and areas of activity

In the course of LIFE LOCAL ADAPT, the Climate Service Center Germany (GERICS) was able to strengthen three activities.

The most important development was the expansion of the product portfolio in the area of Climate Fact Sheets. Before the start of the project, Climate Fact Sheets were only produced at country level - the so-called Country Climate Fact Sheets.

With the project, these Climate Fact Sheets were developed for sub-national regions and named

“Regional Climate Fact Sheets”, which in part also led to an improvement in user-friendliness and the use of spatially higher-resolution climate data.

In addition, the further development of the Climate Fact Sheets to the next smaller level has led to the consistent continuation of this development and the creation of Fact Sheets also at the local level, e.g. counties, or specific locations, e.g. production sites or infrastructures such as bridges.

Climate Fact Sheet
Saxony

Projected climate changes

Symbols of the expert judgement on the robustness of the projections

- Increase:** The majority of the simulations projects significant increases
- Decrease:** The majority of the simulations projects significant decreases
- Unclear:** The majority of the simulations projects significant changes, but do not agree on the direction of changes
- Tendency towards an increase:** The majority of the simulations projects non-significant increases
- Tendency towards a decrease:** The majority of the simulations projects non-significant decreases
- No changes:** The majority of the simulations projects non-significant increases, with no preferred direction of changes

Projected changes of temperature-based indices

Annual and seasonal temperature

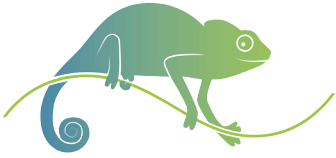
For all three RCPs an increase of the temperature is projected.

The bandwidth of projected annual changes for the middle of the 21st century spans from 1.4 to 2.9 °C for RCP6.5, from 0.8 to 2.5 °C for RCP4.5, and from 0.4 to 2.3 °C for RCP2.5.

For the end of the 21st century, the projected annual increases for RCP6.5 is between 2.6 and 5.1 °C, for RCP4.5 between 1.2 and 3.1 °C, and for RCP2.5 between 0.4 and 1.9 °C.

Parameter	Climate Changes for a			Details
	Business as usual scenario	Medium scenario	Climate protection scenario	
temperature	increase	increase	increase	pp. 4, 14
summer days	increase	increase	increase	pp. 5, 14
hot days	increase	increase	increase	pp. 5, 14
tropical nights	increase	increase	increase	pp. 6, 14
length of hot periods	increase	increase	tendency towards increase	pp. 6, 14
days > 3 °C	increase	increase	increase	pp. 7, 14
heating degree days	decrease	decrease	decrease	pp. 7, 14
cool days	decrease	decrease	decrease	pp. 8, 14
spring frost days	decrease	decrease	decrease	pp. 8, 14
precipitation	tendency towards increase	tendency towards increase	tendency towards increase	pp. 8, 14
precipitation > 20 mm	increase	tendency towards increase	tendency towards increase	pp. 8, 15
dry days	no changes	tendency towards decrease	tendency towards increase	pp. 10, 15
wet days	no changes	tendency towards decrease	tendency towards decrease	pp. 10, 15
pH	increase	tendency towards increase	tendency towards increase	pp. 11, 15
pH _{min}	increase	tendency towards increase	tendency towards increase	pp. 11, 15
wind speed	no changes	tendency towards decrease	tendency towards decrease	pp. 12, 16
water balance	no changes	tendency towards increase	no changes	pp. 12, 16
sunshine	increase	increase	increase	pp. 13, 16

Regional Climate Fact Sheet for Saxony/Germany (© GERICS)



Focus Report GERICS

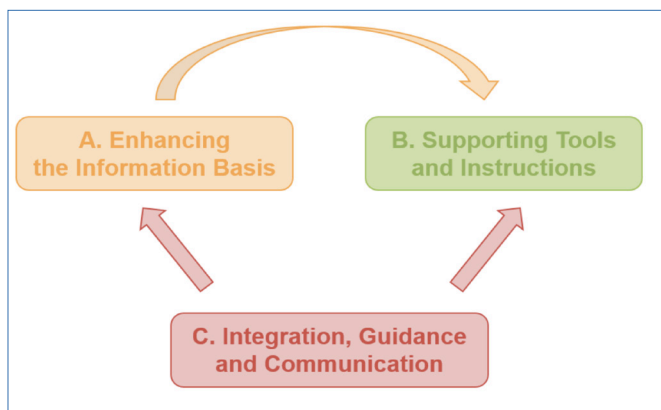
In addition to the fact sheets, the work on transfer and transferability was further intensified as part of LIFE LOCAL ADAPT.

How can approaches successfully tested in one region be transferred to other regions?

For this purpose, we developed a transfer concept and a guidance document together with

the project partners.

On the one hand, we were able to draw on initial experience in this area from other projects, and on the other hand, we were able to gain valuable knowledge within the framework of LIFE LOCAL ADAPT in order to design future transfer activities more efficiently and in a more targeted manner.



Guidance Document		LIFE LOCAL ADAPT
Content		Integration of climate change adaptation into the work of local authorities
Introduction - Transfer Concept		
A. Enhancing the Information Basis	B. Supporting Tools and Instructions	C. Integration, Guidance and Communication
Best Practice: <ul style="list-style-type: none"> Local Climate Fact Sheets <ul style="list-style-type: none"> Experiences Problems and Solutions More Products and Services: <ul style="list-style-type: none"> Regional Climate Fact Sheets Heavy Rain Fact Sheets Heat Stress Fact Sheets Funding Opportunities Fact Sheets 	Best Practice: <ul style="list-style-type: none"> Identification of Climate Change Adaptation Measures <ul style="list-style-type: none"> Experiences Problems and Solutions Climate Change Adaptation Strategies and Action Plans <ul style="list-style-type: none"> Experiences Problems and Solutions More Products and Services: <ul style="list-style-type: none"> Data Assessment and Analysis of Climate Change Adaptation Risk and Vulnerability Assessment Regional Climate Information System (ReKIS) Contest on Pilot Measure 	Best Practice: <ul style="list-style-type: none"> Climate Coach <ul style="list-style-type: none"> Experiences Problems and Solutions More Products and Services: <ul style="list-style-type: none"> Workshops
		Supplemental Information References and Websites Contact Details
<small>Transfer of LIFE LOCAL ADAPT Products and Services - Guidance Document</small>		

Scheme of the transfer concept developed in LIFE LOCAL ADAPT and content of the Guidance Document

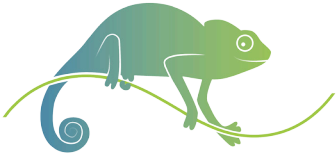
The third important further development is on a meta-level. Until the start of LIFE LOCAL ADAPT, work on adaptation to the impacts of climate change focused essentially on cities.

With LIFE LOCAL ADAPT, the focus shifted more to small and medium-sized municipalities with up to 100,000 inhabitants.

These are equally affected by climate change, but generally have very specific challenges that are not comparable with those of large cities.

Although the Climate Service Center Germany was not directly involved in working with the municipalities, we were able to gain important insights in this regard that have been very helpful for our work.

Last but not least, the project has helped us to add valuable new partners to our network. We look forward to successfully continuing the work started here in further projects.



Within the LIFE LOCAL ADAPT project, we as the province of Styria had the great opportunity to support five Styrian municipalities (Hartberg, Weiz, Gleisdorf, Mariazell and Deutschlandsberg) on their way to adapt to climate change.

Together with the great commitment of the five

Styrian municipalities we developed a regional climatological fact sheet, an individual and local adaptation plan, we conducted a natural hazard check in each municipality and through the project each municipality got the opportunity to implement one measure from the action plan.

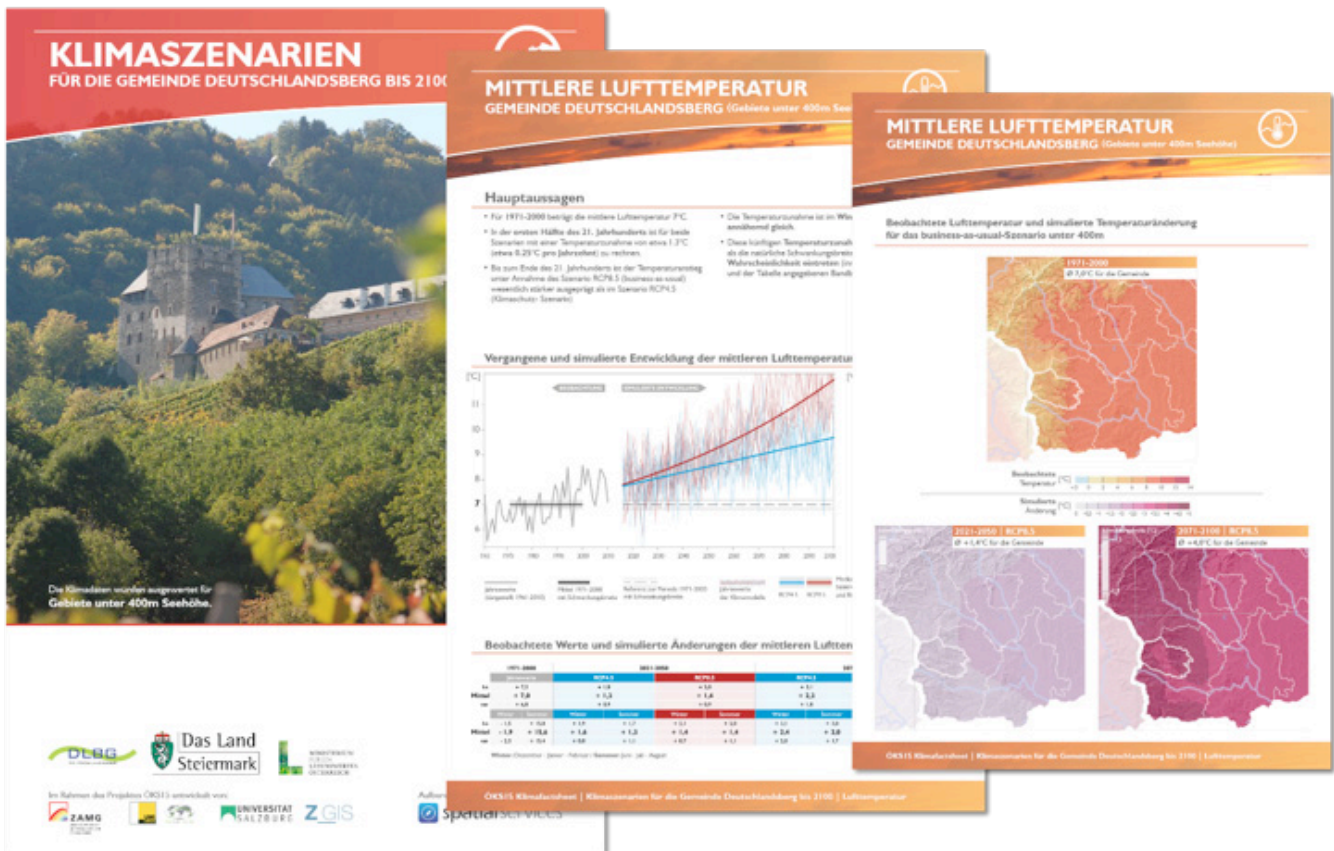
Regional Factsheets

At the beginning of the project, it was essential to know the current as well as the future climatic situation of each community to define measures for the action plans. Therefore, we decided to create a climatic fact sheet for each community.

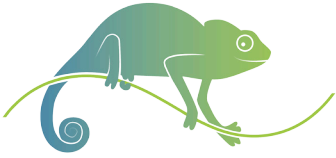
During a workshop, indicators were defined to-

gether with a meteorologist from ZAMG and it was discussed which indicators should be evaluated for the factsheet.

Thus, in addition to the indicators temperature and precipitation, each community had the possibility to have three individual indicators.



Climatological factsheet for municipalities, © Regional Government of Styria

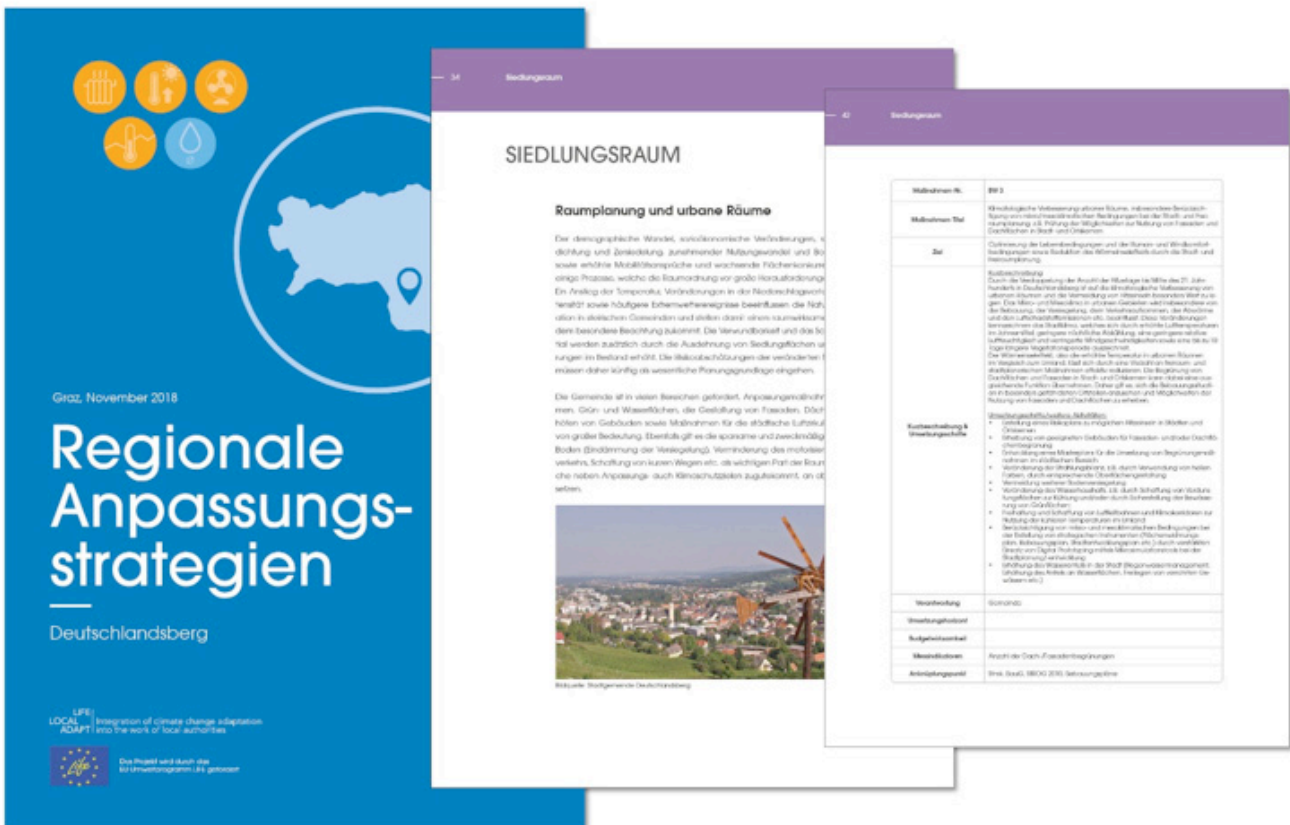


Regional Adaptation plan

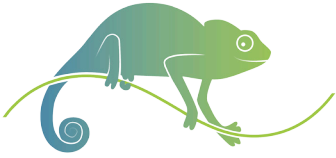
In the next step, the regional action plan with measures for adaptation to climate change was developed in the course of some workshops. For this purpose, in a first step, a screening of some existing adaptation plans (national and international) was carried out by the province of Styria and presented to the communities. Together, the measures were evaluated and

we discussed which ones should be included in the respective action plan and, most importantly, which measures could be implemented by the municipalities.

In the end, each community had an action plan of about 70 pages with 30 to 40 measures individually tailored to the communities.



Regional adaptation plan, © Regional Government of Styria



Natural hazard checks

In the course of the project period, a precautionary check „Natural Hazards in Climate Change“ was developed by the federal government (together with the federal states).

The aim of the precautionary check is to sensitize municipal decision-makers and actors to the locally relevant natural hazard and climate risks and to strengthen risk awareness and precautionary capacity within the sphere of action of the municipality.

This approach identifies both existing precau-

tionary potentials and possible needs for action for the four pillars of precaution (area precaution, building precaution, behavioral precaution and risk precaution) in order to be even better prepared for disasters and the challenge of climate change.

The communities receive a report of the current status and an action plan with concrete ideas for preparedness in the area of natural hazards affecting the community. As part of the project, we were able to offer a natural hazard check to all five Styrian municipalities.



Natural hazard checks in the Styrian pilot communities, © Regional Government of Styria

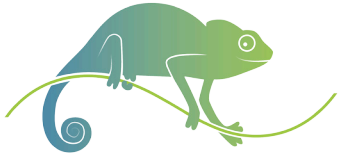
Implementation measures

At the end of the project, the municipalities went into implementation. All five communities had the opportunity to implement a measure from the action plan.

The municipality of Deutschlandsberg and the municipality of Mariazell set up a drinking fountain for the population in their communities. Hartberg developed a concept for sustaina-

ble procurement in which the topic of climate change will be taken into account with every new purchase in the future; the employees of the municipality were also specially trained for this purpose.

Gleisdorf often has to deal with the problem of slope water in some places - with the help of the project, a slope was planted with vegetation



and professionally stabilized so that no more erosion can take place in the future.

And Weiz has greened a bus stop as part of the

project, so that in the future the population no longer has to suffer from the heat when waiting for the bus.



Installation of the drinking fountain in Deutschlandsberg, ©Irmtraud Pribas
Greening of a bus stop in Weiz, ©Barbara Kulmer

What's next

Through the EU project LIFE LOCAL ADAPT many new cooperations with municipalities have been established. The project „Climate Change Adaptation Communities of Styria“ was launched.

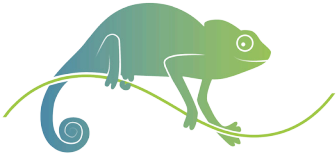
With the help of this project, a workshop on adaptation to climate change was developed with 10 Styrian municipalities, an action folder with adaptation measures was created and a natural hazard check was carried out.

With the project „Climate Change Adaptation in the Styrian Central Region“ the same was done for another 52 Styrian municipalities. And

for next year, another 30 municipalities will be given the opportunity to carry out a natural hazard check.

Through the project, we have been able to build up a lot of know-how in the area of adaptation to climate change, and through cooperation with our partners we have also learned a lot and received valuable input for our own communities.

The LIFE LOCAL ADAPT project was a great help for us when it comes to preparing all Styrian municipalities for adaptation to climate change in the future.



Cooperation with four municipalities

During the LIFE LOCAL ADAPT project, the CzechGlobe team worked towards the incorporation of climate change adaptation into the policy level and the work of local decision-makers in Northwest Czechia.

We were honoured to co-operate with 4 muni-

cipalities – Ústí nad Labem, Litoměřice, Cheb and Kadaň. Together with local stakeholders, we aimed to analyse climate change impacts and vulnerability, identify appropriate adaptation measures, and develop principles for adaptation strategy and planning.

- contacted in the 1. round
- contacted in the 1. and 2. round
- cooperation in process
- cooperation successfully finished

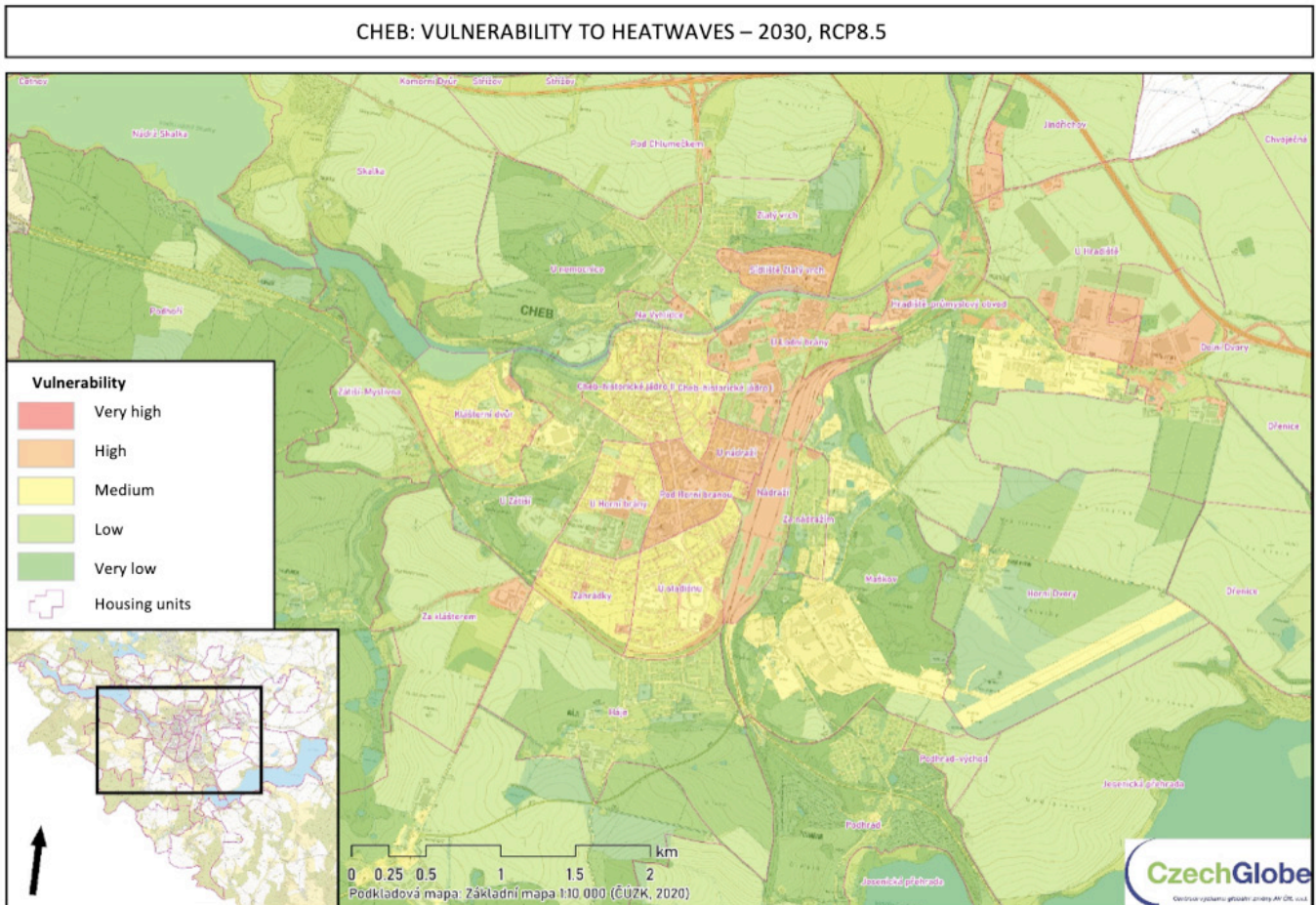
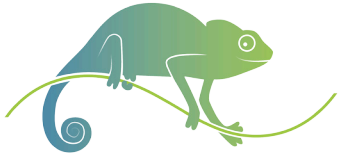


Im Rahmen von LIFE LOCAL ADAPT kontaktierte Gemeinden in Nord-West-Tschechien

First, on the agenda, there were vulnerability analyses that were done for each city involved in the project. The vulnerability analyses were conducted to two major climate change threats in the region – heatwaves and extreme precipitation.

The analyses included exposure, sensitivity,

and adaptive capacity, considering also the population living in the area. They revealed the areas that are more vulnerable to the impacts and where the residents experience the negative effects in current climate conditions and in future under the scenarios RCP4.5 and RCP8.5 in 2030.

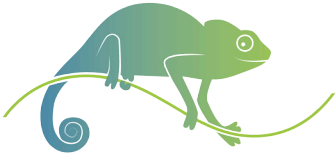


Example of the vulnerability analysis: Vulnerability to heatwaves in 2030 under scenario RCP8.5 in Cheb, Czechia (legend: red = very high vulnerability, orange = high vulnerability, yellow = medium vulnerability, light green = low vulnerability, dark green = very low vulnerability).

To have a better picture of the local impacts of climate change in cities, we organised participatory workshops together with municipalities and local stakeholders.

These allowed us to identify the most experienced impacts and map the localities that are

the most affected. The discussion and identification of climate change impacts further enabled to focus on adaptation measures that would best fit the localities and discuss the possible ways of implementation and its barriers.



Photos from workshops: city stakeholders discussing and identifying climate change impacts.

Altogether, we were able to manage six participatory workshops with municipalities (one on-line) that focused on gaining inputs from relevant stakeholders. The collected data served as complementary information to vulnerability analysis and basis for selection of adaptation measures. The workshops ensured the ownership of the developed adaptation strategies.

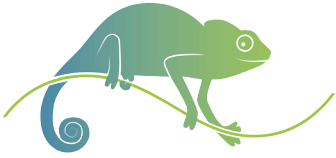
As a part of cooperating with municipalities, we have conducted two analyses of the benefits of certain adaptation measures.

First, analysis of benefits of planting trees and shrubs in fortification moat park in Cheb, where we tried 3 different scenarios to find out various benefits of tree plantings in different locations. This analysis can be further used by the municipality when deciding on preferences in the benefit delivery of adaptation measures.

Second, the analysis of the cost and benefits of the rainwater use in the area of elementary school Sluníčková in Kadaň revealed the expenses connected to the implementation of rainwater reuse system on an already existing building and many benefits that it can provide.

During the project, we learned that municipalities have different socio-economic backgrounds, reflecting their needs, which should be considered in adaptation planning. The local knowledge has been crucial for the recognition of the most affected areas on the small scale and setting priorities of involved municipalities.

In future, we will be able to use the lessons learned during the project and apply and enhance the methods in urban areas, and hopefully, contributing to adaptation to climate change.



Final conclusive statement

LIFE LOCALADAPT focused on climate change adaptation due to expected increases in heavy rain and heat waves in the future. Adaptation is an urgent need for local municipalities to protect citizens and the environment against impacts of these heavy impact events, like flood damages or serious health issues. An important additional aspect is to lower the risk of economic losses in the community.

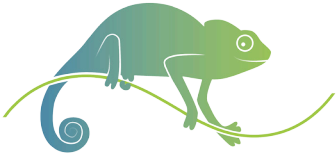
Four regions in Europe cooperated to improve the internal official and external communication as well as the implementation of measures.

About one third out of more than 40 communities, being addressed in Austria, the Czech Republic, Germany and Latvia already implemented adaptation measures during the course of the project.

Without ignoring climate mitigation, climate change adaptation has to be financially and technically supported at the municipal level, at best by introducing climate coaches, who help to understand the complex process and finally to prioritize the actions needed.

Major achievements of LIFE LOCAL ADAPT

- More than 30 fact sheets on regional and local climate change, funding programmes, heavy rain resilience, heat stress resilience and good-practice examples
- More than 50 workshops with municipalities
- 43 active municipalities within the project phase
- 16 municipalities with planned or already implemented measures
- Follow-up activities will address more than 500 municipalities
- Establishment of climate coaches as permanent positions in Saxony and Styria
- Extension of the Regional Climate Information System ReKIS by climate services especially addressing municipalities (ReKIS kommunal)
- Basic contribution to the recently founded Competence Centre for Climate Change in Saxony



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Eine Einrichtung des Helmholtz-Zentrums Hereon

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For further information please visit our website: www.life-local-adapt.eu

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