

Digitalisation Resources Solar Climate Change
Local DNA Megatrends Polycentric Climate
Policy Ecology Sustainability Energiewende
A State, capable of transforming Computer
Roadmap for the future development of
Saxony-Anhalt's city network Autonomous
Driving Transformation Wind Farm E-Health
Geothermal Energy Broadband Connection
Climate Protection Mobility Environment
Biogas Urban Region Storage Triggers Grid

A State, capable of transforming

Roadmap for the future development of
Saxony-Anhalt's city network

Short Version

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Future – Summary

This publication represents a short summary of the “Roadmap for the future development of Saxony-Anhalt's city network” first published in May 2019 by the Kompetenzzentrum Stadtumbau (Competence Centre for Urban Development) Sachsen-Anhalt, hosted by Sachsen-Anhaltinische Landesentwicklungsgesellschaft mbH (State Development Corporation of the State of Saxony-Anhalt, SALEG).

Download from www.kompetenzzentrum-stadtumbau.de

The future is
the time which,
from a subjective
perspective,
follows the present.
But it does not
just happen.
The future is what
we make of it.



Prologue

Saxony-Anhalt: The future is now

It's one of the key questions of our times: how do we want to live tomorrow? Those who wish to shape the future should be aware of their goals, set the compass and pursue it. In the face of different global trends and triggers the Kompetenzzentrum Stadtumbau considers it both important and appropriate to understand their impacts for present and future developments of cities in Saxony-Anhalt. Therefore it has presented its Roadmap for the future development of the Germany's Federal State's city network.

This Federal State in the eastern part of Germany has undergone two major transformations in its most recent past and demonstrated its capability to not just adapt to but indeed actively shape its future. With respect to the current challenge of a third transforma-

tion, triggered by climate change, globalisation and digitalisation, the wealth of experience gained through previous transformations will prove both valuable and advantageous.

The **Urban Development Compass** thereby provides basic orientation. It's got three guiding rails:

- I. Polycentric spatial development
- II. Urban region
- III. Local DNA

For the State of Saxony-Anhalt, this Roadmap should serve as a **plea and guideline** for implementing further the polycentric structure of its Network of Cities and an answer to the imminent changes.

In Saxony-Anhalt, the future is now.

A Profile

This is Saxony-Anhalt

Personalities of global significance were born and/or lived in Saxony-Anhalt such as Martin Luther, Georg Friedrich Händel, Johann Joachim Winckelmann, Otto von Bismarck, Friedrich Nietzsche, Georg Philipp Telemann, Walter Gropius, Kurt Weill, Hans-Dietrich Genscher, Jürgen Sparwasser, Täte Schur and many others ■ A State with an important history of European and international standing, of high cultural and architectural significance ■ The landscape provides an abundance of beautiful sites and intact nature: the river and marsh landscapes of the Elbe and Saale, the mountains of the Harz Region and the Brocken, Altmark, Börde and Mansfelder Land ■ a State with a major industrial history and tradition – today, the industrially-dominated South with its industrial and chemistry parks and the North dominated by a vital agricultural sector ■ The State is located in the center of Germany and has links with neighbouring regions, federal States and countries ■ It's one of the transport hubs in Europe with freight flowing on road, rail and water and an international via the Airport Leipzig/Halle



Inhabitants: **2,21** million¹, of which around **483.000**² live in the two major cities of Magdeburg and Halle (Saale) und Halle

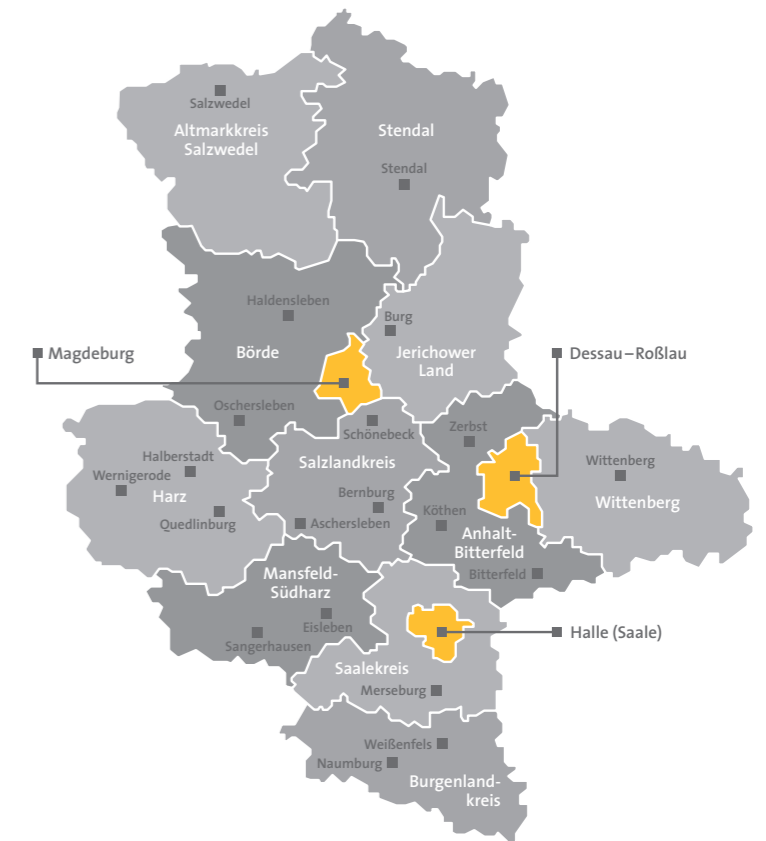
Population density: in the centre and south of the State between **100** and **150** inhabitants per km²

State with a lively educational landscape: two **universities**, eight colleges of higher education, numerous research institutions, scientific centres, academies and foundations

the home of the National Academy of Sciences **Leopoldina** Halle (Saale)

highest density of **UNESCO** World Heritage Sites in Germany

Pioneer: renewable energy supplies more than **70** per cent of the gross electricity consumption and **25.000** jobs



¹ <https://statistik.Saxony-Anhalt.de, 30/09/2018>

² State Capital Magdeburg, Statistics office, February 2019 (241,678 inhabitants), City of Halle (Saale), Department for Residential Matters, December 31st 2018 (241,333 inhabitants)

One Federal State – Two transformations

A State, capable of transforming

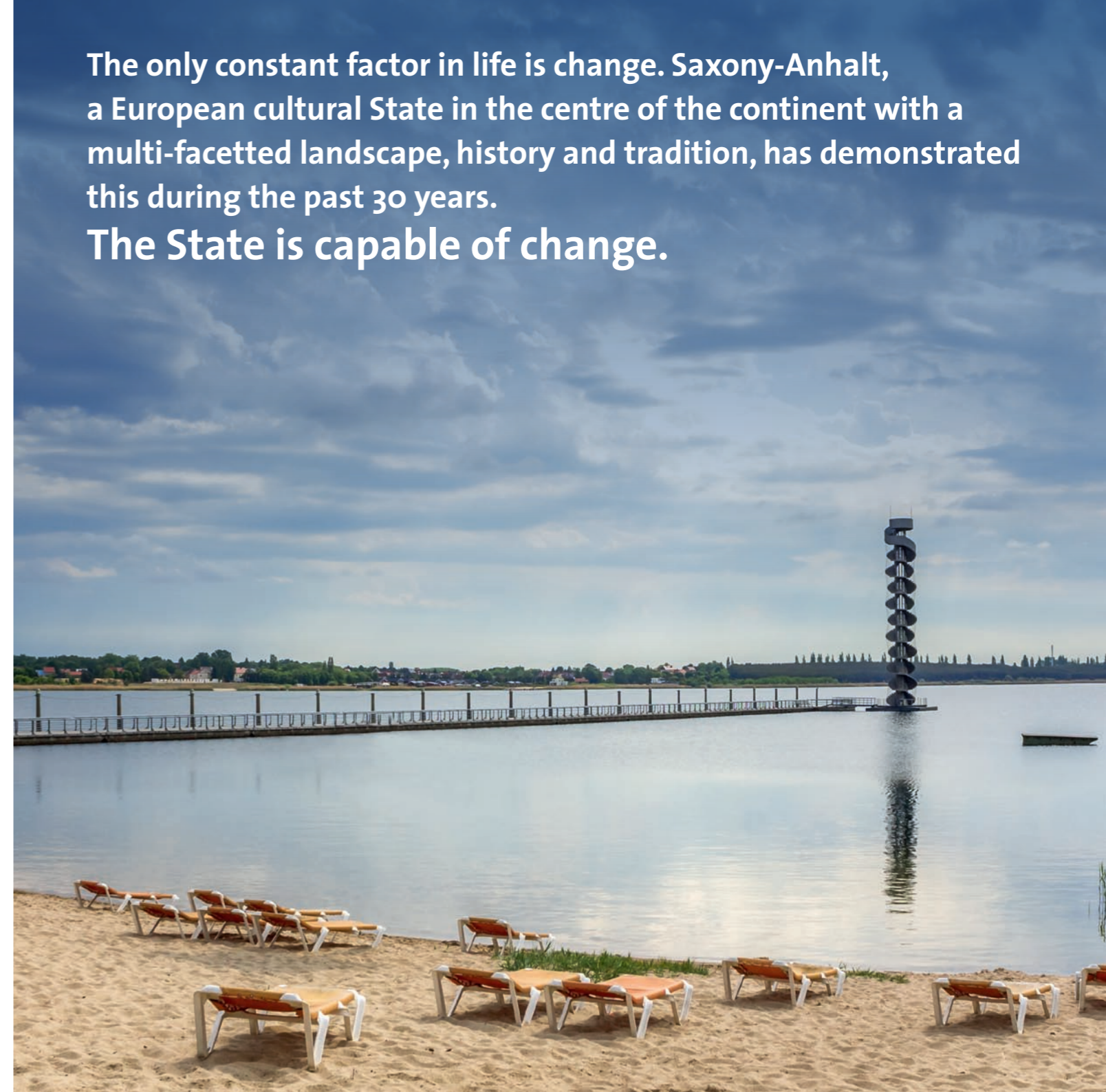
Saxony-Anhalt, located in the center of Germany and Europe, is characterised by multi-faceted landscapes and cultural and economic areas. The identity of the State derives from the common features and individual identities of its cities, villages and regions. The interaction between these different characteristics, traditions and strengths determines the basis for any transformation in Saxony-Anhalt. It's the foundation upon which the State responds to the challenges like

climate change, digitalisation and globalisation. Towards a strong „**Network of Cities in Saxony-Anhalt**“.

Over the course of the past thirty years, Saxony-Anhalt has undergone two major transformations and thereby demonstrated its capability for change. The State became a real-life laboratory for innovative societal solutions, inter alia in the context of STADTUMBAU OST (Urban Redevelopment East) und the International Building Exhibition IBA STADTUMBAU 2010.



The only constant factor in life is change. Saxony-Anhalt, a European cultural State in the centre of the continent with a multi-faceted landscape, history and tradition, has demonstrated this during the past 30 years.
The State is capable of change.



The first transformation

The political reunification in 1989/1990 caused a subsequent fundamental change in both economic and social structures

The scenario: cessation of production, decline of jobs, emigration. The dilapidated infrastructure, the energy supply based upon lignite and the run-down stock of buildings had to be rebuilt. Furthermore, architectural heritages and precious historical city centres that had been neglected for decades were protected.

The second transformation

Demographic change, dramatic loss of population and an aging population

The scenario: many unoccupied buildings and superfluous infrastructure marked the beginning of STADT-UMBAU OST, a large infrastructure and urban development programme for the States which formerly belonged to the German Democratic Republic. Some existing buildings were upgraded, others torn down; something new was created. Cities concentrated upon their strengths and special features. The appreciation of home and identity grew again. Despite increasing birth rates and a moderate degree of immigration, Saxony-Anhalt remains characterised by a population of a high average age.





Saxony-Anhalt and the third transformation Trends & Triggers

Triggers of the third transformation: economic and socio-cultural globalisation, digital revolution and rapidly worsening climate change with increasing economical and ecological crisis. **The result:** profound and

rapidly accelerating changes at all levels of societal life, economy, environment, technology and politics. An intoxicating and clear vision is needed.

Megatrends cause fundamental societal transformation processes. They can be the driving forces for developments. However, they always come with challenges and suggest a major task to actively shape this transformation.

Saxony-Anhalt and globalisation: Think global – Act local

Globalisation stands for the ever more rapid, world-wide intertwining of all aspects of life. In many cases, globalisation is also perceived as a threat. A threat of too many disruptive changes in a very short time. The approach should be to always find the best balance between ‘the local’ and ‘the global’ deploying the “Philosophy of Balance”³. Think global – act local seems to be a concept whose time has come. For its predominantly small- and medium-sized businesses, Saxony-Anhalt seeks to further “establish itself as the place of economic, social and ecological modernisation, located in the centre of Europe”.⁴

Saxony-Anhalt and digitalisation: infrastructure for the polycentric network of cities

Digital technologies are changing the world. Knowledge-based services will dominate the future and already makes labour more independent from any location, interactive and flexible. This can be facilitated by the implementation of a polycentric network of cities. The digital agenda of the State Saxony-Anhalt (2018) summarises, in a 10-point programme, specific measures, among them the urgently required comprehensive expansion of rapid and powerful internet connections.⁵



Saxony-Anhalt in the age of climate change: Adaption strategies

The global climate is changing. The pace at which global average temperature levels increase is unprecedented – with direct economical and ecological impacts. In February 2019 the State of Saxony-Anhalt launched its new Climate and Energy Concept, including the mid-term target of an energy sector entirely

powered by renewable energy. In 2016, renewable sources already contributed 51 % of the State's electricity production; coal (27 %), natural gas (15 %) and other energy sources (7 %) contributing the rest.⁶

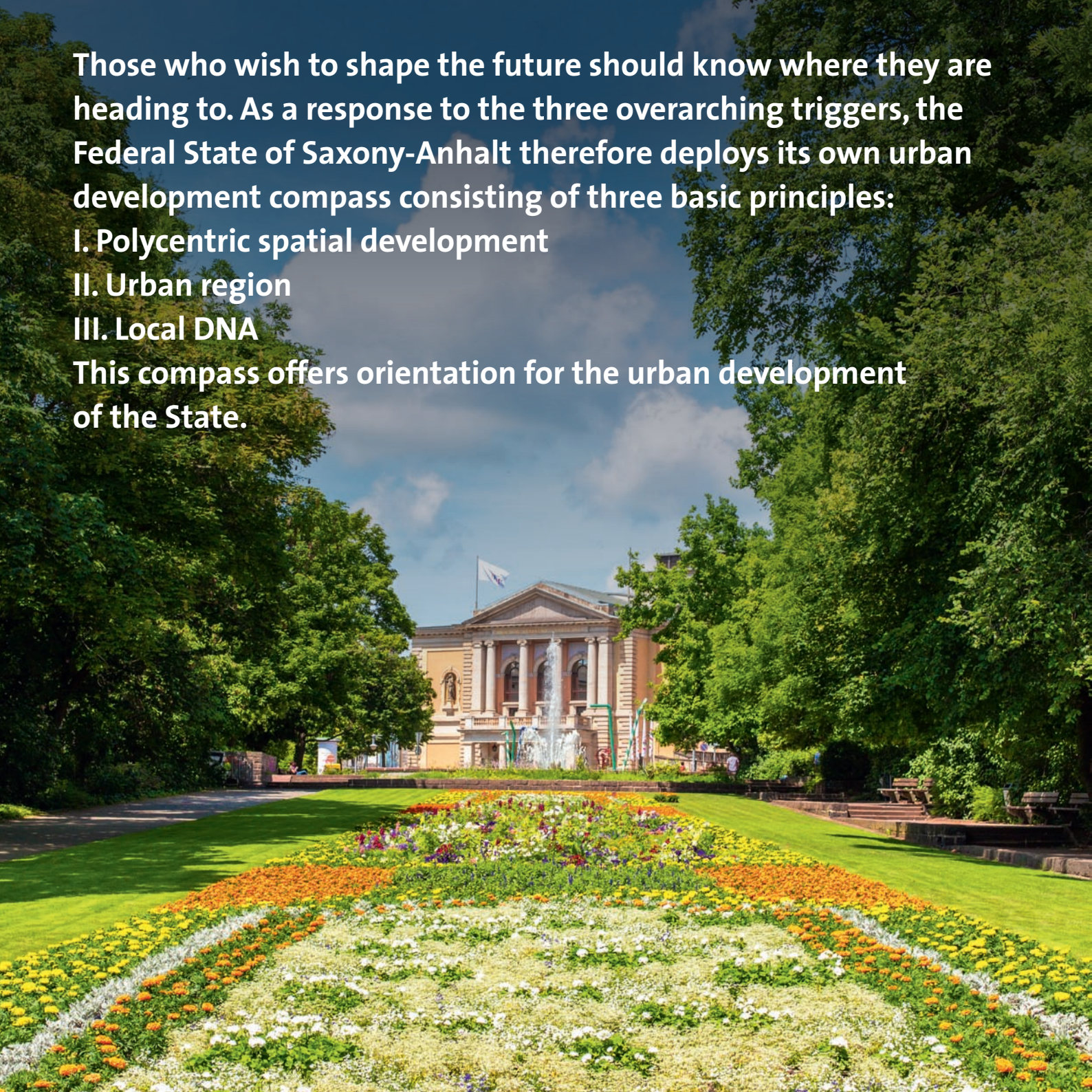
³ Weizsäcker, Ernst Ulrich von; Wijkman, Anders: It's up to us. Club of Rome: the major report: What we must change if we wish to continue to exist. New enlightenment for a whole world. Gütersloher Verlagshaus, 2017.

⁴ Regional Innovation Strategy of the State of Saxony-Anhalt

⁵ [https://digital.Saxony-Anhalt.de/nc/blog/\(29/03/2019\)](https://digital.Saxony-Anhalt.de/nc/blog/(29/03/2019))

⁶ [https://mule.Saxony-Anhalt.de/energie/klimaschutz/\(29.03.2019\)](https://mule.Saxony-Anhalt.de/energie/klimaschutz/(29.03.2019))





Those who wish to shape the future should know where they are heading to. As a response to the three overarching triggers, the Federal State of Saxony-Anhalt therefore deploys its own urban development compass consisting of three basic principles:

I. Polycentric spatial development

II. Urban region

III. Local DNA

This compass offers orientation for the urban development of the State.

Think the future

Urban Development Compass

Polycentric spatial development

The region is the city and the city is the region:
Saxony-Anhalt's city network

Polycentric spatial development

The **polycentric spatial development policy focuses upon “several centres” instead of a centralised approach.** These small and complementary centres form a comprehensive network with strong nodes, generating functions and services for the population in a decentralised manner. This polycentric city net provides all kinds of services required for a decent living in both, urban and rural regions. From health care, or educational infrastructure to the propositions of an enriching cultural life.

- Spreads a decentralised network of cities over the area of the State
- Preserves regional independencies and local features
- Supports the formation and maintenance of cultural identities
- Encourages participation
- Builds on available resources
- Strengthens the existing “immune system” of cities against extreme events (resilience)
- Aims at creating equal living conditions for urban and rural regions

Each hub of the polycentric city net is able to assume certain services for the network and marks an important part of the whole system while preserving its own identity.

Urban region

Participation in life in the city, state and world

Digitalisation enables „urban lifestyles“ and new forms of labour, regardless the size of the city. It connects major urban centres with rural regions and vice versa. Digital infrastructure further connects all kinds of services and helps bridging the rural-urban divide. However, in order to best benefit from digitalisation, efficient and attractive transport links between centres, cities and rural regions remain indispensable.

Urban region

- Considers digitalisation as an opportunity for small- and medium-sized cities to enable the benefits of an ‘urban lifestyle’
- Puts the polycentric development approach into practice: strengthens the region as a whole, promotes variety, vitality and individuality and aims at creating equal living conditions in both the city and rural areas
- Creates a higher quality of life in small- and medium-sized cities local public transport, local recreational possibilities, education, culture, medical services



Local DNA

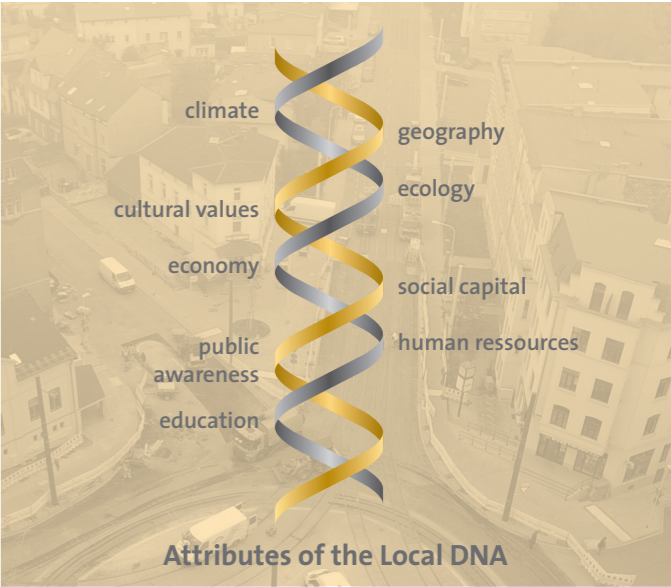
Understanding the individual characteristics of a city

Every place is unique. By way of the concept of the Local DNA it is possible to better grasp the individual character of a region, city or community. Local identities, traditions and socio-cultural diversity or regionally specific developments are better understood. All actors, from policy makers to local activists, must build on the distinctive features and potential that are engrained in a particular place. In essence, effective and lasting change can only be made by first developing a thorough understanding of the Local DNA.

Capabilities for the shaping of changes are recognised and taken into account during transformation processes. Change succeeds more easily and lastingly⁷, if

1. the unique nature of the place is understood and respected,

2. natural bases for life are heeded and preserved in planning and development and
3. participation is made possible as an expression of a form of urban development oriented towards the needs of the people.



⁷ WBGU – Scientific Advisory Board of the Federal Government Global Environment Changes (2016): the relocation of mankind: transformative power of the cities. Retrievable from : [wbgu.de/hauptgutachten/hg-2016-urbanisierung/\(29/03/2019\)](http://wbgu.de/hauptgutachten/hg-2016-urbanisierung/(29/03/2019))

Shaping the future Recommendations



Saxony-Anhalt is among the pioneers of German States with respect to renewable energy. Between 2014 and 2016 some 60 % – 70 % of the electricity consumption were generated by renewable energy. This suggests that the 100 % renewable energy goal of the State is within reach. Likewise, in 2016 some 25.000 Jobs existed in the renewable energy sector – 27 out of 1.000 jobs. This makes Saxony-Anhalt number one compared to all other States in Germany. However, renewable energy shares within the heat and cooling sector remain marginal which has to be addressed in coming years.

Renewable energy

Within the next two decades, renewable energy will replace the use of fossil resources step by step. Saxony-Anhalt therefore is well on its way towards further implementation of the Energiewende. The State has its attention firmly fixed upon the final target of “100 % renewable sources in the electricity sector” but should increase its effort to also develop the renewable heat sector.⁸

⁸ [https://mule.Saxony-Anhalt.de/energie/klimaschutz/\(29/03/2019\)](https://mule.Saxony-Anhalt.de/energie/klimaschutz/(29/03/2019))

Sustainable energy supply, jobs, regional wealth creation, renewable heat – all these elements link the Energiewende to polycentric spatial development.

Transform	the energy system from “centralised” to “decentralised and renewable”
Reduce	consumption of fossil fuels, and greenhouse gas emissions
Increase	renewable energy generation, in particular the share of renewable heat generation
Enable	communities to participate in the energy sector by facilitating the establishment of co-operatives and other types of community power models, so that profits remain in the region
Promote	pilot projects of community power projects including innovative concepts such as ‘landlord-to tenant electricity supply models’
Think Ahead	compilation of modelled regional energy scenarios with economic feasibility studies and job effects



Cities are growing at the same rate as the dreams of their inhabitants of a life in the country: a great opportunity for a renaissance of the small- and medium-sized cities with their value-for-money rents and proximity to nature. This will only come about, however, if the creation of equal living conditions succeeds.

Living: Buildings and neighbourhoods

Living in small- and medium-sized cities can be an **attractive proposition**. Using and developing the existing buildings and available space effectively and sustainably can therefore mean, that the State has to simultaneously densify certain hubs and allow lower density levels in others.

Sustainable is the new normal of today! Certain aspects of an urban lifestyle become less dependent on the size and density of cities

Develop further	already existing and functioning neighbourhoods and infrastructures
Promote	innovative housing concepts, approaches, and usage forms
Define	quotas for social housing
Share	residential space, offices, internet sharing, co-working
Maximise	public transport links, local recreation areas, education, cultural life
Intensify	investments in sustainable and energy efficient renovation of (public) buildings, e.g. financing by way of contracting
Increase	deployment of climate-friendly construction materials such as wood instead of concrete and consider the local the regional and local value added

Saxony-Anhalt is a logistics and transport hub: The fact that it's located in the center of Germany holds advantages for the development of the economy, transport system and the logistics section. On the down side, "the street" is about to collapse. Reliable, healthy and climate-optimised mobility thus becomes a question of the future.

Transport and mobility

Future-orientated mobility needs a rethink. When approving, planning and creating neighbourhoods and/or businesses, the idea of short distances needs to be at the centre of attention of polycentric urban planning. Regional traffic, local public transport systems, mobility by bicycle or per pedes should be the priority – and start already at the planning phase.

The aim of polycentric urban development is not car-friendly, but people-friendly cities.

- | | |
|------------------|--|
| Enable | living and working in an urban district, expansion of neighbourhoods that enable residential, leisure and work activities over short distances, ergo: a higher quality of life due to short commuting paths |
| Promote | safe and convenient cycling, alternative and multi-modal locomotion and traffic concepts, new forms of propulsion, shorter and more attractive commuting paths, carpooling and home office |
| Share | bicycles, e-bikes, cars, journeys |
| Connect | the digital world with that of transport: apps for sharing/renting of cars, bicycles, opportunities for shared journeys, tickets, promotion of new applications |
| Encourage | quantitative and qualitative expansion of attractive local and regional public transport systems: service, comfort, customer-friendly pricing |
| Create | mobility interfaces, e.g. at train stations by way of offers for car sharing, parking facilities and bicycle repair shops, additional train- and bus stops, fast cycle routes between cities and communities |





A reliable and rapid internet connection is in the meantime just as much a part of basic provisions as is the connection to electricity and water supplies. But so far in Saxony-Anhalt, only just under two thirds of the households⁹ have access to the magical minimum level of performance of 50 Mbit/s.

Digital infrastructure

A future-oriented digital infrastructure requires a functioning broadband connection and a powerful 5G network. The aim: connecting rural areas with cities, avoiding any decoupling of regions and instead joining them up in order to yield the inexhaustible possibilities of digitalisation for a better life!

Polycentric infrastructure also means a comprehensive digital infrastructure.

⁹ Source: Broadband atlas of the Federal Ministry of Transport

- | | |
|-------------------|--|
| Realise | the digital agenda of the State of Saxony-Anhalt (2018) |
| Ensure | powerful internet supply across the State in order to enable digital working and living |
| Determine | milestones for the development of Smart City and Smart Countryside concepts |
| Expand | technical support and advice for communities |
| Reduce | bureaucratic barriers |
| Focus | on “Smart City” and “Smart Living”: recognise the great potential of digital technologies for better networking/more participation in a broader offer of public services |
| Create | imaginative intermediate solutions (e.g. co-working at central glass fibre hubs) |
| Accelerate | Saxony-Anhalt as a real-life laboratory for the supply of an increasingly aging society |

Hot dry summers, low water levels of rivers and groundwater; on top of that, more precipitation, heavy rainfall, flooding. Is this the day-to-day weather which we will have to get used to and against which we will have to protect ourselves?

Climate adaptation

It remains true, that, from the global perspective, increased mitigation efforts mean less adaption measures. However, climate change is already happening. The State of Saxony-Anhalt already experiences its impacts such as change of weather patterns or water shortages and the State has to adapt to it. This includes urban and spatial planning where a **polycentric approach can increase the resilience of every place.**

Polycentric – decentralised and spatially distributed – structures are more “resilient”, more capable of offering resistance and thus less susceptible for extreme climatic events than are strongly centralised ones.

- Implement

the “Strategy of the State for adapting to Climate Change” (Update of March 2018), Climate and energy concept of the State of Saxony-Anhalt (February 2019), climate protection concepts of the cities
- Create

room for manoeuvre with respect to the regulation of perceived temperatures and the climate in the city: networking, planting of trees, integration of gardens and urban agriculture, common gardens and urban bees
- Rethink

urban water management, densely populated cities and neighbourhoods will be transformed into “sponge cities and neighbourhoods”, well able to absorb heavy rainfalls
- Promote

investments in constructions and infrastructures that, also in the face of extreme weather conditions and climate changes, possess the ability to uphold the key functions (resilience)
- Support

individual advise for communities, property owners and associations as there is no one solution equally suitable for all locations (Local DNA)



Future – Summary

State and region

The “Roadmap for the future development of Germany’s Federal State of Saxony-Anhalt’s city network” is to be understood as a summary model and guideline for the **development of the State and the region**, for future funding policy and for political decision makers.

Projects

The aim is, through inter-departmental acts, to develop **Model Projects** that demonstrate in an exemplary fashion how the transformation processes triggered by climate change, Energiewende, globalisation, and digitalisation may be turned influenced in favour of beneficial and equal living conditions in the cities and regions of Saxony-Anhalt.



Kompetenzzentrum

The Kompetenzzentrum Stadtumbau within the SALEG develops model regions and projects and hereby acts as a **coordinator and controller**, thereby seeking cooperation with other institutions of the states (e.g. Nahverkehrsservice Sachsen-Anhalt GmbH (Public Transport Company, NASA), Landesenergieagentur Sachsen-Anhalt GmbH (State Energy Agency, LENA), Netzwerk Stadt-Land. It guarantees the exchange of experiences and public relations work by the Network of Cities.

Magdeburg, April 2019



About Us

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