

FUTURE STORIES

OF WATER, SOIL AND BORDERS



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BY FISCHBACH COLLECTIVE

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TEAM - FISCHBACH COLLECTIVE

Anna Maria Fink is a landscape architect, artistic researcher and educator based in Amsterdam and born in the mountains of the Brengenerwald in Austria. As a landscape architect she has worked on various international projects for Bureau B+B. In 2019 she founded her own studio 'Atelier Fischbach' that investigates the relationships between people and landscapes through fieldwork. Her projects explore routines and rituals of care-taking and aim to extend our bonds with land through questioning ways of inhabiting a landscape. In 2020 she was awarded the talent development grant of Creative Industries Fund Netherlands and was one of the Young Innovators 2021 of the Dutch Board of Government Advisors. She teaches both architecture and landscape architecture students at various Dutch architecture, art and design institutes. Annas Muttersprache ist Deutsch.

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Lieke Jildou de Jong is a landscape architect and guest teacher at the School of Architecture in Amsterdam. After working for years in Landscape architecture firms she founded Landscape Collected in 2022, a design agency for landscape architecture. Landscape Collected strives for a self-regulating landscape system that encourages a new culture to adapt to a sustainable environment. The focus is on the rural area, where the cultural history and landscape system in its complexity form the starting point. Including themes like soil, plants, water and land use. She works both on self-initiated projects as assignments for various governments like the state, provinces and municipalities. With her work she won several awards, amongst others; she was winner of the Archiprix in 2022 and awarded with the talent development grant of Creative Industries Fund Netherlands in 2021 and Talent grand of NHBos in 2023.

www.landscapecollected.nl

Theo Ploeg is a design sociologist on a mission. With his Studio Hyperspace, he tells stories of alternative nows or possible futures and loves to explore them with others. He uses speculative design and sociology as tools of imagination and teaches speculative design at the Maastricht Institute of Arts. Furthermore, he writes about pop culture for several magazines. Theo lives and works in anticity Heerlen.

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Ester Heiman, works independently as an applied anthropologist and action researcher. Her projects aim to inspire people to move beyond the common paradigms, to a more regenerative way of thinking and doing. As an applied anthropologist she researches the identity of a system. The result of her work are preferably physical interventions in the daily reality of the system, often in collaboration with artists and designers. These interventions create a sense of community in the living system. And aims to inspire an aligned movement along their identity, to grow into the future in a regenerative way. Besides this, she trains all kind of professionals in applying anthropology in their work and is a guest teacher at VU and Design Academy. Six years ago she moved from Amsterdam to the forests of Berg and Dal, near the German border.

www.esterheiman.nl

Elza Berzina is a Latvian designer and artist. She graduated in Product Design in ArtEZ University of Arts with a research project on forest embodiment. Her work consists of multi modular approaches that investigates types of prototyping, embodied research and field- testing and often seeks to transmit a recognition of regional heritage of Latvia and the Baltics. Elza aims to create design processes that form empathy, a sense of observation through a constructed reality. Human and non-human interactions.

www.5x5.space

SUMMARY

For this assignment Atelier Fischbach has assembled A *MULTIDISCIPLINARY TEAM* for design research into future stories between Maas and Rhein: two landscape architects - each with their own approach towards reading landscapes, a local sociologist and speculative design expert, an applied anthropologist and a product designer. Together we looked at the regional landscape from multiple perspectives, scales and backgrounds. We searched for stories of relationships that create a common ground for our Dutch and German clients.

The central themes of our research is water and soil - the landscapes, metaphors and materials that are ultimately relational: crossing all borders, connecting ecosystems, challenging planning strategies, questioning current ways of living and thinking.

Our journey into the future stories departs from the past and present eye height perspective of the lived landscape - the dwelling perspective. For this we took fieldwork as a starting point to ensure an informed process that is interactive, situated, participatory and embedded. During the summer 2023 we spent time in the border region and collected *STORIES* as an input for the round tables in september. These stories are summarised in the '*BORDER JOURNAL*'.

Together with experts and stakeholders we deepened this research and concluded that our future stories should focus on narratives of water and the circular economy. We identified that many of the necessary future transformations are part of a bigger shift that asks to rethink contemporary values - often based in growth paradigms. For this we looked towards *POST GROWTH VALUES* and discuss how to achieve value transformations.

After the round tables we dived deeper into a landscape research that focusses on the border landscape around the river Wurm - *THE WURMTAL*. We looked deeper into the different *WATERS* collected in the river and its surrounding landscape. Taking the Wurmthal as a potential *BIOREGION* with autonomous, experimental policies formed the basis for our future stories.

Through *SPECULATIVE DESIGN METHODS* we developed two fictional future characters that live in the Wurmthal in 2100. With world building principles of *THE SEVEN FOUNDATIONS* we made two stories of a young swimmer - Yona, and a land custodian - Eva. These stories help us to imagine ourselves closer to the future and try to show the effect of alternative spatial and political decisions we make today.

In the three days workshop in Aachen our future stories guided the discussions about the near future of the region. On the first day we took the participants on a walk into the landscape where they met the two future characters. Through *EVA* we looked into the regenerative potential of landscape management and how a shift from extraction to harvest could benefit both place and people. Through *YONA* we learned how a renewed relationship with our bodies, our waters and our landscapes could lead to a fully circular philosophy and economy. The landscape of the present became our portal into the future inspiring discussions on how to re-imagine our place within it.

During workshops on the second day we discussed how existing projects could look like with an update according to the Post Growth principles. During this exercise the limits of the institutional layers and regulation appeared to be the main obstacle to pursue

these ideas in real life. Our proposal of the bioregion Wurmthal as independent administrative region could offer an interesting pilot project to go beyond these limitations and test ideas from the future stories.

On the last day of the workshop we took the participants and guests into the future with a guided ritual. Movement, listening and drinking sacred water aimed to bridge the gap between present and future. The future is now.

We truly believe that current planning and decision making processes can gain so much from future thinking as well as more experience based processes.

We invite everyone to include the landscape itself, personal experience and speculative thinking into their regular work processes.

We hope that our contribution to the future studio continue to inspire stakeholders to dare to take *A MULTIGENERATIONAL PERSPECTIVE* into account.

*"TO UNDERSTAND THE FUTURE AND ENHANCE OUR ABILITY FOR
LONG TERM THINKING WE NEED TO CONNECT TO THE PAST,*

TO UNDERSTAND SCIENCE WE NEED MYTHOLOGY,

*TO UNDERSTAND A GLOBAL ISSUE IT MUST BE UNDERSTOOD
LOCALY AND PERSONALY."*

Andri Snaer Magnason

A RECIPE FOR A BROADER NOW

This 'recipe for a broader now' is our input for the 'manifesto' - our recommendation on how to keep on involving fieldwork and speculation within all projects that take place in the region. A plea to stay connected to the landscape and its actors, human and non-human. As well as to stay open to continuous collective learning in order to make decisions that are connected to the present as well as the past and the future.

Start with walking, observing, listening and sharing. Dive deeper through research, exchange, creating things and expand through speculation. Invest into designing processes that seek for common grounds, both metaphorical as well as physical. Keep on evaluating and improving the process. Keep on going outside into the world and listen to everyone.

WALK
LOOK AROUND
LISTEN

RESEARCH
SHARE
MAKE TOGETHER
SPECULATE
FIND COMMON GROUND

ACT
EVALUATE

REPEAT AND KEEP ON WALKING



WE NEED MORE CONNECTED, INFORMAL, FLEXIBLE, ROOTED, ENGAGING WAYS OF WORKING
ENGAGING WITH THE LANDSCAPE AND IT'S STORIES + MATERIALS, BOTH PRESENT AS WELL AS SPECULATIVE

WALK



MAKE VISITING THE LANDSCAPE, WALKING IN IT, A REGULAR WORK PRACTICE

LOOK AROUND



SEE WHAT IS THERE AND TRY TO UNDERSTAND WHERE IT COMES FROM, TOGETHER AND WITH EXPERTS

LISTEN



LISTEN TO EVERYONE AND EVERYTHING

RESEARCH



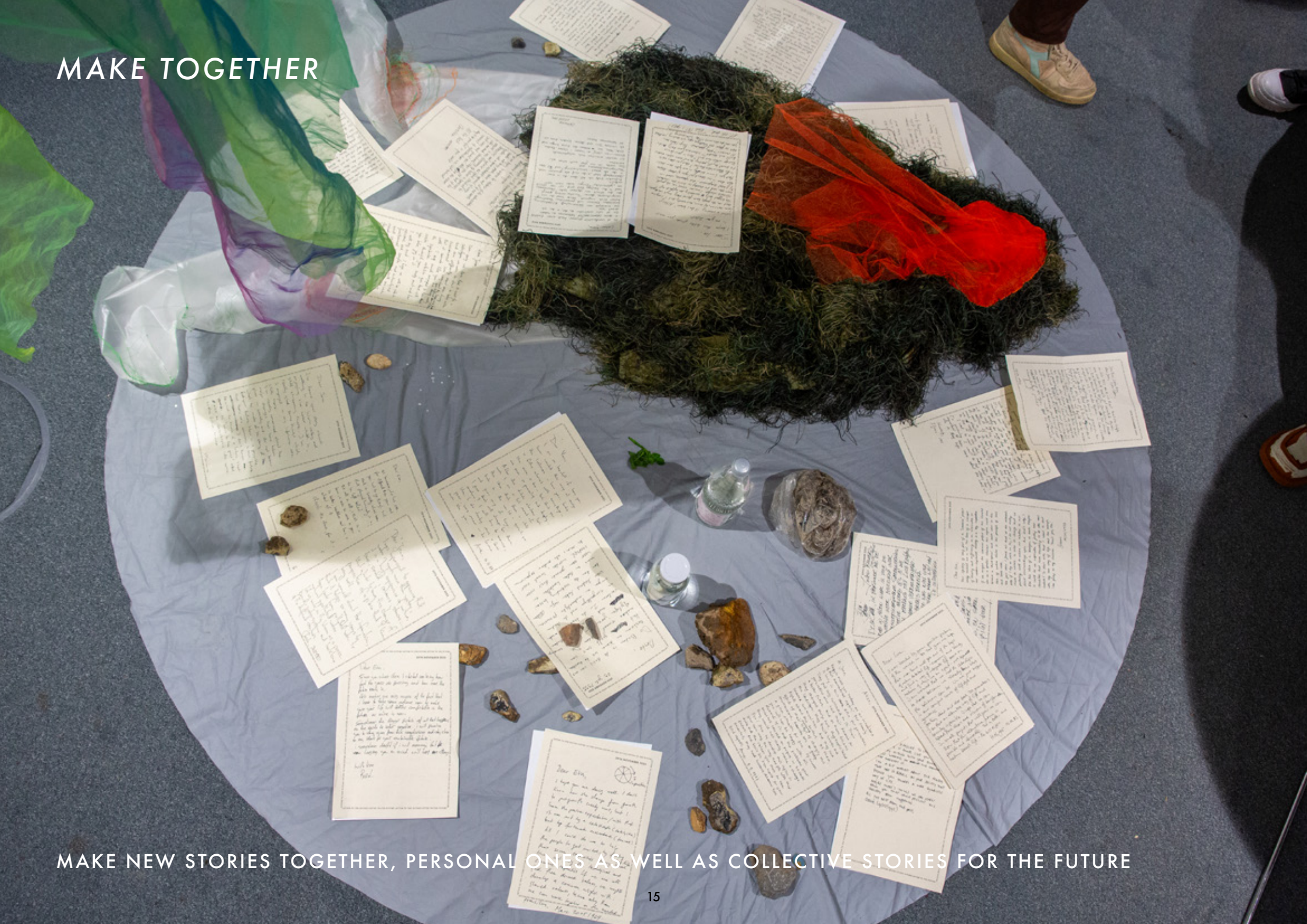
GATHER STORIES AND THINGS AND CONTEXTUALIZE WHAT YOU FOUND OUTSIDE

SHARE



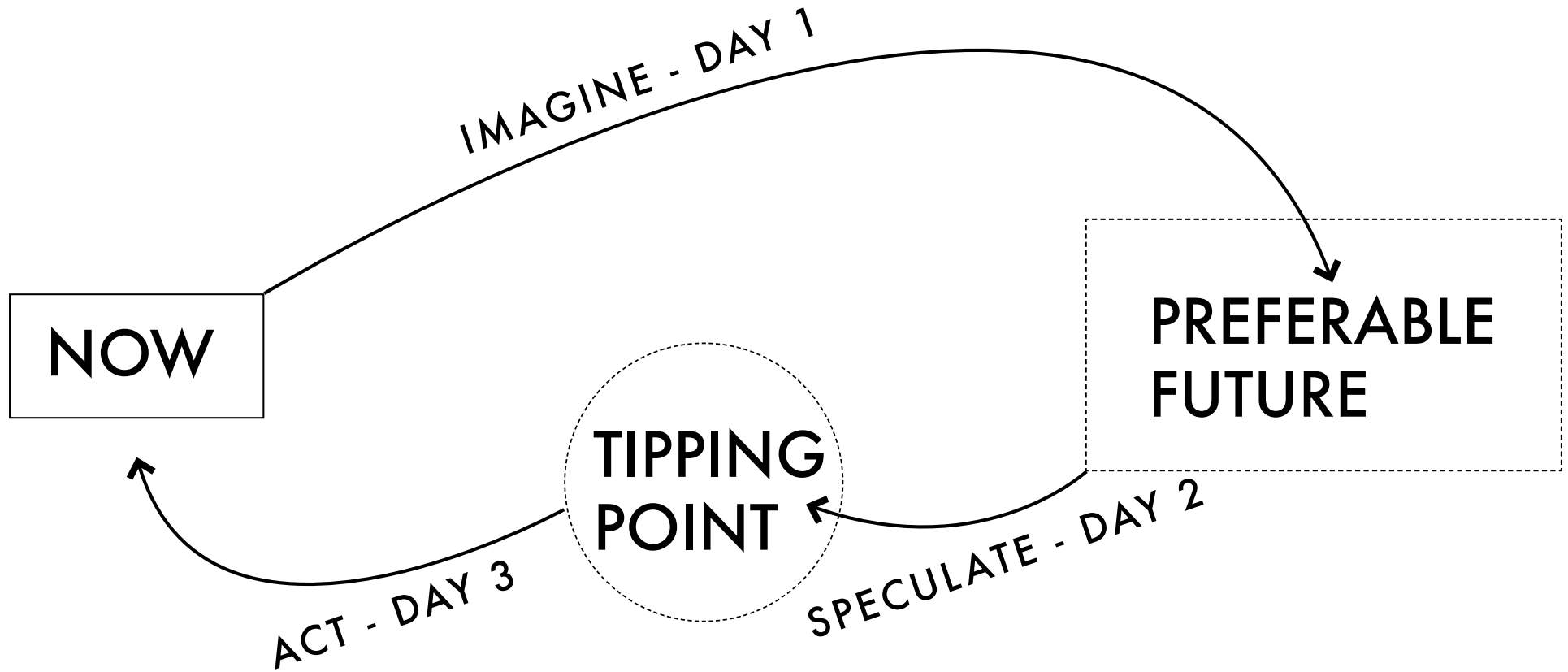
FIND OPEN WAYS OF SHARING THE FINDINGS

MAKE TOGETHER



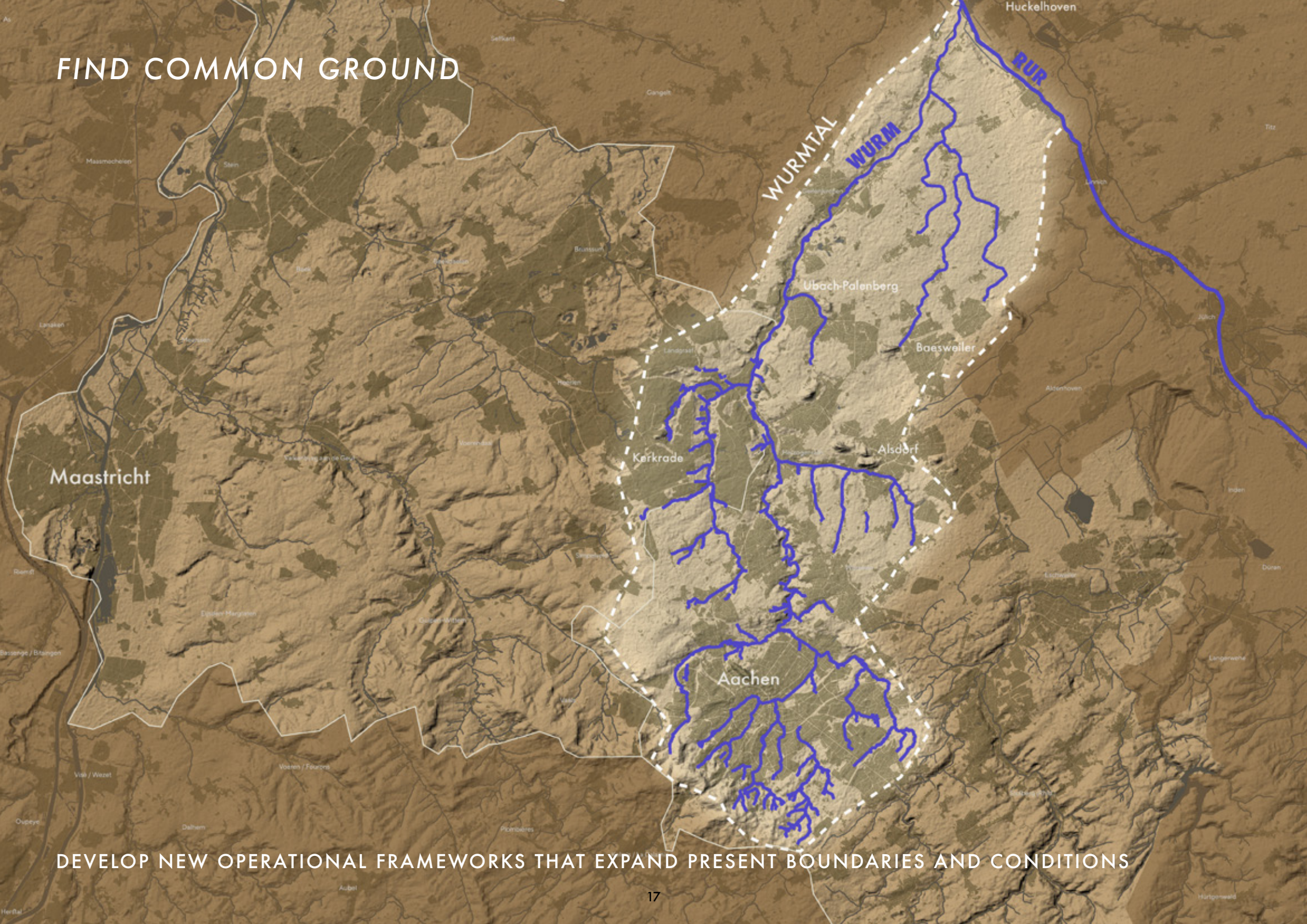
MAKE NEW STORIES TOGETHER, PERSONAL ONES AS WELL AS COLLECTIVE STORIES FOR THE FUTURE

SPECULATE



IN ORDER TO MAKE PLANS PRACTICE SPECULATIVE THINKING AND ACCEPT THE UNKNOWN

FIND COMMON GROUND



DEVELOP NEW OPERATIONAL FRAMEWORKS THAT EXPAND PRESENT BOUNDARIES AND CONDITIONS

ACT



PRACTICE TOGETHER WHAT YOU HAVE LEARNED TO CONTINUOUSLY RE-ADAPT PLANS

EVALUATE



CREATE COLLECTIVE LEARNING OPPORTUNITIES AND HONEST DISCUSSIONS TO INTEGRATE FINDINGS



REPEAT AND KEEP ON WALKING...



FUTURE STORIES

Stories are a technology that have always allowed us to hold things larger than ourselves. For this region, where so many large scale shifts have taken place, we used storytelling as a guiding tool for our research to imagine value shifts.

These stories might not be the paddle to our life-boats that get us out of this mess but they might teach us how to swim. So our future stories are not a tool for a solution but an exercise to imagine a new direction.

The future stories are narratives of two protagonists - Eva and Yona - living in the Wurmthal region in 2100. Through them we get to know the values of the future region where a big shift towards the post-growth economy has taken place.

Eva and Yona live in the region that is now centered around harvesting and grew out of the present mining landscape.

Through *EVA* we look into the regenerative potential of landscape management and how a shift from extraction to harvest could benefit both place and people. Through *YONA* we learn how a renewed relationship with our bodies, our waters and our landscapes could lead to a fully circular philosophy and economy.

During the 3 day workshop we went for a walk in the landscape at the edge of Aachen. Located in the physical environment the present became our portal into the future inspiring discussions on how to re-imagine our place within it. The places of the fieldwork tie into the themes of the story and show existing qualities and future potentials.

We meet the two protagonists through two 'field-suits' that show their workwear and everyday clothing, making their futuristic routines and rituals tangible.



READING THE STORY TOGETHER
ON SIGNIFICANT SITES

It is the year 2100, you are walking in the border landscape between Germany, the Netherlands, and Belgium behind the hills. Here the waters of the Aachener Wald collect underground and feed the fertile loess soils.

To the left is a viewing tower overlooking the Drielandenpunt, marking the border among the Netherlands, Germany, and Belgium. Behind the Vaalserberg hill lies Moresnet, the neutral state linked to the zinc mine. In the valley, you'll find a historic landscape with old farms, watermills, churches, monasteries, and pilgrimage sites.

YOUNG SWIMMER YONA

The Seven Springs are the strongest group of springs in the Aachen city area: The spring's catchment area extends to Holland and Belgium.

The Wurm Creek, flowing along the Dutch-German borderland, originates in the Aachen region. As a tributary to the River Rur, it crucially sustains biodiversity in the shared landscape. The water system, threading through forests, farmlands, and wetlands, exemplifies the interconnected ecosystems of the Dutch-German border region.

LAND CUSTODIAN EVA

Schneeberg - a small hill between Vaalserquartier and Seffent, approximately 250 meters above sea level. Named after its unique white and yellow sandstone soils, the hill is part of the Aachen-Limburger-Kreidetafel, characterized by lime, marl, and chalkstones from the Late Cretaceous period.

50°46'44.7"N 6°02'46.7"E

WALKING ROUTES IN AACHEN TO
STEP INTO THE YEAR 2100

The past decennia felt like a rollercoaster: so many things have changed. As we were threatened with a cataclysm - a complete global collapse of all human made systems - we found the strength to change direction. We committed ourselves, our systems and our desires to a definite shift towards POST-GROWTH values.

We had to decide between a collapse of the Anthropocene and an improvised start of the Symbiocene. And so we choose the SYMBIOCENE - the age of collaboration between humans and all other living beings. That wasn't easy and it took a great leap. Especially for us in this part of the earth. We had to switch from a lifestyle centred around comfort and consumerism to what at first felt like survival-mode. What saved us was our ability for compassion and empathy. Within one generation, we slowly adapted our habits with our strong communities.

In recent years, the well-being of both people and the landscape has increased tremendously. Both young and older generations agree that the world has undergone a healing transformation. It has grown towards a more healthy, just and happy place for humanity and other sentient beings.

There are still things to worry about. Water and soils are still suffering under the consequences of human behaviour of the past decades. The build environment is still in transition. Many ruins of the industrial era, like the giant logistic centers, solar fields, car-related infrastructures and big industries are still visible in the landscape.

Decades ago the circular economy has led to more efficient recycling strategies and better local material flows. The circular economy had a positive impact on space as urban land use had become much more efficient. Cities and towns are densified and revitalised. Not a single green square meter has been built on since 2025.

The idea of the commons, ALLMENDE or MEENT, is an ancient system and a guiding principle for us today. It will still take a while before all lands are COMMON - old systems of the industrial age are difficult to dismantle.

Planning and decision-making include the perspectives of seven GENERATIONS in the past and in the future. Decisions are made by direct democracy of informed communities and the voices of the landscape. Processes are not about making plans anymore, but about a continuous adaptation of our strategies. We have learned how to deal with the unknown, not through control but through resilience. WATER and SOIL are at the center of all decisions: they feed all life (all that lives).

Soon, you will meet two inhabitants of the WURMTAL. This is a regional landscape, defined by the drainage area and watershed of the river Wurm or worm. The national borders have become less relevant, as we are following the borders of BIOREGIONS instead. The Wurmthal is defined by its hydrological borders that are dynamic, porous and relational. Towns and cities, are now an integral part of the landscape. We look at them as habitats for humans and other living organisms. All decisions we make are rooted in a drive to achieve mutual flourishing. They should increase health, for all beings. All we do, is focussed on increasing biodiversity, equity and justice. We don't use terms like *sustainability*, *nature*, *ecosystem services*, *green* and *eco-friendly* anymore. Embracing the Symbiocene, changed our language.

Education focusses on understanding science, enhancing creative problem-solving and exercising compassion. Social skills have become more important in an increasingly diverse society with more elderly people. Climate migration causes a continuous need for us, to establish a sense of belonging. Not only to a specific place and culture but to Earth as home. Spirituality, community and connection to the land have become important elements to strengthen this feeling of belonging. Our direct democracy gives us power and changes social relationships. We build our own identity together. Rituals and symbols play an important role. Also, our relationship with what we used to call nature changed. It's not an abstract concept anymore. It is everything and everybody is part of it.

In the past we have seen the HORIZON CHANGE many times. The changes to the landscape made by previous generations created the mining hills - the halden and mijnbergen. They are now the seats for community centres that rise above and look over the landscape. In these centres we come together to talk about our new horizon. We reflect on the past, present and future through the eyes of our landscape.

We use RITUALS and rites of P A S S A G E S to help us become an integral part of our landscapes. Our rituals are both inspired by what we know about our ancestral past as well as influenced by the many cultures that live in the region. Our rituals focus on celebrating the change of the seasons and inform our ways of living together: during carnival we reflect on the past year, we celebrate fertility and rites of passage in spring, in autumn we have HARVEST and gratefulness festivities, in winter we have mourning, death and rebirth ceremonies.

We have now entered the season of CARNIVAL. During carnival we celebrate the earth and all it's beings as one big ecology that can't be reduced to its parts. We celebrate everything we make. All of the materials we use and produced are seen as relations within this big ecology. Carnival reminds us to see our lives as connected to those of past and future generations. We often dress up as animals and plants, as well as landscapes such as hills and streams. Through us they all have a voice in our direct democracy processes. People build their own identity together interwoven with the rituals and symbols that are belonging to their landscapes.

Today we celebrate the flourishing of our horizon - one of a regained BIODIVERSITY. Parts of this horizon are made up of our cities and buildings that still remind us of old ideas. Look behind you: the hospital of Aachen shows us how people thought that everything can be separated in singular parts of machine. That everything can be explained, objectified, isolated. Today, we see everything in relationship to everything. We are one. One community. One earth.



My name is Eva. This year I turned a proud 77 years old and I still work every day. For all my life I have been living in the Wurmthal.

EVA
A REGENERATIVE LAND CUSTODIAN

I am a CUSTODIAN of the land, what you used to call a farmer. A custodian is someone who actively works on the well being of the land. We harvest food, medicine and building materials from the land. And maintain the balance of what we give and what we take.

My parents have been one of the first biodynamic farmers in South-Limburg. They were inspired by POST-GROWTH ideas and the SYMBIOCENE - a deep believe in the collaboration of people and the land. During the period of the great restructuring they moved to Herzogenrath in the Wurmthal. This landscape once shaped by the first hardcoal mines of Europe, was the first landscape to become fully regenerative.

The small creek Wurm, is the center of the valley. Not only spatially but also in our daily lives and our spirit. As water is seen as sacred today, people are increasing their awareness of the land, the Earth. In this region we see the Wurm as the CENTER OF ALL RELATIONS.

Our economy is all about CIRCULARITY. It took a while but now it has become clear to many people that ecology and economy are actually not supposed to differ.

Both of them are about how we deal with our 'oikos', the greek word for house. How we take care of our home, the Earth.

REGENERATIVE work is all about the vitality of this home. My work in particular is about the aliveness of the soil. Back in the days we called this a holistic view. To me it is about understanding how all is one. What I do is not only about producing goods but about producing relationships.

Everything we use is seen as a moment within a circular process that comes from the Earth and will at some point return back to the Earth. So essentially all humans do is make new SOILS. With our food, with our houses, with our clothes, with our bodies. Words like RESOURCE or WASTE do not exist anymore. In my lifetime I have seen how our community of food producers has shifted from traditional farming to this new custodianship. Slowly nearly all of our landscape is taken care of by us custodians. Also inside the cities and towns.

After the CATAclysm it was clear - our way of living cannot continue the way it was. Globally, people started to understand that our way of dealing with materials was based on exploitation and extraction.

We focussed on local food and material production instead of import and export. For this we looked at our landscapes and what they could grow into. We went away from ideas of renewal and restoration and towards ADAPTATION and REGENERATION.

My generation built upon well known ancient principles and combined them with high-tech precision tools. We learned from permaculture, food forests and vernacular building techniques. Regional material specialists and engineers added AI-data-processing and small scale hardware.

All we do is based on the existing HABITAT qualities. We look at the existing vegetation, the type of soil, the amount of sun and light, the humidity and water catchment properties. We are not turning soil - soil is always covered with plants. Trees, shrubs, different layers of crops - coexist on the same land. Meadows, forests and marshes- all provide different habitats and harvests.

The old distinction of cultural and natural landscapes is a view of the past. Now we live in gradients of HARVEST intensity and habitat qualities. That means humans harvest everywhere but only in respect towards all living beings that are part of a habitat. Sometimes that means that humans stay away from places for decades in order to give space to other beings and their harvest.

This is how we live with mutual respect and how I have been farming with the lands for most of my life.

Walking is essential to being a land custodian. My BODY is trained to observe and feel all the changes in the landscape. Harvesting is also a way to observe as this is how humans embody the land.

With this, my workwear helps me a lot.
We call it a FIELD-SUIT.

I wear my field-suit on most days of harvesting in the Wurmthal. Through out the time, my it has adapted to my needs as well as to the needs of the landscape.

Firstly I wanted to blend in. The landscape is full with living creatures that I do not want to disturb, so my suit looks quite like the environment I am in. With the long threads I am able to distribute pollen and seeds through out the forests and meadows. Like a sheep that carries them in its wool.

I walk without shoes, only with a thin layer of this data-sensitive material around my bare feet. With my pants I am able to analyse the levels of fertility and remaining pollution in the soil. At the same time the pants keep me dry in the swampy areas of the land - areas where the soil became like a wet sponge.

We struggled with pollination for many decades but our regenerative work has started to pay off by. Now the valley also is returning to be an insect paradise and my hood helps to keep me focussed.

While I walk I talk to my AI companion. The AI makes a daily scheme of all the data collected with my field-suit. This is a way for me to map out my observations and relational analysis. Together with all custodians we create a common dataset that informs our material use.

People have seasonal diets now and a mostly plant-based diet. This makes costs and energy use for food drop immensely. The food we eat now has become much more nutritious, and more diverse compared to when I was a child. Industrial foods have mostly disappeared and our regional microbiomes are much more diverse and resilient than the ones of my parents. All organic matter is COMPOSTED and becomes NEW SOIL.

People with a garden sometimes choose to keep chicken and rabbits, sometimes even doves. Industrial dairy and livestock farming has been banned after the cataclysm. I still cannot believe what people did to animals, when I see historic pictures of animal agriculture of 21st century. Now animal products are used mostly for special ceremonial dishes and linked to the season, but are not part of an everyday diet.

My parents are still telling about how difficult it was in the first years of the big transformation, to diversify their diet with new local ingredients. Or to stop producing waste. So many tastes they were not used

to, all these new techniques of cooking and food preservation. The efforts for reuse and upcycling, and new skills for repairing things.

But within a few years they said, they could not image ever doing things the way they did when they grew up. The great TRANSFORMATION was not easy but habits adapted faster than anyone could have imagined. In the early 2000s, numerous small-scale COMMUNITY projects flourished, shedding light on the social aspects of urban gardens and solidarity farming initiatives.

As the economy became more circular also exchanging goods locally - Tauschwirtschaft/ruilhandel - became more structured and accepted. Everyone has access to a community garden and gardening is taught from an early age on. The whole pedestrian and bike path system that connects cities through the landscape is structured around food and material hubs. Different places are selling different harvests and like that what people used to call 'shopping' became a tour through the landscape. Also delivery systems are hyperefficient and packaging materials are either redundant or reused.

Because of all these shifts what used to be called 'waste' or 'garbage' has been reduced by nearly 99% compared to 100 years ago.

In the past there have been many issues with water and soil as a result of land degradation through monoculture. When I went to study ecology and custodianship the prevention of erosion was the main topic at the time. To enhance water retention, we started with reviving the ancient planting of what the Dutch call the *'graftern'*: terrace structures, a centuries-old concept. The graftern already were like tiny food forests in-between open fields. From this old landscape of the graftern, the REGENERATIVE mindset literally spread over the terraces and grew into what it is today. In the past we have allowed the water of the streams to restructure flood areas. Species RESILIENT to flooding came back and sometimes were planted. Now diverse grasslands, forests and marshes are creating a small-scale PATCHWORK. All-together they are harvesting water and slowing down the runoff towards the streams.

I remember that there was something else that really helped to create awareness for the regenerative approach. Believe it or not, it was the the old soils of the mines that might have started it all. When I was young I grew up in a sinking house. Back then that sounded a bit odd but in those days more and more


*houses started to move...
and the people with them*

The disturbance of the GROUNDWATER table and the sinking of the ground was a heritage of the mines. The government found solutions to fix this but the people realised that things had to change.

I knew about the mining hills as they were always part of our horizon. When I was a child these hills gained a new meaning: they became the first COMMON GROUNDS (Neue Allmende/Nieuwe Meent) of the region. Suddenly we all owned land. These forests were protected as a whole but at the same time all local people were allowed to harvest. We would pick berries and mushrooms. Occasionally it was allowed to take some fallen trees.

These first common grounds helped to make people understand how important custodianship is for land. And how our new harvest could work. As a young student I spent a lot of time researching and experimenting with crops and trees in these areas. The industrial ruins became breeding grounds for a flourishing future.

To mark this new perspective the region built COMMUNITY centers on the top of the hills. Here locals would meet to think about the future together. I think there, on top of that extracted old soil, was where my relation with the land was inspired to become REGENERATIVE.



My name is Yona. I am 22 years old and I live in Aachen. I grew up in the middle of the city beside the Wurm. It starts in the Aachener Wald and is winding through the city and through the landscape where it joins the Ruhr River, making its way along the Maas and finally reaching the North Sea..

YONA
A YOUNG SWIMMER

I grew up with the creek KINDERGARDEN. Every day we would get out of the city into the Wurmvalley. Being and playing outside together learning about the place we live in. Daily tours through the landscape, listening, sensing and taking care of the water. We grew up with environmental knowledge at the core of our being.

Also the RPUARIAN dialect has had a real comeback as children from both nationalities meet down at the Wurm.

This is how we learn about balancing human needs with ecological integrity. I know we used to have strategies for this hundreds of years ago. Our ancestors used to be attuned to the web of the living. Then after industrialisation we had a period of competition, of capital. We wanted to achieve more and more. This brought humans a lot, but it took a lot away from everybody else, especially the Earth. Now we are in a period of re-adaptation of all living structures. Learning how to adapt ourselves and our ways of living to the places we inhabit. And to everyone else who lives there with us.

To dive deeper into this knowledge I study ALCHEMY at the nomadic University in Heerlen. Alchemy is back on the University curriculum for a few decades now as people's relationship with materials had to change fundamentally. We look at how all materials can be reused and enhanced in their value.

For this we look at both: scientific and philosophical traditions of materials as well as industries and laboratories. We combine nanotechnology and quantum chemistry with philosophy, mysticism and ancient alchemy. This region has a long tradition of MATERIAL KNOWLEDGE. I am proud to become an alchemist stepping into the footsteps of my greatgrandfather who was a chemist working in the laboratories of the mines. In the past this was often used to extract and exploit what people used to call natural resources. Today this knowledge is about restoring harmony between material needs and a flourishing landscape.

Many young people have migrated northwards due to the warmer conditions and they brought knowledge about circular material use and climate adaptation with them. Our European conceptions of what we used to call "re-use" have been widened by all these cultural techniques and perceptions.

My biggest fascination comes from this landscape I grew up in - the Wurmthal. The name "Wurm" comes from Celtic, meaning "warm water," highlighting the mix of the region's thermal springs with the cool stream waters. Together these waters create a unique ecosystem with changing water temperatures.

Understanding water as a mixture of many waters of many places and times shows how all is one.

This conception also had a political dimension: around 70 years ago the valley area around the creek became a political entity - an independent BORDER REGION that merges the Netherlands and Germany. A region defined by the porous, permeable, and osmotic boundaries along the stream's course. Like this politicians found a way to redefine nation states and allow for COLLABORATION.

When I turned 6, I had my 'ALLY-RITUAL,' where I became the ally of the watercress - making it part of my family. An ally is like a family member, a kinship between humans and non-humans. As an ally I am responsible of making sure that the watercress's voice is heard amongst people. We meet regularly in local counsels where we exchange our allies needs and resolve conflicts. Every time I meet the watercress I learn and understand more about its role in the ecosystem. It's nutty and delicate, fresh and nourishing taste makes me feel like home.

In the past the region has worked very hard to give the creek its dynamic back. They let the water create its own path, rewinding its course and the entire landscape around it.

Thanks to the efforts of previous GENERATIONS, the landscape I live in is continuously shaped by the forces of nature. I feel this powerful force every time I walk in and along the water. This is when I feel truly at home. My favourite thing to do, is to follow the Wurm by foot. Sometimes for hours or even days, searching for new places to wade in the water and feel its current. With my body in the water the Wurm is teaching me the nuances of diverse WATER HABITATS.

For me SWIMMING has a ritualistic significance. As far as I understand, it used to be seen as a purely recreational activity. My grandma, who also loved swimming, told me how they were illegally swimming in industrial ruins: former sand pits and refilled coal mines. Today there are new big lakes but they are nothing like the original waters and their surrounding lush landscape.

When I go on my Wurm explorations I usually wear my WATER-SUIT, a garment that I inherited from my father. This heritage from the past generations, is helping us in this search to live with the Earth. To learn how to adapt and change continuously.

It is a new sort of traditional suit, a silk-like garment that moves in harmony with the currents and has become typical for this region. It is not only that the suit moves me - it helps me to learn from the water. The water-suit is continuously measuring and translating information about the environment.

Through my senses and with the help of an observational drone, I receive data about the physical and organic qualities of the water.

My body measures the 'ALIVENESS' of the water. And through that we understand the vitality of the landscape as a whole. Through the suit my body is becoming a sensorial tool.

I feel the directions of the stream, diagonal pulls that run from my elbows till the very end of my finger tips and further, from my knees till my toes. Small wave like pulses going through my spine, creating a rhythm that seems like a code awaiting translation. It feels like my body is expanded through the body of the water. The waters and my body, we become one.

In a few years, I will have learned enough for the wisdom of my own body to take over. I won't need the suit anymore. This is when I will become fully part of this landscape.

Any form of water is sacred. And everything that contains water, is sacred. Remember that more than half of your body is made up of water. So is the body of the watercress.

Many DAILY RITUALS are reminding us of the importance of water in our lives. I hope one day, water will finally be free and a human right. We know what all life needs to flourish is water and soil. So every decision making process we start with this question - *does this decision increase mutual flourishing?*

My favourite time of the year is CARNIVAL. This is when we celebrate the great diversity of the Earth and the ONENESS that connects us all. With our costumes we send messages to local decision makers. With this we discuss what is needed for the next year to bring this MUTUAL FLOURISHING.

As an alchemist I know water is not just water. There are many types of waters, with different qualities and characters:

Rainwater
Seepage water
Purified water
Groundwater
flood water

All of these waters have their own ways of shaping the world. As humans we have to help them do their work. These differences in hydrology and hydrochemistry are of great importance for the characteristic key stone species of our Wurmvalley:

grass snake - ringelnatter - ringslang
slow worm - blindschleiche -
brook lamprey - meerneunauge - zeeprik
water bat - wasserfledermaus - water
vleermuis
yellow wagtail - schafstelze - gele kwikstaart
watercress - brunnenkresse - waterkers

In my parents lifetime the creeks have regained their AGENCY. My father still experienced the flood of 2021 as a child. But today floods have lost their catastrophic impact. The rains are stronger than ever, but I do not fear the water and it's grand power. The past generation has learned to move with the elements. Times of great rain are now times of WATER HARVEST.

This water harvest is dedicated to the restoration of our GROUNDWATER TABLE. It has been manipulated heavily for more than 150 years and in the old days when there were still engineered, technocratic plans, there were many unforeseen issues. The increasing drought has forced those engineers to take a different route in the past.

It was the regenerative movement that battled the drought. Drought caused by temperature rise and evaporation. Because there was too little land and too little organic material in the soil that holds the water. Compost was the answer to many problems. As people healed the water, the Earth restored the soil.

Since regenerative practices have taken over, there is hope that soon the groundwater table will become stable again. I hope that my generation will finally turn the tide and repair the broken systems through this deep knowledge of INTERCONNECTEDNESS. I am so proud that this region, my home has become a European role model for healing landscapes and people.

INGREDIENTS

These 'ingredients' are a summary of our background research that informed the future stories. Presented in themes and terminologies it gives insight into the guiding principles and systems we have used to ground the future stories in the Wurmatal and the future.

ALCHEMY

For the future stories we invented the nomadic University of Alchemy that brings together the collective knowledge of the region that have long been experts around the transformation of materials: knowledge institutes such as the RWTH as well as Forschungszentrum Jülich as well as the Brightlands Campus and other industrial knowledge holderes.

With a mindset that shifts from extraction towards reciprocal harvesting and embraces post-growth-values the region could become leading in a contemporary “alchemy”.

Alchemy historically referred to a philosophical and protoscientific tradition seeking to transform base metals into noble ones. Rooted in ancient civilizations, alchemy evolved through Hellenistic, Islamic, and medieval European periods.

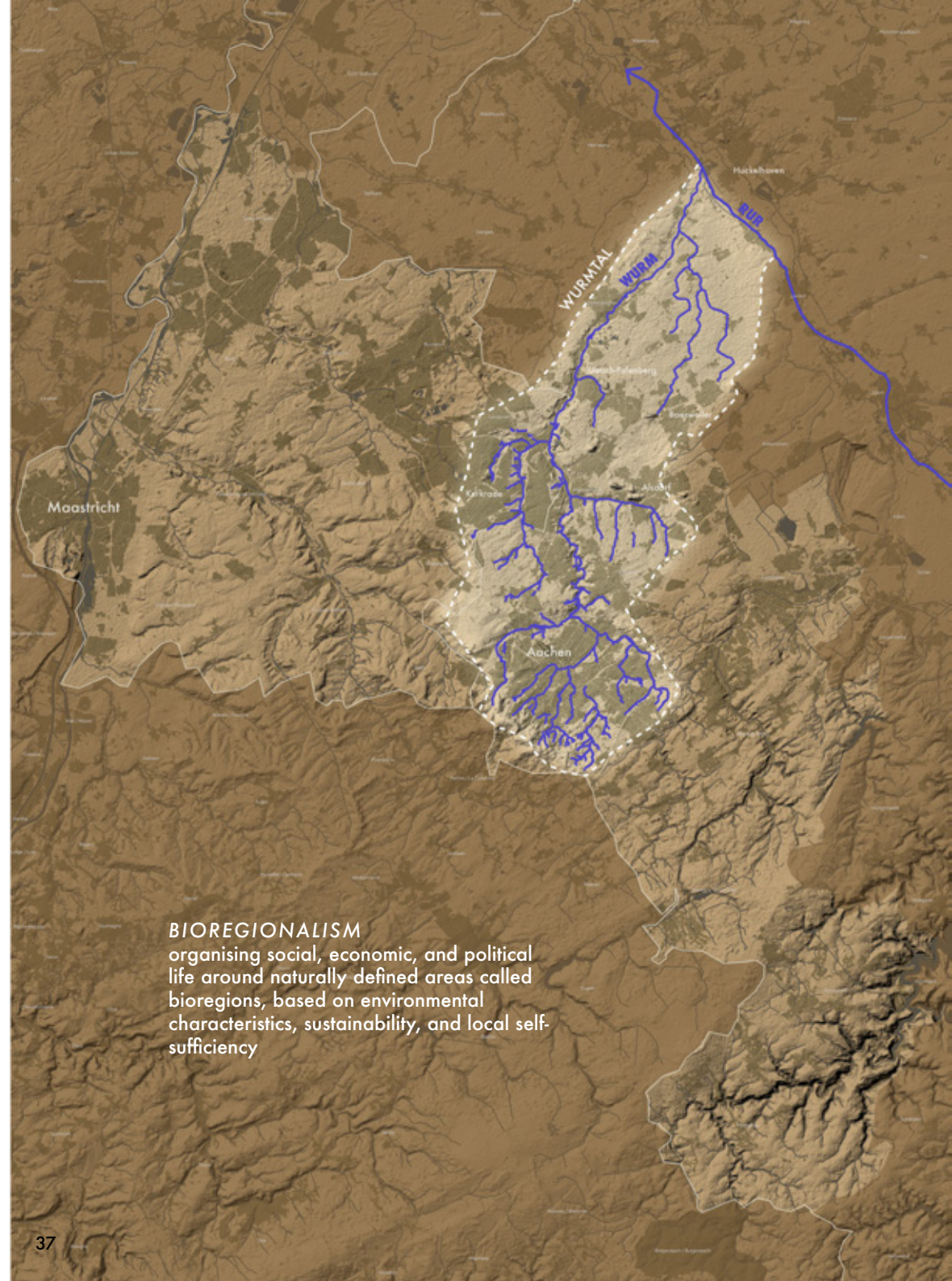
Today, “alchemy” is metaphorically used to describe transformative processes in various contexts. Scientific and technological breakthroughs are seen as alchemical transformations reshaping our understanding. Environmental alchemy represents efforts to turn harmful practices into sustainable ones. In essence, alchemy has transcended its historical roots, becoming a versatile symbol for transformative processes and the pursuit of positive outcomes in the modern world.

BIOREGION WURMTAL

The bioregion Wurmatal is a proposal for a newly introduced administrative territory following the catchment area of the river Wurm. The river originates near Aachen and flows from various sources towards the Dutch border, which it follows for about 5 km, until it flows back to Germany. The various sources, over 10 different types, and the interconnection between Germany and the Netherlands makes the bioregion as a whole an interesting location for a pilot project.

Improving water quality is a good starting point for achieving an overall improvement of environmental quality for the next generation. Water quality is connected to many human activities: how we handle our waste waters or the agricultural and industrial use we make of it. The quality of water is therefore an indicator for improving the environment as a whole. Aiming for healthy water, up to swimmable water with bathing quality, will influence the way we deal with waste, materials and resources and how we handle our soils. It will improve biodiversity and help retaining water as well as encourage accessibility to the many rivers in the region. Ultimately it will improve the liveability and resilience in the region.

This bioregion can be a demarcated cross border region, with the opportunity to explore and experience what it takes to be fully committed to a healthy environment with swimmable waters. This will require a value shift amongst the inhabitants but also especially at the institutional level, in order to enable this change through suitable regulations and conditions.



BIOREGIONALISM

organising social, economic, and political life around naturally defined areas called bioregions, based on environmental characteristics, sustainability, and local self-sufficiency

This region contains various types of water. Each type of water contains different nutrients and therefore serves different purposes in the ecosystem at large. Various types of flora and fauna will thrive on very specific nutrients and qualities of these waters. Each water type makes an individual contribution to serving a range of species and is hence essential to the biodiversity of the region.

Possible future consequences:

During persistent rain as much water as possible will be retained to prevent flooding further down the stream. Local water is allowed to flood the banks so that sediments will move. In the long term this provides the area with extra fertile soils. In the short term some crops will be lost.

The first Wurmatal project has already started around Rimburg and Eyselshoven at the border of Germany and the Netherlands. This Interreg project is aiming to improve the water quality by giving the Wurm stream more dynamics through making specific riverbanks and a landscape design.



the watershed of the river Wurm

BOTTOM UP / DIRECT DEMOCRACY

Direct democracy is a political system in which citizens participate directly in decision-making processes where individuals have the opportunity to vote on laws, policies, and other issues, allowing for more direct and immediate influence on government decisions. This form of governance emphasizes active citizen engagement and aims to ensure that the will of the people directly shapes the course of public affairs.

Bottom-up movements are grassroots initiatives that originate from the general population rather than being imposed from higher authorities. These movements gain momentum through the collective actions and voices of individuals at the local level, gradually building influence and often challenging established power structures. Bottom-up movements prioritize inclusivity, allowing diverse voices to contribute to the decision-making process. They can address a range of issues, from social justice and environmental concerns to political reforms, and they often advocate for decentralized decision-making and increased community participation.

Overall, both direct democracy and bottom-up movements aim to empower individuals, foster community involvement, and create more responsive and accountable governance structures.

CARNIVAL

In our future stories carnival is used to express non-human voices for political decision making. People embody their ally's (animals, plants, landscape elements like rivers or forests) and express their ally's needs to their local politicians.

Carnival is a typical festive and cultural celebration characterized by vibrant costumes, music, dance, and community gatherings - celebrated in the Aachen-Köln region as well as the south of the Netherlands. Carnival provides a temporary space for individuals to step outside societal norms, challenging established hierarchies and fostering a sense of liberation.

The transformative nature of carnival lies in its ability to overturn traditional power dynamics. During the festivities, social roles are temporarily reversed, allowing participants to challenge authority and express dissent in a playful manner. This subversion of norms encourages a sense of equality and solidarity among participants. It becomes a space for social commentary, enabling individuals to voice dissent, critique authority, and engage in political discourse in a creative and symbolic way.

COMMONS/ALLMENDE/MEENT

In the future stories we propose that most of the landscape is now common land - a new Allmende/meent. The first lands to become commons were the mining hills.

The concept of the commons, rooted in shared resources and collective governance, has deep historical roots. In Germany, the term "Allmende" encapsulates a form of commons that dates back to medieval times. Allmende represents community-managed lands or resources, where villagers collectively governed and utilized shared spaces like forests, meadows, or grazing lands. During our research we learned about the Bürgewald that has grown where Tagebau Hambach is now. It's history reflects what has happened to so many commons all over Europe: slowly they were privatized and later exploited by companies.

The commons model challenges conventional notions of private ownership and advocates for shared responsibility, emphasizing access over exclusive ownership. In Germany, the Allmende concept has influenced contemporary movements promoting cooperative and community-based initiatives. During the workshop we visited a "Solidarische Landwirtschaft" close to Aachen.

Both the historical Allmende and the broader commons framework underscore the potential of collective governance to address environmental challenges, promote social cohesion, and reimagine more inclusive and sustainable approaches to resource management.

THE CREEK KINDERGARDEN / THE ALLY RITUAL

The creek kindergarden is a fictional proposal within the future stories to create cross-border kindergardens where young children spend time outdoors in along the streams and in the landscapes of the valleys. This approach aims to foster a deep connection between children and nature. This connection is believed to have positive effects on physical, emotional, and cognitive development. And finally children will grow up to feel more connected to their environment and with intrinsic knowledge of the landscape and it's inhabitants.

The ally ritual is ment to create a kinship between human and non-human inhabitants of the region. At a young age children would choose what animal/plant/landscape element they would like to 'be friends with' and keep on learning about until they are adults. This creates a deeper notion of responsibility towards the place they live in and children grow up with ecological knowledge.

THE EARTH / INTERCONNECTEDNESS

Earth-centric thinking prioritizes the Earth and its ecosystems over human interests. It emphasizes environmental conservation, sustainability, and ecological awareness - it focusses on interconnectedness.

Advocates aim to protect nature, minimize environmental impact, and recognize the interconnectedness of all living organisms. This worldview acknowledges the intrinsic value of the Earth and may have spiritual or cultural dimensions. Earth-centric thinking guides environmental movements, policies, and individual behaviors, fostering responsibility for global challenges like climate change and pollution. Overall, it promotes a holistic and sustainable approach to the intricate relationship between humans and the environment.



Drawing by indigenous artist Ogwa

GRAFTEN

In the region of South Limburg for centuries there was a tradition of making terrasses with trees, hedges and shrubs. These terrasses are called Graften.

They help against erosion and water retention.

Making use of permanent plants can be a key element in the resilience of the landscape in relation with agriculture. Exciting ways of agriculture can be implemented on the terraces structure like: Permaculture, Agroforestry, foodforerst, vineyards, orchards and various other ways of permanent vegetation in combination with seasonal crops.



LOESS

A specific characteristic of our region is one of the special soils - loess.

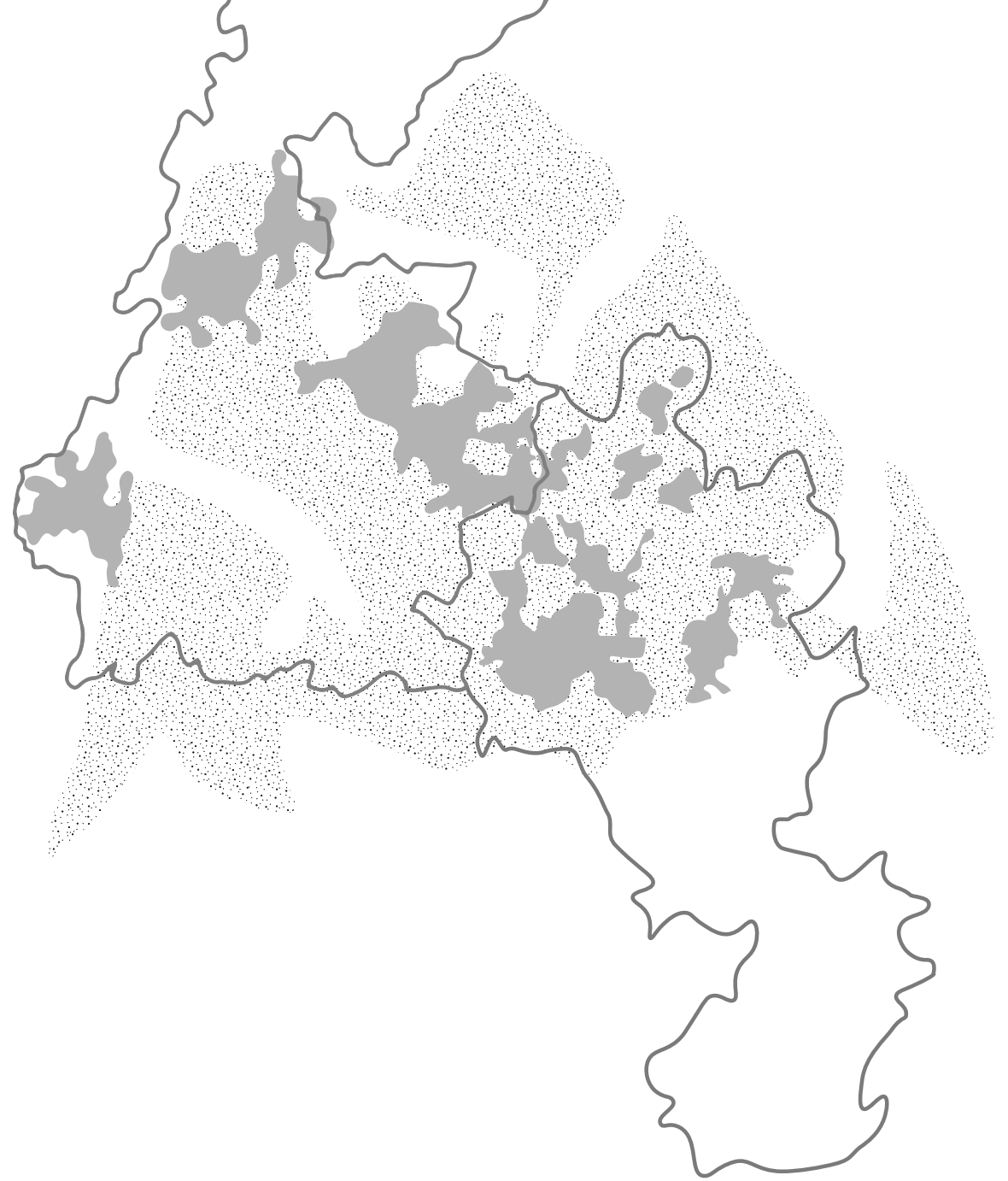
Age: Earlier phase of the Pleistocene and later layers in the last ice age (Weichselian) Deposition: Arctic winds blew the particles over our country. Only in the lee of the South Limburg hills did they flutter to the ground.

Location: On the slopes of South Limburg and around Aachen. Predominates in the stream valleys on the steeper ridges.

Size: Particles are between clay and sand.

Color: yellow orange

Feature: The soil has an open structure. Organically rich and therefore extremely fertile. Due to the open structure, the soil is sensitive to leaching of valuable nutrients. Via infiltration they carry soil and water flows with them. What is happening now is that the fertile clay elements are washing out into the valley. This makes the valleys more fertile.



MULTIGENERATIONAL THINKING

We need long term, multigenerational thinking to make time and transformation tangible and to connect to what we truly care about. Through thinking about past generations we ensure that our approaches are paying their respect to where they emerged from. By speculating towards future generations we consider the long-term impact of decisions and actions on future generations. It extends beyond immediate concerns and seeks to address present challenges in a way that preserves resources, environmental health, and cultural heritage for the benefit of those who will come after. This approach encourages sustainable practices, responsible stewardship of the Earth, and a holistic understanding of interconnected systems. It aligns with the idea of leaving a positive legacy for the coming generations by making thoughtful and responsible choices today.

“YOU CAN TOUCH 230 YEARS.”

ANDRI SNAER MAGNASON

WATCH “THE HANDSHAKE OF GENERATIONS”
BY ANDRI SNAER MAGNASON

NATURE

We need new perspectives on how we define Nature. A nature that does not separate humans from their environments.

Nature is a holistic and interconnected entity where humans, animals, plants, and the land share symbiotic relationships. For this spirituality and animism can play a significant role, attributing consciousness to natural elements and recognizing their spiritual significance. Redefining nature focusses on balance, cycles, and sustainability and underscores the importance of living in harmony with everyone, maintaining ecological equilibrium.

We can learn from indigenous perspectives that stress place-based knowledge, rooted in deep understanding specific to local environments. Language and symbolism in indigenous cultures convey nuanced relationships with nature, offering a rich tapestry of ecological wisdom.

Reciprocity is a guiding principle, urging communities to give back to nature as much as they take - all flourishing is mutual.

Communal responsibility extends beyond individual actions, fostering a collective commitment to environmental well-being. Resistance to exploitative practices, such as resource extraction and deforestation, reflects a commitment to protecting the environment. In embracing these new definitions, a more inclusive and sustainable approach to understanding and interacting with nature can be fostered.











POST GROWTH VALUES / CIRCULAR ECONOMY

Our future stories are set in a world where post-growth metabolism has been implemented and a circular economic model is replacing the current economy of waste.

Post-growth metabolism is a concept rooted in the idea of transitioning from traditional growth-oriented economic models to more sustainable and regenerative systems. The focus shifts from relentless economic expansion, as measured by metrics like GDP, to a holistic approach that prioritizes ecological and social well-being.

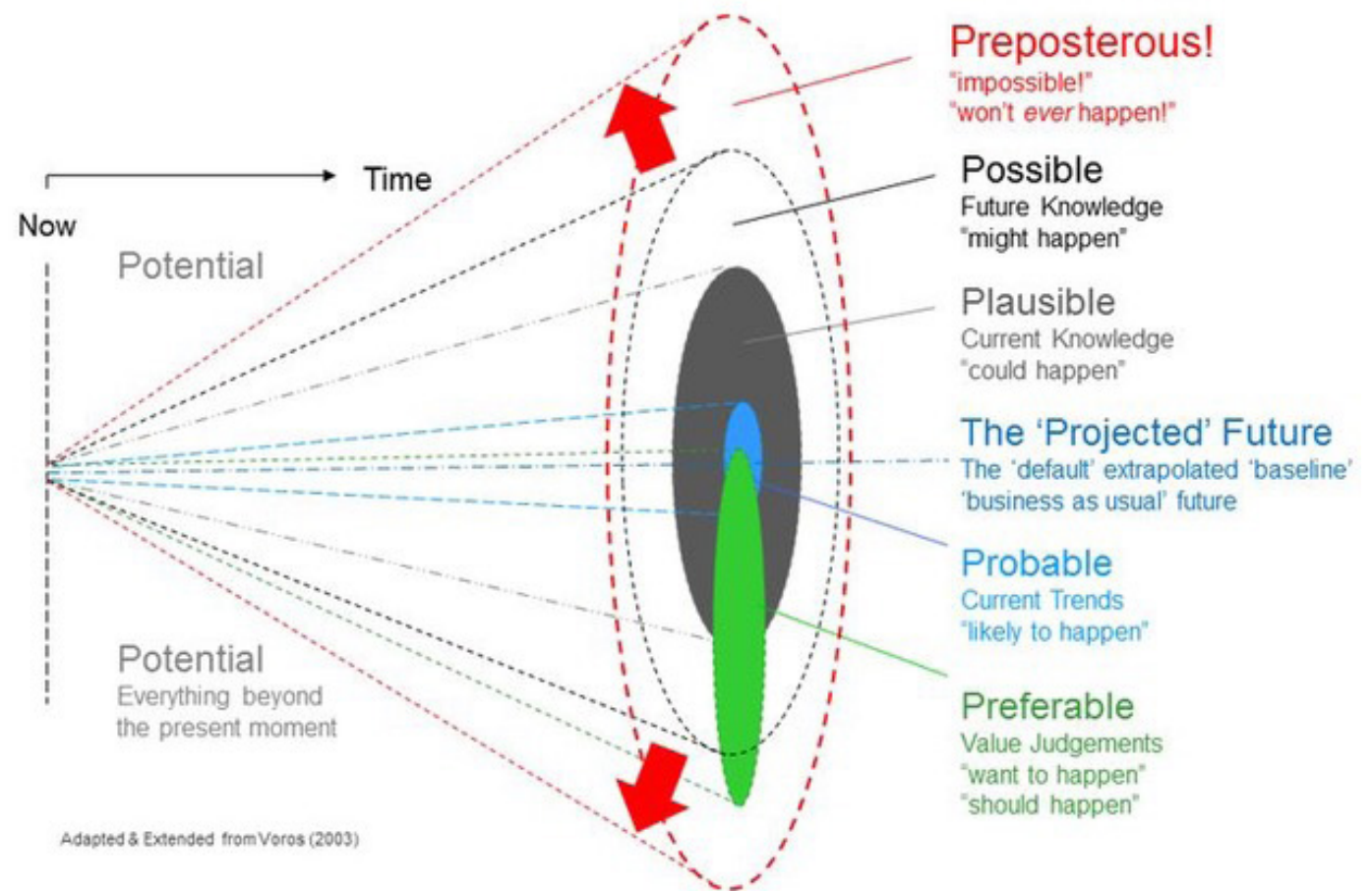
In the context of economies, post-growth metabolism envisions a shift towards circular and regenerative practices. It involves reducing resource consumption, minimizing waste, and fostering sustainable production and consumption patterns. The emphasis is on creating economic systems that mimic natural ecosystems, where materials are reused, recycled, and regenerated. This approach recognizes environmental limits, values biodiversity, and promotes resilience in the face of ecological challenges.

Embracing post-growth metabolism involves a fundamental reevaluation of societal values and economic goals, ushering in a transition towards more harmonious and resilient relationships between human activities and the natural environment.

	Economic Principles	Social-ecological Principles	Allocative Principles	Institutional Principles	Relational Principles
Growth metabolism	Efficiency 	Extraction 	Accumulation 	Private ownership 	Control 
Post-growth metabolism	Sufficiency 	Regeneration 	Distribution 	Commons 	Care 

PREFERABLE FUTURE

In the context of speculative design, a preferable future refers to envisioning and exploring potential scenarios that offer positive and desirable outcomes. Unlike predictive forecasting, speculative design uses creativity and imagination to propose alternative futures that challenge existing norms and assumptions. Designers engage in this process to stimulate critical thinking, provoke discussions about societal values, and inspire innovation. By presenting diverse, sometimes utopian or dystopian, scenarios, speculative design encourages people to question the status quo and consider alternative paths for the future. It is a method that transcends traditional problem-solving approaches, encouraging a broader exploration of possibilities and contributing to the ongoing discourse on shaping a more thoughtful and inclusive world.



REGENERATIVE FARMING

The future story protagonist Eva is a practicing regenerative farmer. Regenerative farming is a sustainable approach centered on restoring ecosystems and enhancing soil health. It emphasizes practices like cover cropping, crop rotation, and reduced tillage to improve soil fertility and structure. Integrating livestock and promoting biodiversity are key aspects, fostering natural nutrient cycling and reducing the need for synthetic inputs. Agroforestry, incorporating trees and shrubs, enhances biodiversity and prevents soil erosion.

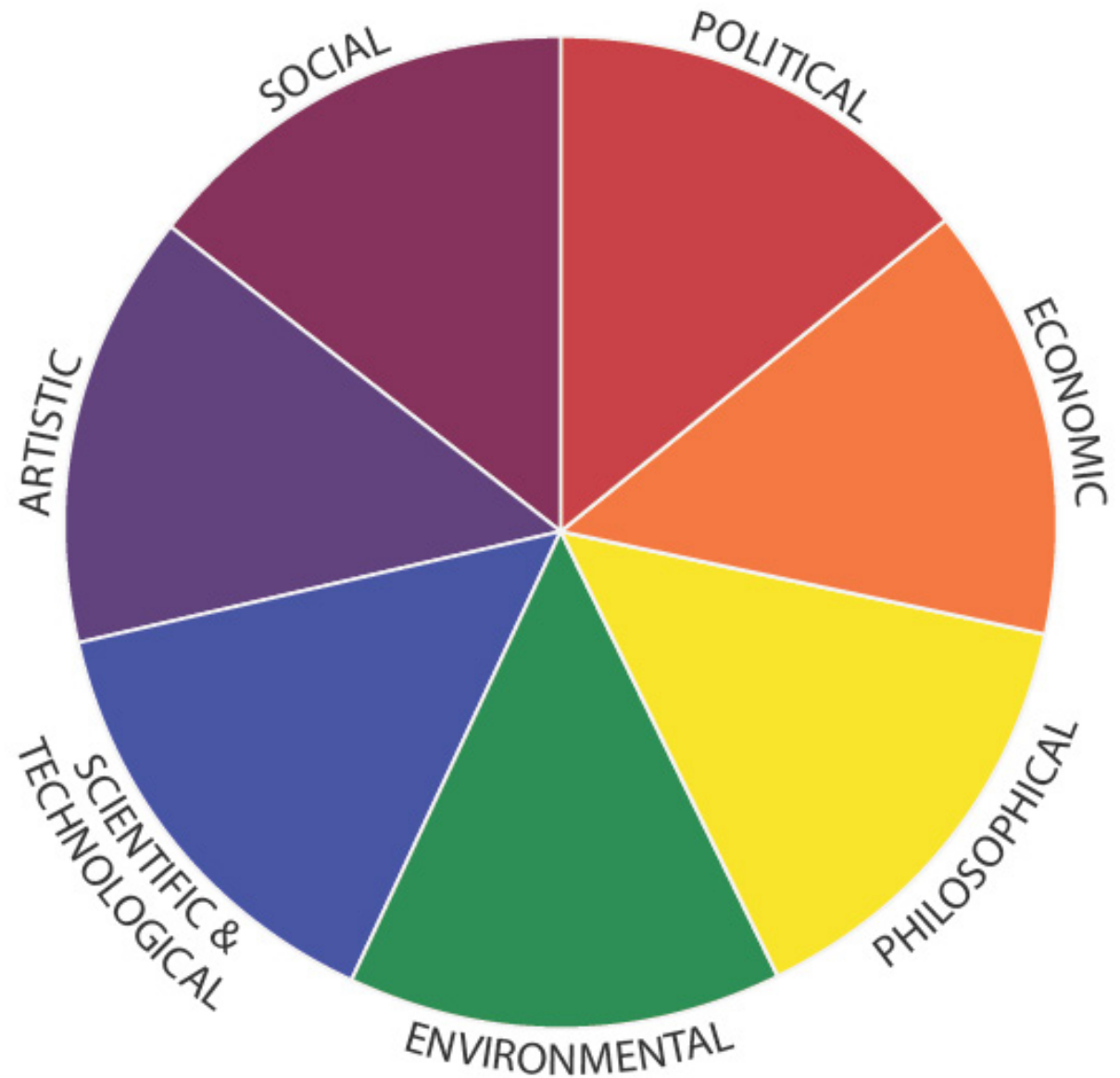
What sets regenerative farming apart is its commitment to actively improving the land over time. Carbon sequestration in healthy soils helps combat climate change, while water conservation measures and efficient resource management contribute to overall system resilience. By prioritizing a harmonious relationship between agriculture and nature, regenerative farming offers a sustainable and regenerative path forward for food production and environmental health.

THE SEVEN FOUNDATIONS

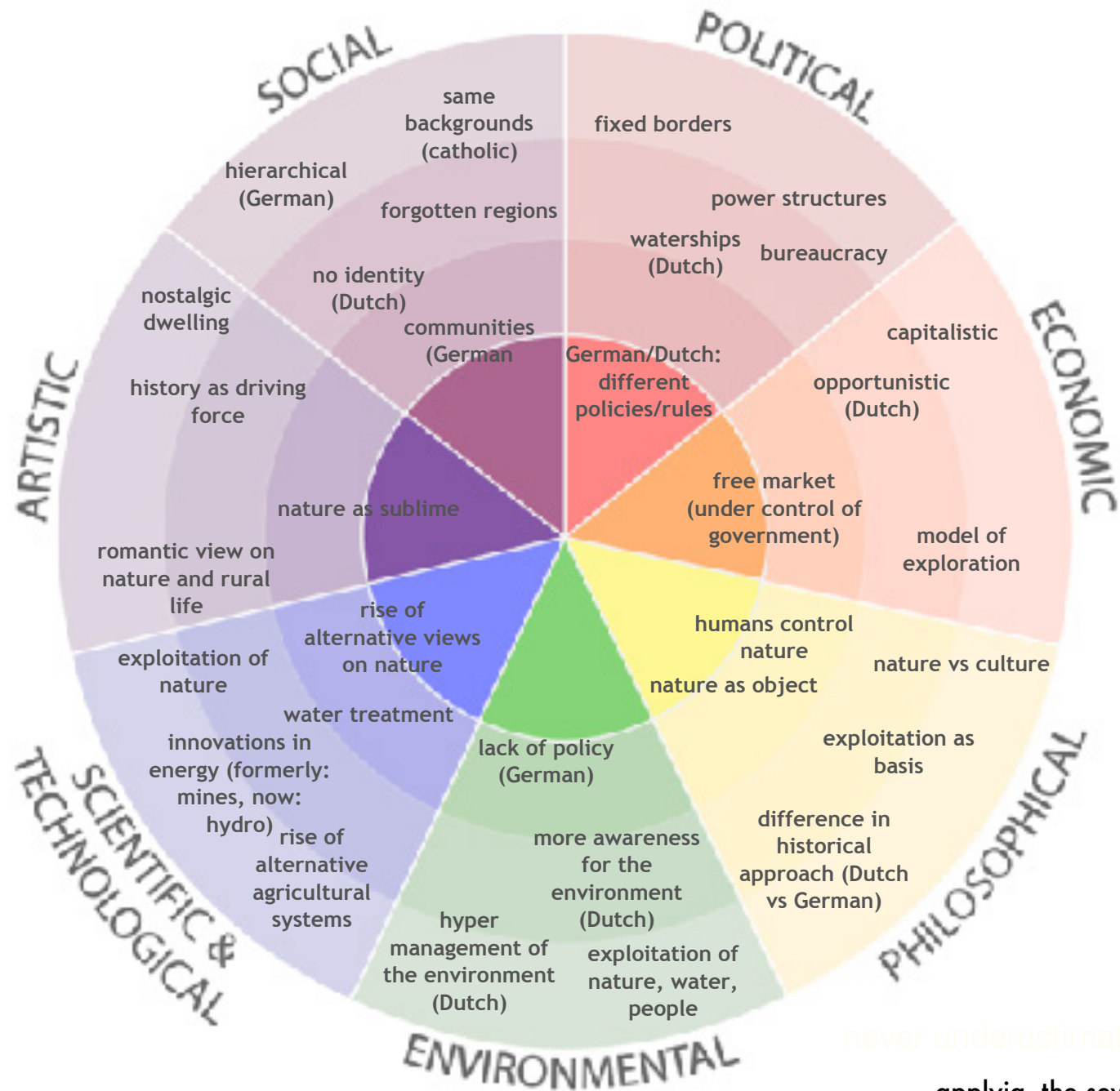
To create our future stories we used Leah Zaidi's seven foundations for speculative design. It offers a holistic approach to worldbuilding. Beginning with geography and ecology, she navigates cultural and social dynamics, economic and political systems, and the role of technology.

The interplay of these elements informs the story - in our case the world that Eva en Yona live in in 2100.

Zaidi emphasizes the importance of narrative and storytelling to breathe life into these speculative worlds, connecting the physical environment with the experiences of its inhabitants. This framework enables a nuanced exploration of future urban landscapes, considering both the tangible structures and the intricate societal relationships within them.

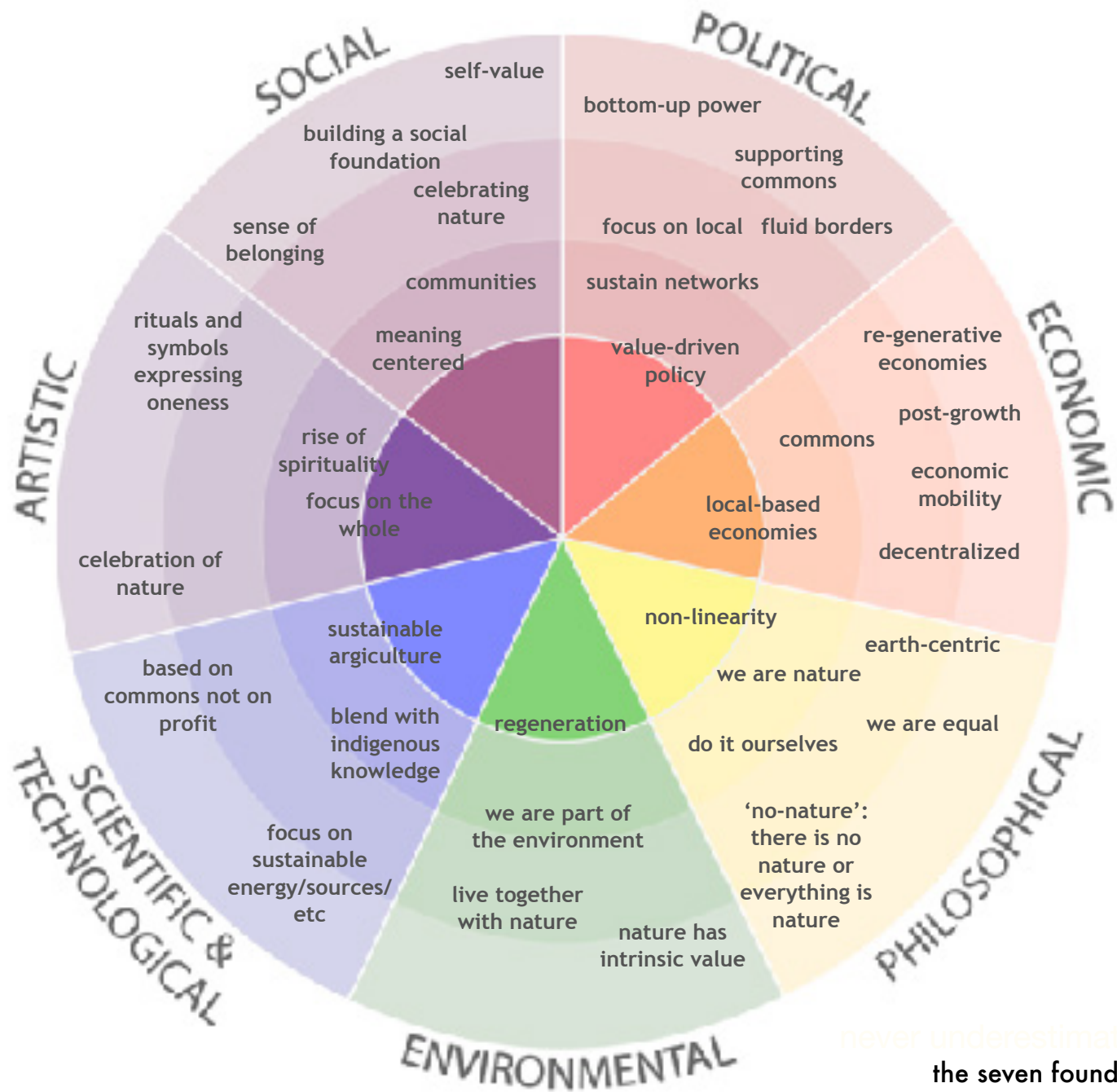


The Seven Foundations by Leah Zaidi



never underestimate di

applyig the seven foundations to the present of the region



never underestimate

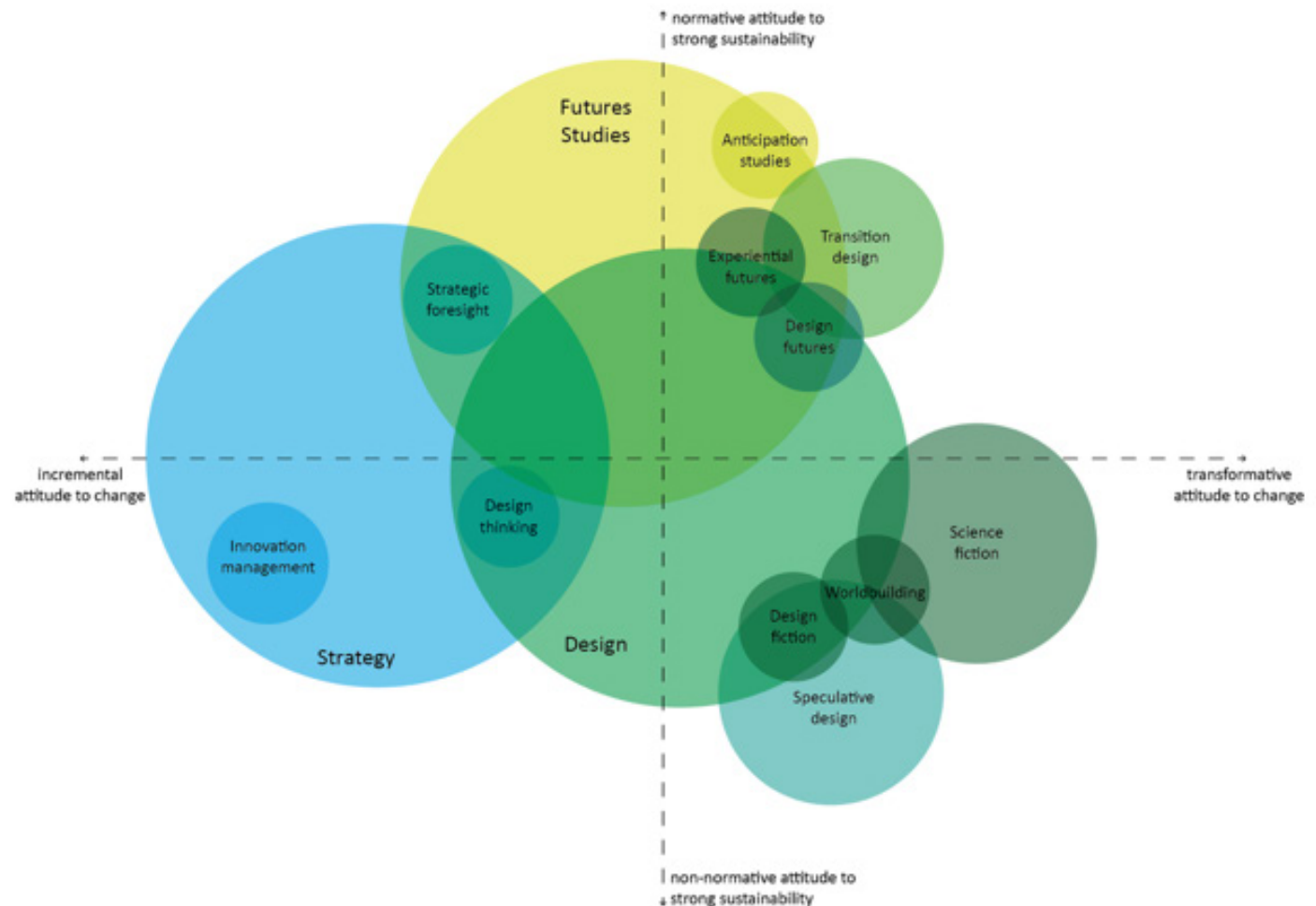
the seven foundations of a preferable future as a basis for the future stories

SPECULATIVE DESIGN

The term Speculative Design is used for a really broad spectrum of ideas, methods and approaches. The primary purpose is to give designers and social scientists tools to reframe reality, to question our current system and come up with different alternatives that are both possible and preferable.

Other design methods and approaches fail at questioning the current status quo and are even encouraging designers to stay within the system. Speculative Design paves the way towards meaningful design for our whole planet.

Speculative design in spatial planning involves envisioning alternative futures - in our case through storytelling. By breaking away from conventional thinking, it fosters dialogue among stakeholders—planners, policymakers, and communities—prompting discussions on values and potential impacts.



model by Corina Angheloiu

SYMBIOCENE/ANTHROPOCENE

The Anthropocene is a geological epoch marked by significant human impact on Earth's geology and ecosystems, particularly evident since the mid-20th century. This terminology is widely used to describe the current time we live in.

Many people feel unsatisfied with this definition and so there are a few counterproposals such as the Symbiocene. The Symbiocene is a proposed future era characterized by a reintegration of human life into a mutually beneficial relationship with the Earth's ecosystems, focusing on harmony and symbiosis with nature

TIPPING POINTS

A tipping point in speculative design signifies a critical moment where small changes can lead to profound consequences. When we talk about tipping points in the future most of these are speculative based on data. Eventhough some are very likely to happen often we do not exactly when and in what conditions a tipping point will manifest.

For our future stories we looked at global tipping points that come forth from current scientific research. An we included policies that outline future goals. These are not tipping points in the classic sense but define a direction and reflect current goals for how policies want to shape the future.

We also see that most 'future thinking' of policymakers do not reach further than 2050. The only clear speculation ahead towards 2100 is RWE's plans for the coal-mine lakes. Their data is based on their own research, not on independent scientific research. In that sense, all we see on the following charts is speculation.

GLOBAL

2023
humans have degraded 40% of all land and altered 70% of land and 87% of the ocean

68% population loss of animals since 1970 and 94% in tropical central and south America
UN and WWF report

2050
to reach a maximum of 2°C of global warming all countries would have to be energy-neutral and nature-inclusive
WUR

2050
40cm expected SLR
KNMI

2085
80cm expected SLR
KNMI

PUBLIC

2030
NL: planting 162 Mio trees

2030
DE: end of browncoal extraction

2030
NL: expected drinking water shortages - rise of drinking water prices
RIVM

ca. 2025
NL: filling mineshafts with cement
De Limburger

ca. 2025
ZL: extending Natura2000 along worm
De Limburger

2050
NL: 100% sustainable energy
KNMI

2050
NL: 50% of Limburg is nature (now 25%; 100.000 ha extra)
Natuur en Milieufederatie Limburg

ca. 2050-2080
DE: resettling drinkingwater stations around Hambach and Inden
RWE Power AG

ca. 2050
ZL: rising minewater stabilizing (rising 2.3m per year since 1994)
De Limburger

ca. 2070
NL: return of fresh-water mussels
Chat GPT

ca. 2100
regional groundwater table restored
RWE Power AG

PRIVATE

farmers waterboard chemelot

ca. 2030
RWE finishes construction of Rhine-water-pipeline
RWE Power AG

2023
NL: dutch ground owners are responsible for -100 meters below ground (problem as more ground is sinking)
De Limburger

ca. 2075
RWE finishes construction of Inden See
RWE Power AG

ca. 2090
RWE stops infiltrating groundwater into wetlands
RWE Power AG

ca. 2110
RWE finishes construction of Hambacher See
RWE Power AG

2025

2030

2050

2090

2125

GLOBAL

ca. 2050
expected population growth to
9.7 billion people
UN

ca. 2085
expected population growth to
10.4 billion people
UN

PUBLIC

2038
NRW: 14 Mia. Euros subsidie for
brown coal region
BMWK

ca. 2050
NL: 30-40% of population will
have migration background
CBS

ca. 2050
DE: 50% of population will be of
working age (significant increase in 70+)
total population is expected to
drop to 81.6 Mio.
Bundesamt für Statistik

ca. 2050
ZL: 10% expected decline in
population growth (more, smaller households)
CPB

ca. 2050
ZL: ca. 5% decrease in space for
agriculture, ca. 3% more space for
nature and settlement
CPB

ca. 2050
NRW: increasing population decline (without migration)
and 42% above 67
Wirtschaft.NRW

2025

2030

2050

2090

2125

WATERS

1 - RAINWATER

the fundament of all freshwater sources. it tends to be low in minerals and nutrients, but may contain trace elements from the atmosphere. its quality can be influenced by factors such as atmospheric pollutants

2 - LOCAL SEEPAGE

this forms the start of many springs/brooks, just below higher sand ridges as a result of rainfall, infiltration in well permeable soils. the water quality of local seepage can vary. It may be influenced by the surrounding geology and land use

3 - REGIONAL SEEPAGE - SEVEN SOURCES

water flow coming from Aachener Wald. It takes about 5-50 years to reach the surface after infiltration. it has a stable temperature of 9 degrees and therefore it forms a special condition for flora and fauna.

4 - REGIONAL SEEPAGE - FOSSIL

seepage source from the Eifel region. It takes about 10.000 years to reach the surface in Aachen. this water is mineral-rich, (sodium, chloride, hydrogen carbonate), sulfur-containing, and sulfur odor

5 - PURIFIED WATER - SEWAGE

purified waters from the cities and villages, are forming about 90% of the water in the wurm. it can meet high-quality standards and is often used for non-potable purposes like irrigation or industrial processes

6 - PURIFIED WATER - INDUSTRY

the quality of purified water from industries is now determined by water quality policies. nutrient levels are controlled, and the water is often suitable for reuse within industrial facilities. water needs to be tested on potential accidents in the purification process

7 - GROUNDWATER - SHALLOW

freshwater; infiltrated rainwater and purified by soil layers. the quality of this water is determined by the various soil types it runs through. it tends to be relatively clean, with nutrient levels dependent on surrounding land use. water levels are relatively deep.

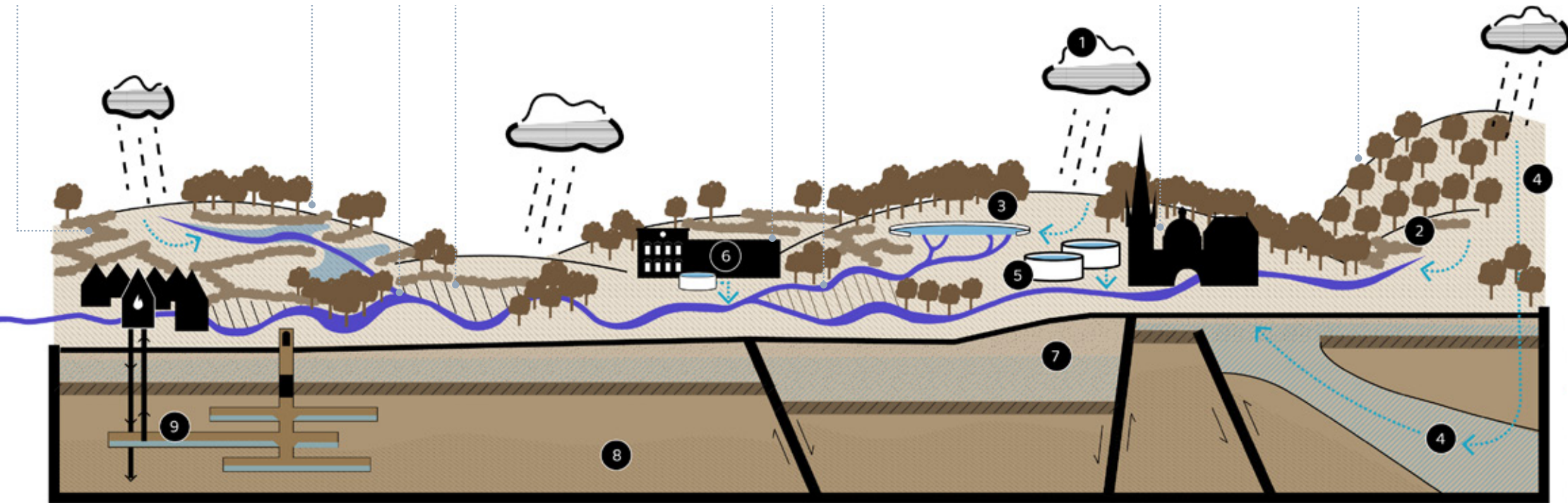
8 - GROUNDWATER - DEEP

saltwater kept underneath the impermeable carboniferous layer. this fossil water is a remainanch of the sea water. the temperature is about 28 degrees.

9 - OLD MINE WATER

groundwater from the fossil layers. the opening in these soil layers makes this relatively warm water more accessible for water extraction. used for heat exchangers in housing projects. sometimes polluted due to the mine industry. Oil, left over equipment etc.

WATERS



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10 _____

GROUND WATER

Due to the organisation of soil layers the mining industry has been flourishing in this region. Superficial coal and brown coal has been excavated from the deeper underground. Therefore the carboniferous has been pierced. This soil layer is an impenetrable layer which keeps the fossil groundwater separated from the higher ground waters. Due to the mining industry these layers are connected by the tunnels.

To enhance the mining industry, the groundwater has been pumped till a lower level. After closing the mining industry the pumping stopped and the water level rose. After decades of soil subsidence the soil started to rise again. The rising water has an ongoing impact on the build environment that is built on the low water level conditions. The salty and sometimes mining industry polluted water gets mixed with more superficial fresh groundwater (uptill 200m deep).

The entrances of the mine are now blocked to prevent the water getting mixed.

The benefit of the deeper water is the temperature. The mine tunnels provide space where warm water of about 28 degrees can be used for heating of dwellings and public spaces like has been tested in Heerlen in the project Minewater. If those groundwater remain carefully separated, the more superficial groundwater can be used for high quality drinking water.

POSTERS

FUTURE STORIES SUMMARY

SACRED WATERS

CIRCULARITY

As an alchemist I know water is not just water. There are many types of waters, with different qualities and characters:

- Rainwater
- Seepage water
- Purified water
- Groundwater
- Flood water

All of these waters have their own ways of shaping the world. As humans we have to help them do their work.

All our interventions are harvesting water and slowing down the runoff towards the streams.

People's relationship with materials had to change fundamentally. We look at how all materials can be reused and enhanced in their value.



AQUAE GRANNI



HOLDING WATER EVERYWHERE

In the past the region has worked very hard to give the creek its dynamic back.

They let the water create its own path, rewinding its course and the entire landscape around it.

Streams and their floodlands became part of the cities and towns once again.

The small creek Wurm, is the center of the valley. Not only spatially but also in our daily lives and our spirit.

As water is seen as sacred today, people are increasing their awareness of the land, the Earth.

In this region we see the Wurm as the center of all relations.

THE WURMTAL



INHERITED RESPONSIBILITY

I grew up with the creek kindergarden. Every day we would be in the Wurmvalley sometimes within the city and sometimes far away in the more remote parts.

Daily tours through the landscape, listening, sensing and taking care of the water.

We grew up with environmental knowledge at the core of our being.

When I turned 6, I had my 'ally-ritual,' where I became the ally of the watercress - making it part of my family.

An ally is like a family member, a kinship between humans and non-humans. As an ally I am responsible of making sure that the watercress's voice is heard amongst people.

7 GENERATIONS

COLLECTIVE LEARNING



A SWIMMABLE LANDSCAPE

For me swimming has a ritualistic significance.

My body measures the 'aliveness' of the water. And through that we understand the vitality of the landscape as a whole.

Today floods have lost their catastrophic impact. The rains are stronger than ever, but I do not fear the water and it's grand power. The past generation has learned to move with the elements. Times of great rain are now times of water harvest.

I hope that my generation will finally turn the tide and repair the broken systems through this deep knowledge of interconnectedness.

I am so proud that this region, my home, has become a European role model for healing landscapes and people.

RESTORING GROUND WATER TABLES

INTERCONNECTEDNESS

LAND CUSTODIAN

A BALANCED HARVEST

I am a custodian of the land, what you used to call a farmer.

A custodian is someone who actively works on the well being of the land. We harvest food, medicine and building materials from the land. And maintain the balance of what we give and what we take.

My parents have been one of the first biodynamic farmers in South-Limburg. They were inspired by post-growth ideas and the Symbiocene - a deep believe in the collaboration of people and the land.

During the period of the great restructuring they moved to Herzogenrath in the Wurmthal. This landscape once shaped by the first hardcoal mines of Europe, was the first landscape to become fully regenerative.



COLLABORATION



COMMON GROUNDS

I knew about the mining hills as they were always part of our horizon. When I was a child these hills gained a new meaning; they became the first common grounds - Neue Allmende/ nieuwe meent - of the region.

Suddenly we all owned land.

These first common grounds helped to make people understand how important custodianship is for land. And how our new harvest could work. As a young student I spent a lot of time researching and experimenting with crops and trees in these areas.

The industrial ruins became breeding grounds for a flourishing future.

To mark this new perspective the region built community centers on the top of the hills. Here locals would meet to think about the future together.

I think there, on top of that extracted old soil, was where my relation with the land was inspired to become regenerative.

LAND OF CHANGING HORIZONS

FLOURISHING INDUSTRIAL RUINS

POST-GROWTH ECONOMY

EXCHANGING

In the early 2000s, numerous small-scale community projects flourished, shedding light on the social aspects of urban gardens and solidarity farming initiatives.

As the economy became more circular also exchanging goods locally - Tauschwirtschaft/ruilhandel - became more structured and accepted. Everyone has access to a community garden and gardening is taught from an early age on.

The whole pedestrian and bike path system that connects cities through the landscape is structured around food and material hubs. Different places are selling different harvests and like that what people used to call 'shopping' became a tour through the landscape. Also delivery systems are hyperefficient and packaging materials are either redundant or reused.

Because of all these shifts what used to be called 'waste' or 'garbage' has been reduced by nearly 99% compared to 100 years ago.

SOLIDARITY

NEW SOILS

OIKOS

Our economy is all about circularity. It took a while but now it has become clear to many people that ecology and economy are actually not supposed to be different.

Both of them are about how we deal with our 'oikos', the greek word for house. How we take care of our home, the Earth.

Regenerative work is all about the vitality of this home. My work in particular is about the aliveness of the soil. Back in the days we called this a holistic view. To me it is about understanding how all is one.

What I do is not only about producing goods but about producing relationships.

Everything we use is seen as a moment within a circular process that comes from the Earth and will at some point return back to the Earth. So essentially all humans do is make new soils. With our food, with our houses, with our clothes, with our bodies.

Words like RESOURCE or WASTE do not exist anymore.

COMPOST



GRADIENTS OF HARVEST

HABITAT QUALITIES

The old distinction of cultural and natural landscapes is a view of the past.

Now we live in gradients of harvest intensity and habitat qualities. That means humans harvest everywhere but only in respect towards all living beings that are part of a habitat. Sometimes that means that humans stay away from places for decades in order to give space to other animals and their harvest.

All we do is based on the existing habitat qualities. We look at the existing vegetation, the type of soil, the amount of sun and light, the humidity and water catchment properties.

We are not turning soil - soil is always covered with plants.

Trees, shrubs, different layers of crops - coexist on the same land. Meadows, forests and marshes - all provide different habitats and harvests.



NEW MATERIALISM



PLANT-BASED-DIET

People have seasonal diets now and a mostly plant-based diet. This makes costs and energy use for food drop immensely. Industrial dairy and livestock farming has been entirely banned. Convenience foods have mostly disappeared and our regional microbiomes are much more diverse and resilient than the ones of my parents.

My parents are still telling about how difficult it was in the first years of the big transformation, to diversify their diet with new local ingredients. Or to stop producing waste.

So many tastes they were not used to, all these new techniques of cooking and food preservation. The efforts for reuse and upcycling, and new skills for repairing things.

The great transformation was not easy but habits adapted faster than anyone could have imagined.

MICROBIOME