Faculty of Design

2023

# MOOC: Designing Resilient Regenerative Systems

Luthe, Tobias

# Sustainability to Regeneration
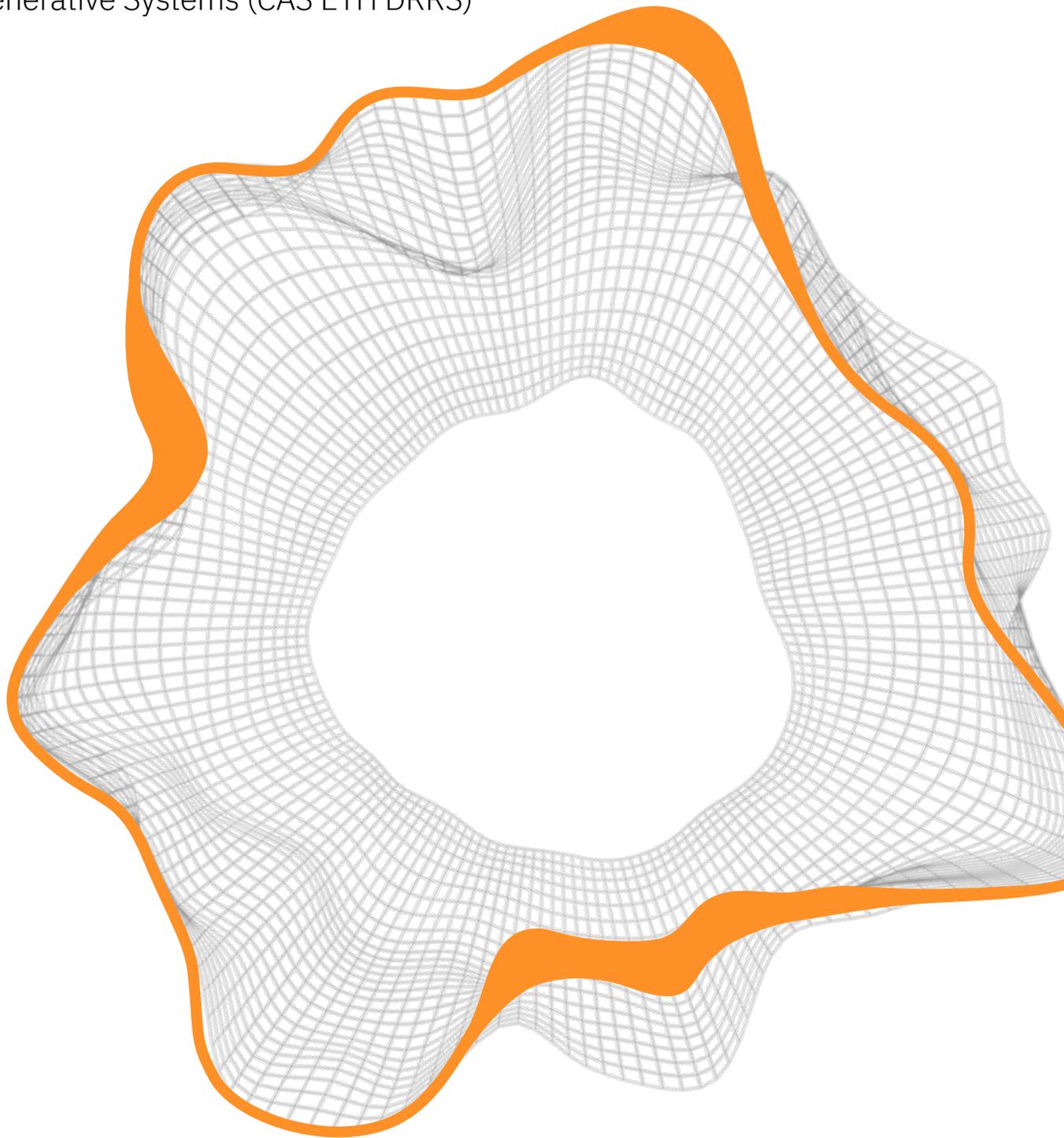
First Certificate of Advanced Studies ETH
in Regenerative Systems (CAS ETH DRRS)

## Designing Resilient Regenerative Systems (DRRS)

This CAS counts towards a planned Master of Advanced Studies (MAS) ETH in Regenerative Systems

*"Worldviews" is a very complex cluster of organizing ideas – dominant cultural narratives that influence how we make sense of the world.*

*It guides what we pay attention to, and how we pay attention to it. And therefore, it's intricately involved in the world we co-create.*

*It is the missing dimension in the discourse about sustainability. If we're not becoming conscious of the worldview and the cultural dimension, we miss the glasses we're wearing as we're dealing with problems or potential solutions. It is a vital element of the discourse on how to change cultures and how to change systems.*

*The entire shift towards a regenerative way of working on sustainability is very aligned with this because at the core of the notion of regeneration is the evolutionary dynamic of a complex nested system, evolving as a whole, not as species and individuals competing against each other. The dynamic complexity framing is saying this thing is constantly in motion.*

Daniel Christian Wahl
Author of "Designing Regenerative Cultures"

*Crises bear potential – we now have the opportunity to fundamentally redesign our societies, our economies, our lifestyles, our human-nature relation.*

*Dealing with uncertain futures can become our new habitual flow, if we sharpen and practice the needed inner and outer development skills. Science has the methods to quantify our transparent global discourse for addressing complex challenges. Design offers the beauty of iterative prototyping guided by tacit knowledge and intuition despite uncertainty.*

*Transformative praxis focuses on place-based interventions, the doing. Organic emergence is the inner compass to befriend uncertainty, to activate the hybridization of science, design, and praxis.*

*In this first CAS of the ETH Zurich DRRS program, we weave relations and build synergies between people, projects, ecosystems, cultures and economies, between theory and practice, and in consciousness of our worldviews – with the common goal to co-create net-positive impact and grow regenerative cultures through supporting your personal QUEST project.*

*Welcome to this next level embodied DRRS learning experience in Regenerative Systems: Sustainability to Regeneration. It's gonna be fun!*
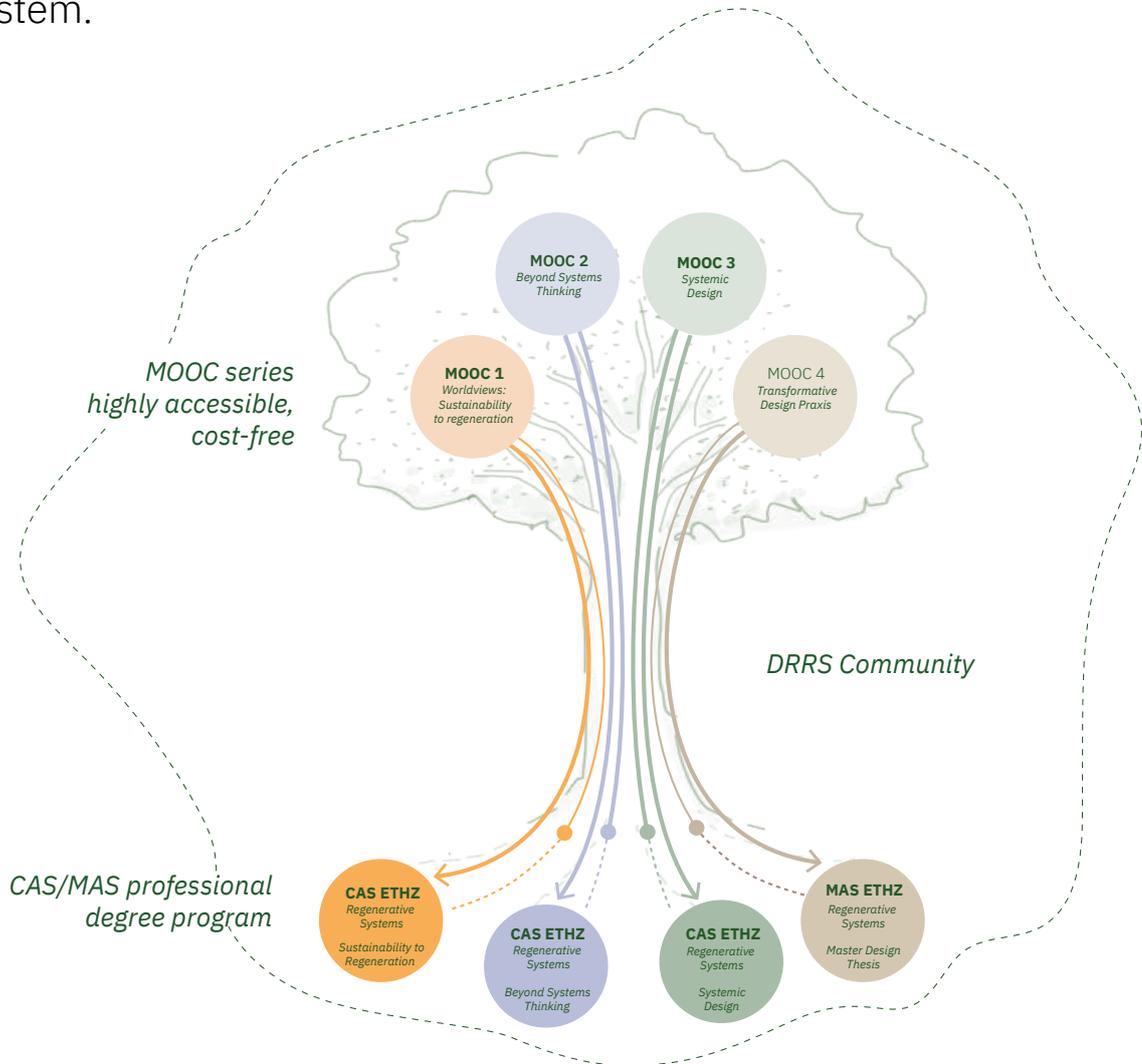
Tobias Luthe
ETH Zürich, DRRS Program Director

# Content

# 01 DRRS learning system

MOOCs, CAS, MAS, community – become part
of the DRRS tree, an analogy for the DRRS
learning system.



The tree's crown is the large-scale, highly accessible and cost-free entry to Designing Resilient Regenerative Systems (DRRS), the Massive Open Online Course (MOOC) series.

It is like carbon dioxide from the air taken up by the leaves of the tree's crown – massive. All MOOCs will eventually run student-paced and serve as standalone virtual course offers, and as entry to its root system, the DRRS professional program.

The successful participation of MOOC#1 is one of the entry doors to study the corresponding Certificate of Advanced Studies (CAS) in Regenerative Systems: Sustainability to Regeneration.

Each MOOC corresponds to one CAS, and all CAS count towards a planned Master of Advanced Studies (MAS) ETH in Regenerative Systems.

CAS alumni get the chance to feedback their learnings into the continuously evolving MOOCs series.

The DRRS community is our learning and support network, and market place in the virtual world, as well as in the physical, in person world. You benefit and contribute to the growth of this rich professional network.

In this magazine, you will discover what you sign up for if you join us on CAS in Regenerative Systems: Sustainability to Regeneration. It is the beginning of a fascinating, new learning journey.

# 02 Voices

*It is too late to only conserve the remaining healthy ecosystems. We need regeneration. This requires positive visions as powerful catalysts for change to work together towards a shared vision of a sustainable and just future.*

Adrienne Grêt-Regamey, ETH Zurich, speaking on a (Y)our 2040 podium.



*Systems thinking means thinking in terms of relationships, in terms of pattern, of connectedness, and in terms of context. And this is extremely important today, extremely relevant to our time. Because when you look at the state of the world today, at our multifaceted global crises, the most striking thing that you observe is that none of our major problems can be addressed and solved in isolation, whether we talk about energy, climate change, the Pandemic, economic inequality, or any of these major problems, they are all interconnected, and interdependent.*

*And in scientific language, we call these systemic problems. And they need corresponding systemic solutions, which means solutions that do not address any problem in isolation, but always in relationship to other problems.*

Fritjof Capra, PhD
Author of "The Systems View of Life"

*To befriend complexity we can start by designing systems of tiny interventions that will drive the systems change.*

Justyna Swat, ENSCI-Les Ateliers Paris, Tiny Labs, teaching a course in Ostana, Italy.

# 03 About the program

Crises hold chances. We are finding ourselves in times of deep, nested and accelerating ecological, social, cultural, political, economic and also personal crises. This dynamic situation is highly complex and uncertain, unpredictable, and even chaotic. Yet within chaos is creativity, and creativity leads to chances for renewal.

We need to re-design systems to be more resilient, and eventually regenerative. Including ourselves, since everything is connected. This is extremely challenging.

Scientific research is the solid base for an informed discourse across cultures, such as the Planetary Boundaries framework.

For dealing with complex systems, we need in addition the relational capacity to connect not only beyond scientific disciplinary knowledge, but with different ways of knowing and reasoning, between scientific worldviews and warm data, across scales of governance, and with communities of practice.

We need to master the relational, the meta-design skills and epistemological plurality as well. We need to learn to zoom out of our current problem focus for a "View from Above" — only with a relational approach can we see patterns and structures, and identify root causes through different perspectives and epistemologies.

Accompanying the focus on engineering technical solutions, we need a parallel culture of asking questions, of designing and iterating interventions, of desirable

visionary narratives in facilitated dialogue, and of personal inner development to cope with emergence of systems.
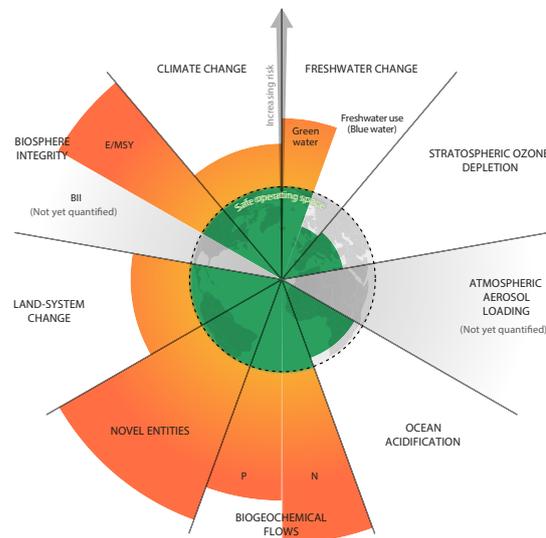


Wang-Erlandsson et al. 2022. Licensed under CC BY-NC-ND 3.0.

Systems undergo wavy patterns with phases of higher stability, and of higher chaos. Where chaos is greatest, there is a chance to intervene, and build resilience.
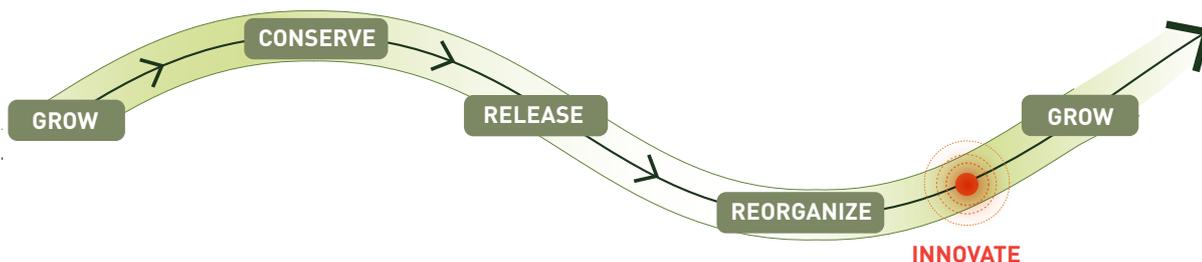


Luthe. T. and R. Wyss. 2015. Illustration by Fitzpatrick, H.

# Hybridizing Science, Design, and Transformative Praxis
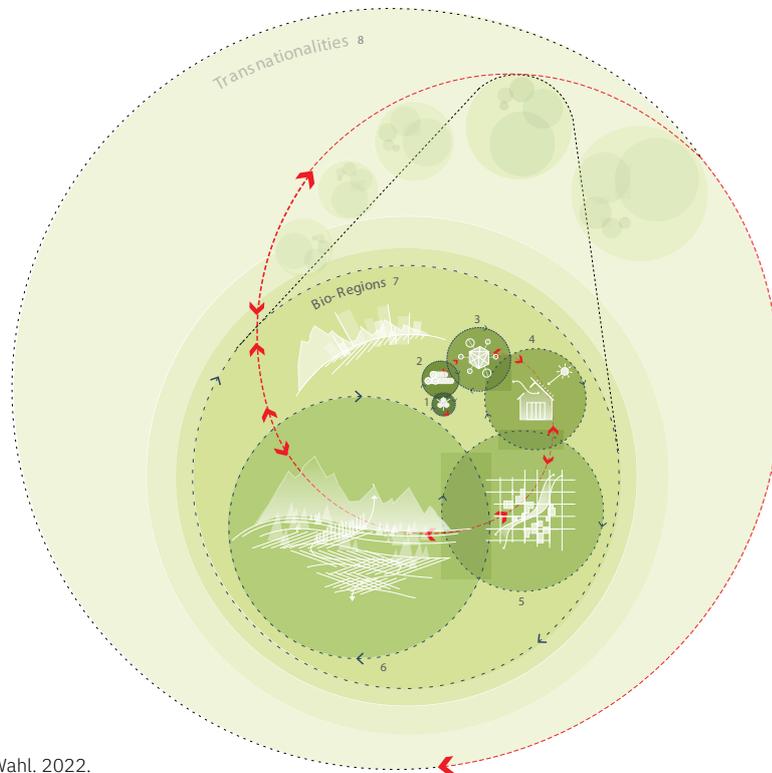


**Nested Scales**

1. Green Chemistry
2. Raw Materials
3. Products
4. Buildings
5. Communities + Services
6. Landscapes
7. Bioregions
8. Transnationalities

Luthe T, Fitzpatrick H, and D Wahl. 2022.

### Excellence in basic and applied science

This DRRS program builds on the qualities of top-notch basic and applied research at ETH in the service of science, society, industry, and politics. To help address emerging, unpredictable, adaptive systems in the direction of regeneration, we deepen our science understanding, such as in ecosystem functions, biogeophysical cycles, and social-ecological resilience. We refresh and activate a tangible methods portfolio, such as life cycle analysis, social network analysis, agent-based modeling, serious gaming, and transdisciplinary real-world design. And we try keeping science light enough by shifting from control and prediction to participating in life's complexity.

### Design

Design is more than creating interventions and solutions to address a need or a problem. Its practice entails envisioning, planning and prototyping, iteration (repetition), and sense checking to create artifacts (products), services, experiences, communication, or visions of the future. To do this well we need to learn to let life, place and culture speak to us in ways that ensure that our designs are place-sourced and in alignment with life's regenerative impulse in the places where the design 'goes on designing'. Systemic design integrates systems thinking (e.g. causality, interconnectedness, circularity, synthesis) with design (e.g. ideation, prototyping, iteration) at ecological, social, technical and economic levels. It is a pluralistic initiative where many different approaches are encouraged to thrive and where dialogue and organic development of new practices are central (upcoming MOOC/CAS#3 Systemic Design).

### Transformative Praxis

Transformative praxis entails transdisciplinary methods, real-world laboratory practice, facilitation of social processes, and personal development by embodying systems with all senses.

### Hybridization

Drawing on the strengths of analysis, abstraction as well as synthesis and embodied participation, all solutions are prototypes to further collective learning and ongoing inquiry into participation in complexity. Facing this challenge that we need to act in the face of uncertainty and incomplete information is 'hybrid'.

# Reframing complexity

When we are facing a complex situation,
we reframe complexity. By looking at the specifics
of a place, a person, culture or ecosystem, problems
become potential or crises become chances.

Deeply looking at place is the bridge to "scaling out": zooming out and looking at other places' specificities - instead of scaling up, of copying from one to another.

### The edge of chaos
Stuart Kaufman suggested: "The best place for a system to be, in order to respond appropriately to a constantly changing world, is at the edge of chaos: Here order and disorder are combined in such a way that the system can readily dissolve inappropriate order and discover patterns that are appropriate for changing circumstances" (in Reason & Goodwin, 1999, p.286).

### Metadesign
Our understanding of design extends beyond that of expressed intention through interactions and relationships. Metadesign is the design of our mental scaffolding, of our worldviews, of organizing ideas behind what we do. It is about acting in the visible, the

concrete, such as designing products, events, instances. And at the same time seeing the invisible, the hidden connection, the abstract, systems, structures, the root causes, and inherent potential.

We may now use different metaphors. The View from Above analogy makes us take a distant view to see patterns and structure, and zoom in on what matters most. If we shift our focus to the invisible, by taking a distant, framing (meta) view, then everything visible, concrete, changes.

Metadesign makes us conscious of patterns, systems, structures and worldviews. The capacity for conscious metadesign combined with aware participation in the specifics of place is the core capacity of a weaver. In this practice we become weavers of relations for transformative impact.
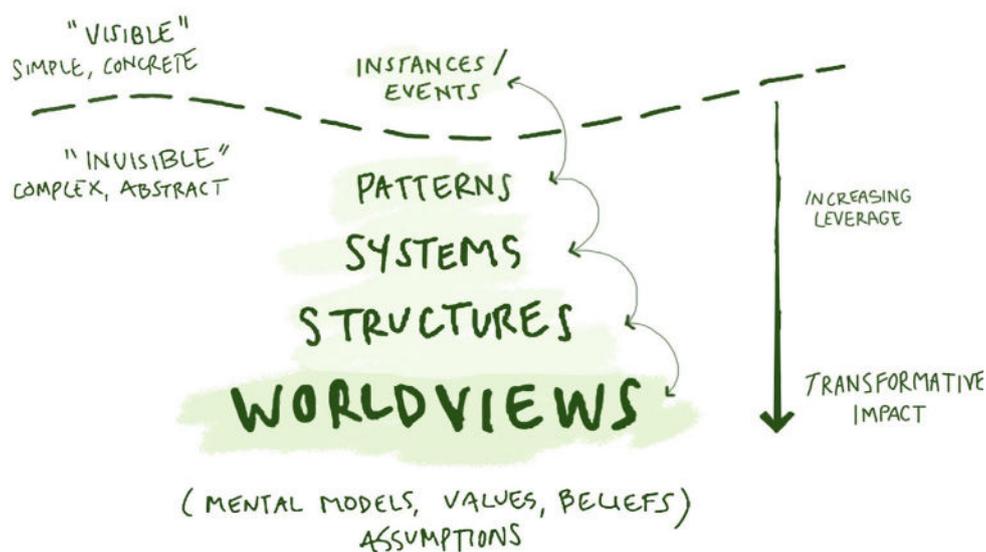


Adapted from: Meadows, D. Thinking in Systems. 2008. Senge, P. 1990. The Fifth Discipline. The Art & Practice of The Learning Organization.
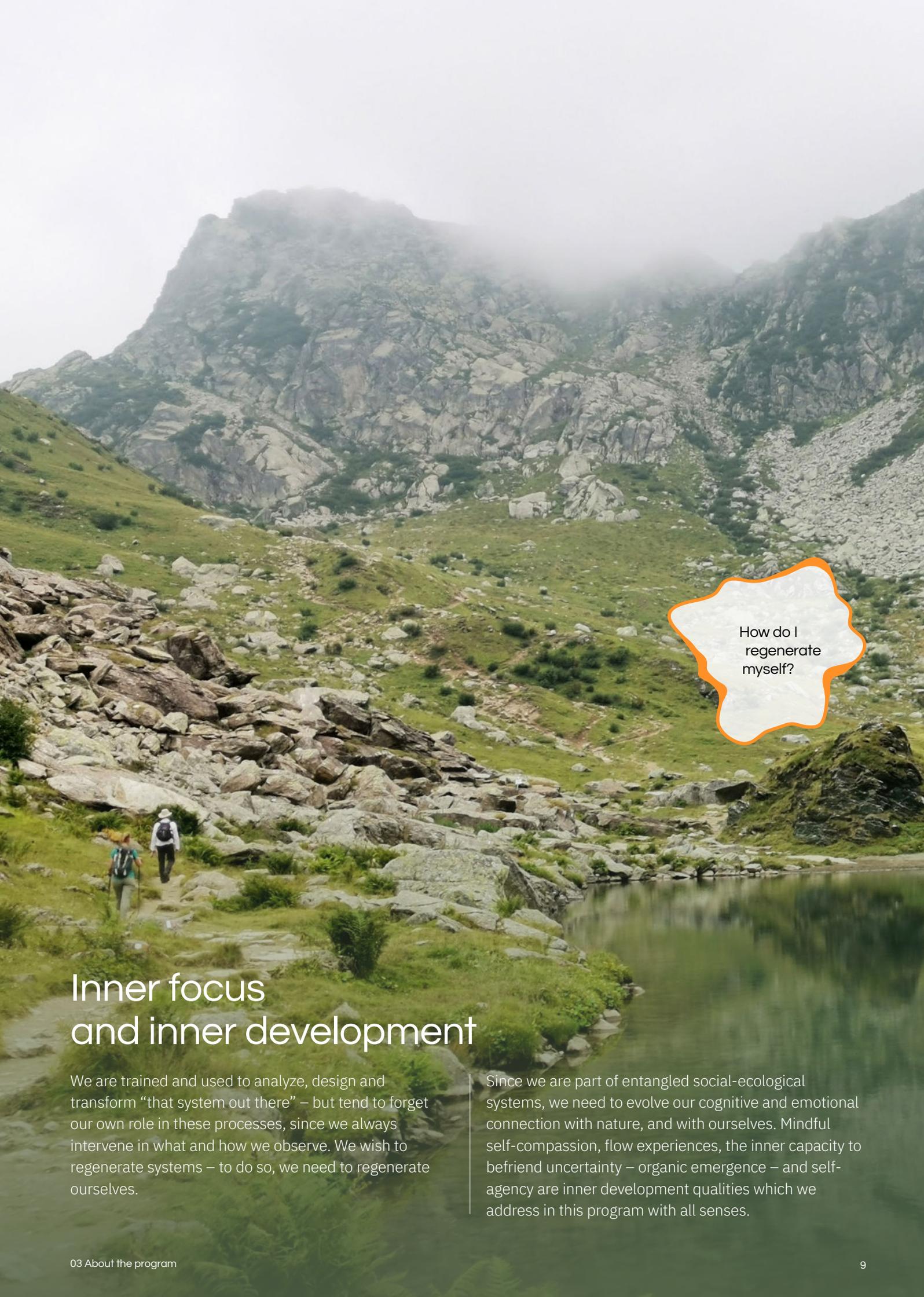
How do I regenerate myself?

# Inner focus
# and inner development

We are trained and used to analyze, design and transform "that system out there" – but tend to forget our own role in these processes, since we always intervene in what and how we observe. We wish to regenerate systems – to do so, we need to regenerate ourselves.

Since we are part of entangled social-ecological systems, we need to evolve our cognitive and emotional connection with nature, and with ourselves. Mindful self-compassion, flow experiences, the inner capacity to befriend uncertainty – organic emergence – and self-agency are inner development qualities which we address in this program with all senses.

# We focus on your QUEST

Your personal QUEST guides your creativity at the edge of chaos. It becomes your transformative design project, where you create real impact in your own bio-region from day one of this course on.



We support you to identify and develop your QUEST – as an individual, or as a team. The QUEST is a concept for guiding us on our individual learning journey in complexity. We can "pack" our learnings and discoveries alongside the "spine" or pathway of the QUEST.

The QUEST is a didactic tool of self-reflection and personal development. It helps us to metadesign.

QUEST offers participants literally a compass – a navigation tool to deal with complexity and uncertainty across system types and governance scales, to get equipped for designerly interventions for resilience and regeneration.

The navigation tool is an analytical, creativity and personal development compass that enables to position disciplinary science within an organic array of relationalities and embodied practice, and trains students to become weavers of regenerative practices across system types and scales.



What is my QUEST – my personal guiding question(s) on my pathway from sustainability to regeneration?

# 04 Why take this course?

Sustainability. An inflationary term. Overused, contested. But is it out of time?
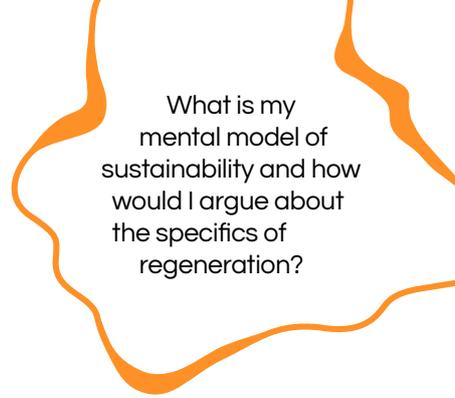
Let's take the effort and recap the origins of this concept: some of the earliest roots of sustainability date back 4000 and more years. They indicate a deep relation with patterns of life, specific to place.



**Seven Generations**

Learning from the past — Present — Designing for the future
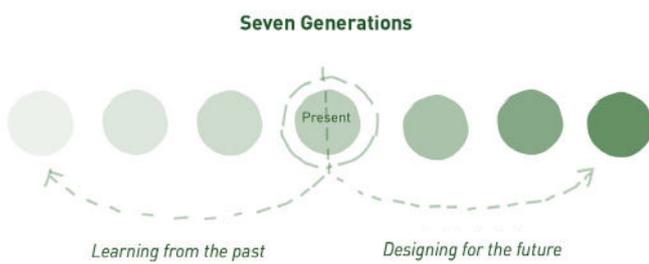
The 7th Generation Principle is an Indigenous concept that the decisions we make today should result in a sustainable world seven generations into the future. Another interpretation bears in mind three generations before, and three to follow one's own.

Some of these origins can be called regenerative. Today we use sustainability in limited ways. Let us be open to unlearn, relearn, relate, integrate – and foster a holistic understanding of sustainability.

**Regeneration.** An already overused term? Is everything that was sustainable now fashionably called regenerative?

There are different ways of framing the meaning of regenerative, referring to different contexts, like ecology, economics, or engineering. Generally, regenerative is a system's capacity to continuously regain and repair its needed energies, functions and resources to vitalize and sustain. Regenerative design actively restores degraded systems. It creates regenerative cultures, which are rooted in cooperation, not in competition.

What is regeneration on a cell level?

What insights offer different disciplines to regeneration?

What is regenerative leadership?

What are regenerative cultures?

How can we grow a regenerative economy on a bio-regional governance scale?

In this course we navigate with such questions and gain deep insights through diverse voices and practices.



Sustainability is here framed as maintaining the status quo, of adding no additional harm. The journey to regeneration where we do things as nature becomes clear. Diagram adapted from Reed 2006 & Roland 2018.

Am I open to entering a process of unlearning and then relearning?

This CAS is the first out of a planned series of three CAS, leading to the planned MAS Master of Advanced Studies (MAS) ETH in Regenerative Systems.
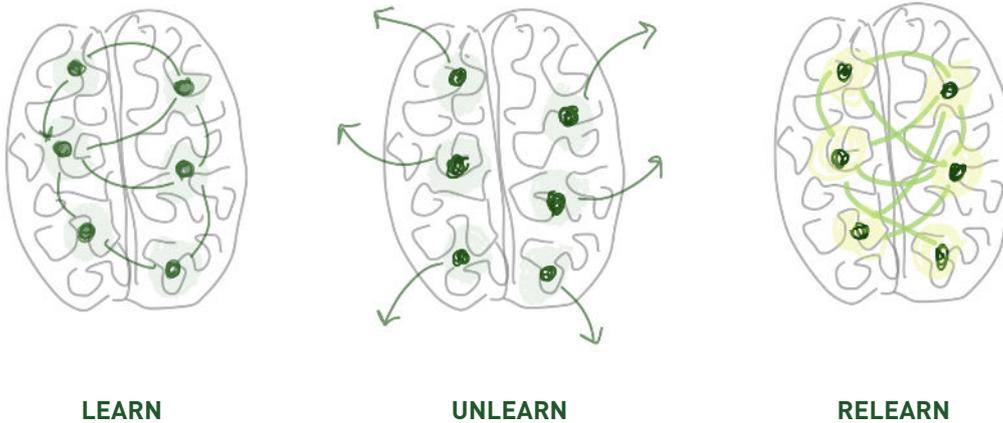
**LEARN**  **UNLEARN**  **RELEARN**

Image adapted from unknown source.

## Unlearn

Unlearning is the process of abandoning or giving up knowledge, values or behavior, either unconsciously or deliberately.

We all were trained in a specific field and way. We gathered experience over time. We are all experts. The more we know, the more we know what we don't know. This makes us humble.

Knowledge systems evolve quickly. What we were taught once may not be the state of knowledge today. The idea of science is that we know more tomorrow than we do today. There exist other types of knowing we may have had no access to. Artificial intelligence is revolutionizing knowledge distribution.

We need to learn to unlearn, to be able to relearn. It is a process of personal growth. This opening and cross-wiring is supporting you on your personal QUEST – your interest, motivation and mission to be part of a network of creative weavers for bio-regional regeneration.

## Relearn

In the DRRS program, you enter a learning journey in communities with direct practical relevance.

Together, we:
— deep-dive into scientific and philosophical discourse with critical and transformative mindsets,

— foster a functional usage of scientific methods,

— acquire new designerly tools,

— physically engage in established real-world laboratories and bio-regional learning centers,

— practice weaving for leading transformations and designing regenerative cultures across scales of governance,

— learn to embrace complexity and dance with systems – through embodiment, flow and organic emergence,

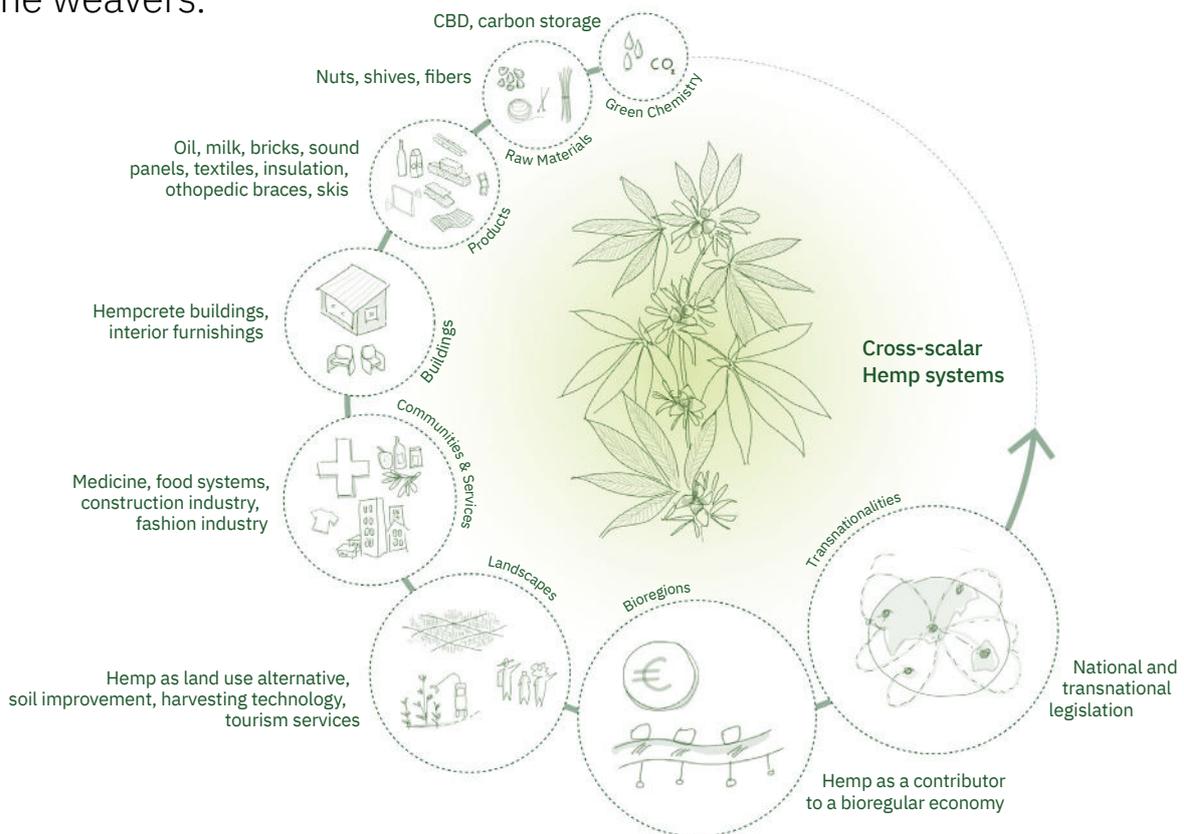— extend our local and global professional networks.

Through the individual or team QUEST, virtual content nudges local physical social outdoor action with impact from day one on in the region where participants live and study.

# Becoming weavers of systemic innovation

How do we transform a complex, dynamic system, where focus on technical solutions is not sufficient?

Course participants will become experts in navigating across complex topics and in engaging a rich array of hybrid methods, weaving their synergies to lead to effective transformative impact in the real world.
In this course, we all become weavers.



CBD, carbon storage

Nuts, shives, fibers

Oil, milk, bricks, sound panels, textiles, insulation, othopedic braces, skis

Hempcrete buildings, interior furnishings

Medicine, food systems, construction industry, fashion industry

Hemp as land use alternative, soil improvement, harvesting technology, tourism services

Green Chemistry

Raw Materials

Products

Buildings

Communities & Services

Landscapes

Bioregions

Transnationalities

Cross-scalar Hemp systems

National and transnational legislation

Hemp as a contributor to a bioregular economy

Based on Luthe 2019.

One illustration is the transformation towards a bio-regional, resilient and regenerative economy. Clearly a complex challenge. Where to start and what to focus on? Such a systems transformation requires a systemic approach.

We learn that a single point, technical solution approach is not enough to transform a system. The analogy of a complex system is a wobbly jellyfish, a thing that changes its shape as soon as we grab it at one corner. It will wobble away. Only when we take it as a whole, activating it at multiple points at the same time, can we move the wobble from one state to another one. The DRRS "wobbly grid" logo in its different shapes signifies this analogy.

Speaking practice, industrial hemp as a misunderstood and partly forgotten plant has the potential to fuel such an envisioned economy. Hemp is so diverse and systemic, that it can run an entire economy. The plant's potential across the different governance scales needs to be activated simultaneously, technically, politically, culturally. Only a focus on e.g. the building sector would not have enough momentum to move the system.

Each scale depends on all other scales. Any decision on one scale needs to relate with a continuous zoom in and out to other scales. Each scale has its own disciplinary circularities to focus on. Yet it does not matter on which scale we enter the system. With a systemic zoom-in-zoom-out pattern, the entire system can be activated.

# 05 Key benefits

The new CAS as part of the planned MAS in Regenerative Systems is specially developed for the experienced professionals. How come?

*What do I wish to add to my personal skills, and how do I want to grow?*
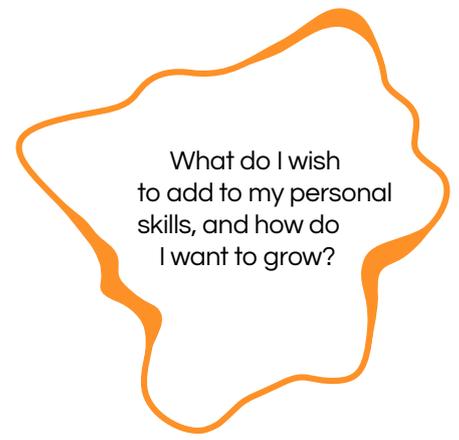
In this new CAS, the theories, methods and illustrations of the established DRRS MOOC#1 are deepened and critically applied to participants' individual professional experiences and QUESTs – through live dialogues with thought leaders, co-learning in groups, personal mentoring, and real-world immersion.

This hybrid program between science, design and praxis offers these key benefits to you:

### Update on the latest discourse and sense making in science
Deep-dive into relational scientific discourse for its applicability to transformations towards regeneration.

### Become expressive and creative like a designer
By expressing intention through interactions and relationships, you acquire designerly praxis from various design disciplines, and practice creation in uncertainty.

### Practically move things forward
We practice regenerative design as a part of established real-world laboratories and bio-regional learning centers. Together we share hands-on and rich professional support for your individual QUEST project from different geographies, climates, cultures, topographies, political systems and governance scales.

### Befriend uncertainty through personal development
You acquire personal development tools for dealing with uncertainty. You learn to embrace complexity and dance with systems – through embodiment, flow and compassion you build organic emergence.

### Weave relations and design for systemic innovation
You practice weaving for leading transformation across scales of governance, applied by weaving practices to your own context. Students become teachers, and teachers become students.

### Expand and deepen your professional network and communities
You extend your local, regional and global professional network, and develop strategic and practical impact towards your next professional future.

### Get reach – become a teacher to thousands of learners
As the DRRS alumni, you can provide your growing expertise, your QUEST progress, through the Massive Open Online Course (MOOC) series to all learners joining the program, and thus contribute with massive reach.

### Be most cost effective to spur change from within
From an employer's perspective, supporting an employee or even a team of employees to engage in this program is the most effective and cost efficient way to build capacity and design for resilience and regeneration. DRRS supporting your employee's QUEST to spur change from within your organization is considerably less expensive than hiring external consultants, if the output were ever comparable.

### Enjoy a fun learning journey through innovative experiential didactics
Virtual content nudges local, physical, social, outdoor experiential action, such as Systemic Cycles bike riding, Serious Game playing, View from Above flying and hiking, building and soiling, visual dialoguing and mapping. You will be highly inspired and motivated.
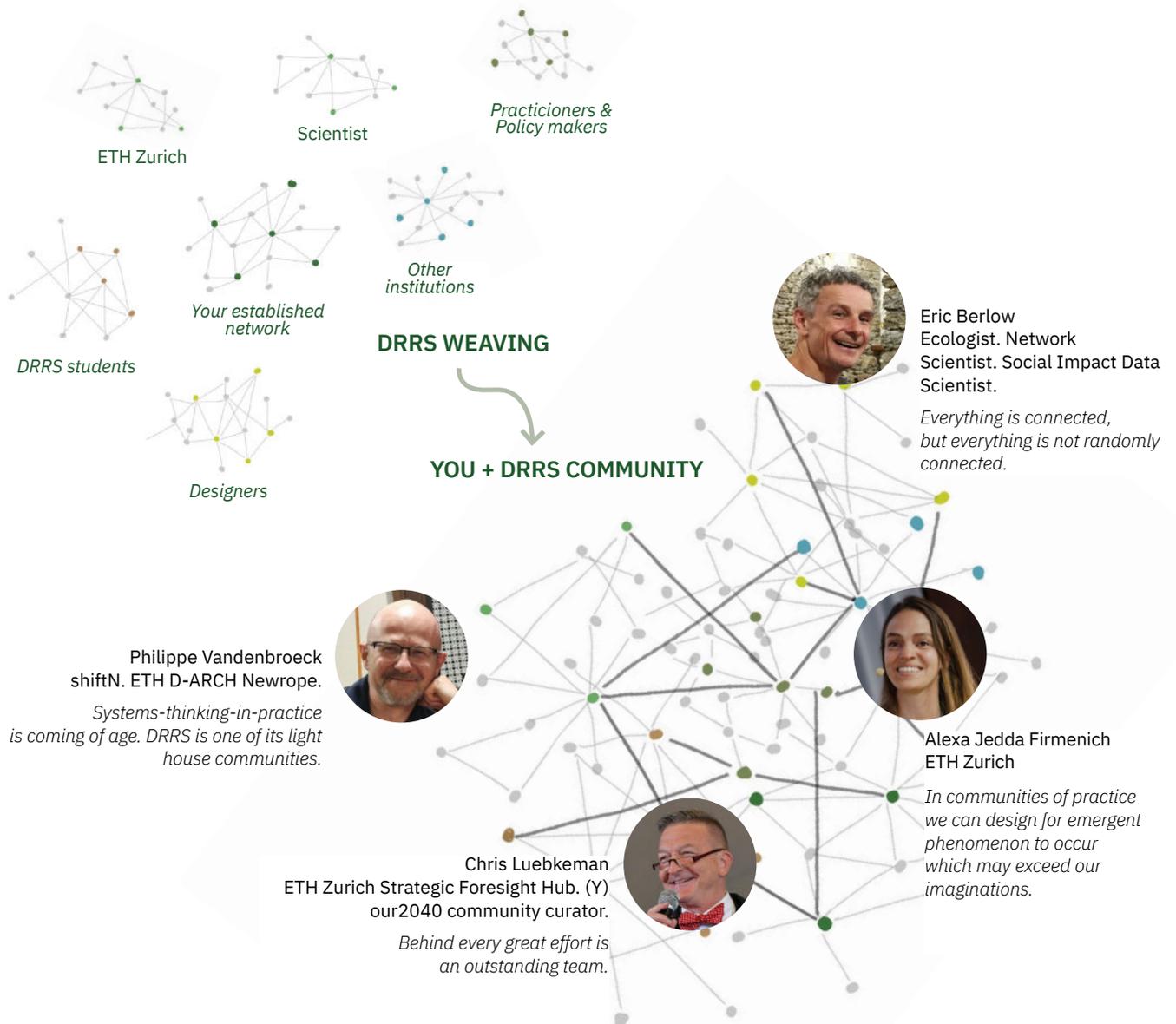
### Finally – earn your ETH Zurich degree
We place knowledge, experience, output and networks first in the list of benefits. Still, a professional degree certificate by ETH Zurich as a globally leading technical university is a key benefit for your future career path.

# Professional community

Weaving relations and participating in a joint journey towards co-creation for resilience and regeneration as part of learning communities is at the core of DRRS program participation benefits.

Where do I find mutual support on my pathway towards a more resilient and regenerative future?

ETH Zurich

Scientist

Practicioners & Policy makers

Your established network

Other institutions

DRRS students

**DRRS WEAVING**

Designers

**YOU + DRRS COMMUNITY**

Eric Berlow
Ecologist. Network Scientist. Social Impact Data Scientist.

*Everything is connected, but everything is not randomly connected.*

Philippe Vandenbroeck
shiftN. ETH D-ARCH Newrope.

*Systems-thinking-in-practice is coming of age. DRRS is one of its light house communities.*

Alexa Jedda Firmenich
ETH Zurich

*In communities of practice we can design for emergent phenomenon to occur which may exceed our imaginations.*

Chris Luebkeman
ETH Zurich Strategic Foresight Hub. (Y)our2040 community curator.

*Behind every great effort is an outstanding team.*

Participants already come with their own networks. With DRRS, you connect your network with those of your fellow students, of alumni, and with the DRRS virtual community with more than 1600 members (03/23).

You get access to the rich ETH Zurich science community, and to many other partnering institutions from science, design, the public sector, and the private sector. You connect with established real-world labs and be inspired to start and develop your own. Through the physical study stream in this hybrid program, guided by the QUEST you grow both your local-regional and your global professional network.

The synergies of all our networks coming together are more than their sum – because new relations add diversity and flexibility, and open up new potential.

# 06 Course setup

A hybrid course setup as entry to DRRS. This CAS with its introducing MOOC is a hybrid program that you can study virtually from wherever you live, in a pace that you can combine with your professional and private life.
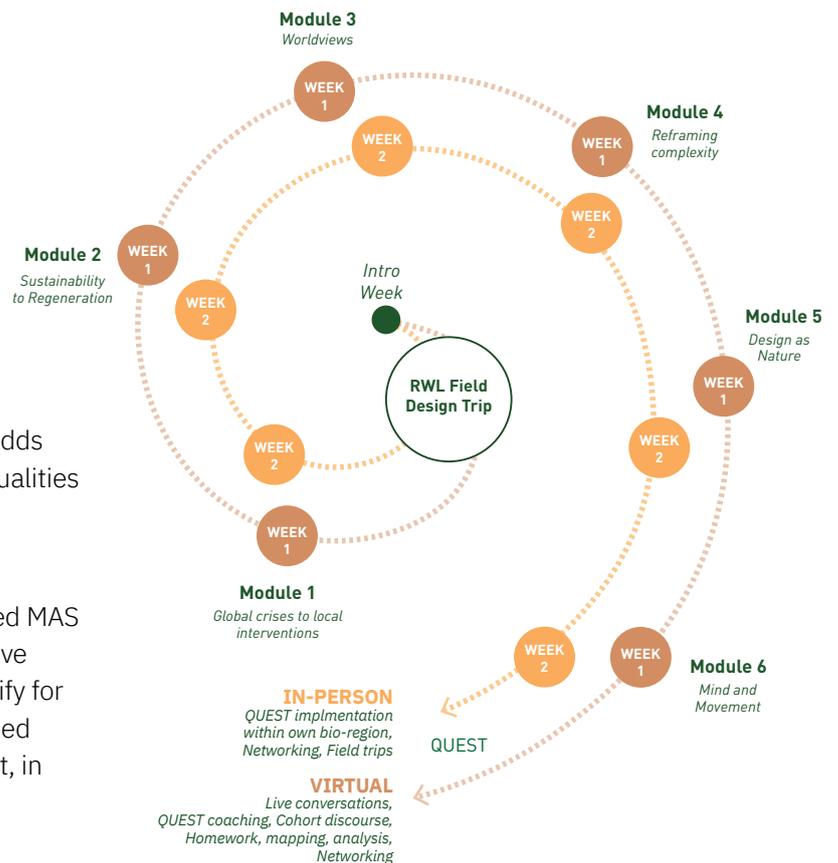
The distinctive physical, in-person component adds the real-world facets with all their unmatched qualities to the flexible virtual part, and makes it hybrid.
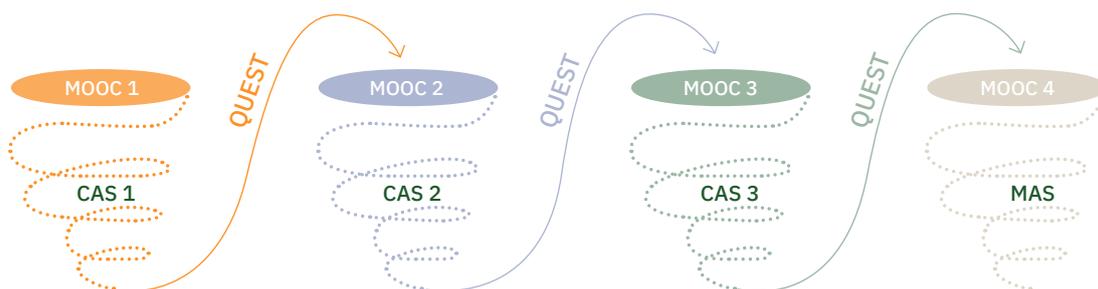
### The CAS rhythm

This is the first CAS counting towards the planned MAS (Master of Advanced Studies) ETH in Regenerative Systems, with two further CAS to follow. To qualify for being accepted to the CAS, you must have finished the respective MOOC at the time of the CAS start, in addition to the general requirements of the ETH School for Continuing Education.

Corresponding with MOOC#1, this CAS is organized in six thematic modules. After the first virtual introduction week, the entire course engages in a physical real-world design field trip to the MonViso Institute, Italy. This trip is mandatory.

The six modules organized in two weeks each include virtual live conversations with DRRS instructors and

further guest speakers, in-depth virtual discussions, individual QUEST coaching with external experts, and peer learning.

At the end of this CAS, participants will be asked to submit a self-reflection of their QUEST in both textual and graphical form.

**Module 3**
*Worldviews*

**Module 4**
*Reframing complexity*

**Module 2**
*Sustainability to Regeneration*

*Intro Week*

**RWL Field Design Trip**

**Module 5**
*Design as Nature*

**Module 1**
*Global crises to local interventions*

**IN-PERSON**
*QUEST implmentation within own bio-region, Networking, Field trips*

QUEST

**Module 6**
*Mind and Movement*

**VIRTUAL**
*Live conversations, QUEST coaching, Cohort discourse, Homework, mapping, analysis, Networking*

WEEK 1 / WEEK 2 (repeated per module)

MOOC 1 — QUEST — MOOC 2 — QUEST — MOOC 3 — QUEST — MOOC 4

CAS 1 — CAS 2 — CAS 3 — MAS

**MOOC TO MAS PATHWAYS**

# Course modules and themes

The CAS rhythm is organized in six thematic modules, corresponding to and expanding from MOOC#1, and guided by the QUEST.

Each module has a free evolving topic opportunity, self-curated by the group.

Introduction to the program, the learning cohort, your QUEST, the field design trip.

### Module 1
Global crises to local interventions: navigating nested crises; societal and individual root causes; solutions or interventions; transformation and transition; free topic

### Module 2
Sustainability to Regeneration: sustainability origins and mental models; sustainability science; regeneration across contexts and scales; from cells to ecosystems to societal to personal regeneration; free topic

### Module 3
Worldviews: different ways of knowing and reasoning; science; warm data; (meta) design; free topic

### Module 4
Reframing complexity: complexity, simplicity, reframing; weaving; free topic

### Module 5
Design as nature: ecosystems functions; deep ecology; we are nature; biomimicry; bio-infused communication; nature finance; free topic

### Module 6
Mind and movement: flow experiences; self-compassion; meditative nature practice; self agency; mountaineering metaphors; regenerative leadership; organic emergence; systemic cycles; free topic

### Learning competencies
There are three domains of learning competencies. All domains and competencies somehow relate, and will be taught and learnt in relation with each other, with your QUEST, and the QUESTs of fellow students. We here list some of the most prominent ones you will engage with (non-exhaustive list).

### Cognitive domain:
Themes: sustainability science, ecosystem functions, biodiversity, biogeophysical cycles, global environmental change, planetary boundaries, worldviews, resilience, regeneration across themes and scales, cross-scale governance, circularities, bio-regional economies, nature finance, design as nature, transdisciplinarity, real-world laboratories.

Methods: social-ecological resilience assessment, supply chain mapping, social network analysis, serious games, systemic cycles, transdisciplinary problem framing, visual dialogue, sketching, Gigamapping, rich design space, facilitation, real-world lab design, systemic innovation

### Behavioral domain:
systems thinking, scientific reasoning, warm data inclusion, weaving, critical thinking, design thinking and doing, metadesign, reflexivity, deciding in uncertainty, embodiment, physical work

### Socio-mental domain:
learning in communities, regenerative leadership, personal resilience, sensing, intuition, reflection, flow, mindful self-compassion, organic emergence

How to regenerate
a mountain community
as a social-ecological
system across scales and
related with the urban?

# 07 The field design trip

## Enacting with community regeneration in an alpine-urban relation

Right after the virtual introduction week, the whole CAS cohort – maximum size 20 participants – meets for a 10 days real-world immersion trip in the Italian Alps. The small mountain village of Ostana, in the High Po river Valley, Piedmont Region, is home to the MonViso Institute (MVI), a real-world laboratory and bio-regional learning center on an elevation of 1500m asl. MVI was launched in 2015. In the past 8 years, MVI has been deeply engaging in regenerative practices across governance scales and themes.
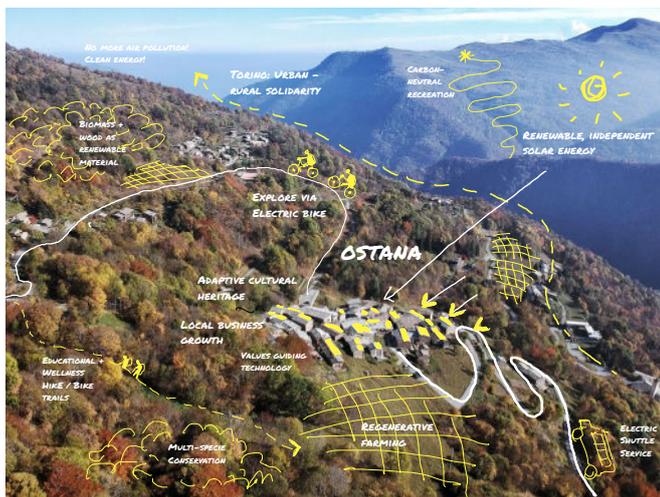


At this unique location, where we can experiment in reality, with access to various resources, places, people, community, and deep understanding of the place and its specifications, we will engage in regenerative praxis. More specifically, we will practice community regeneration interventions in relation with the urban and the valley, the incoming and outgoing tourist and second home owners and day workers, with the local people, the old and the new ones.

We will do so by developing and playing a prototype of a serious game with local and regional people, on real friction topics in the regeneration processes.

Part of this game development is diving into this formerly abandoned mountain community and its regeneration pathways over years, to embody parts of the local economy. We meet with locals, explore the surrounding, together bake pizza at the outdoor wood oven, get dirty hands for some harvesting help to a local organic food producer, and learn to weave cashmere goat wool and wooden baskets. We practice weaving in a DRRS sense – learning place specifics while building relations with the region through a Systemic Cycles bicycle tour from/to Ostana.
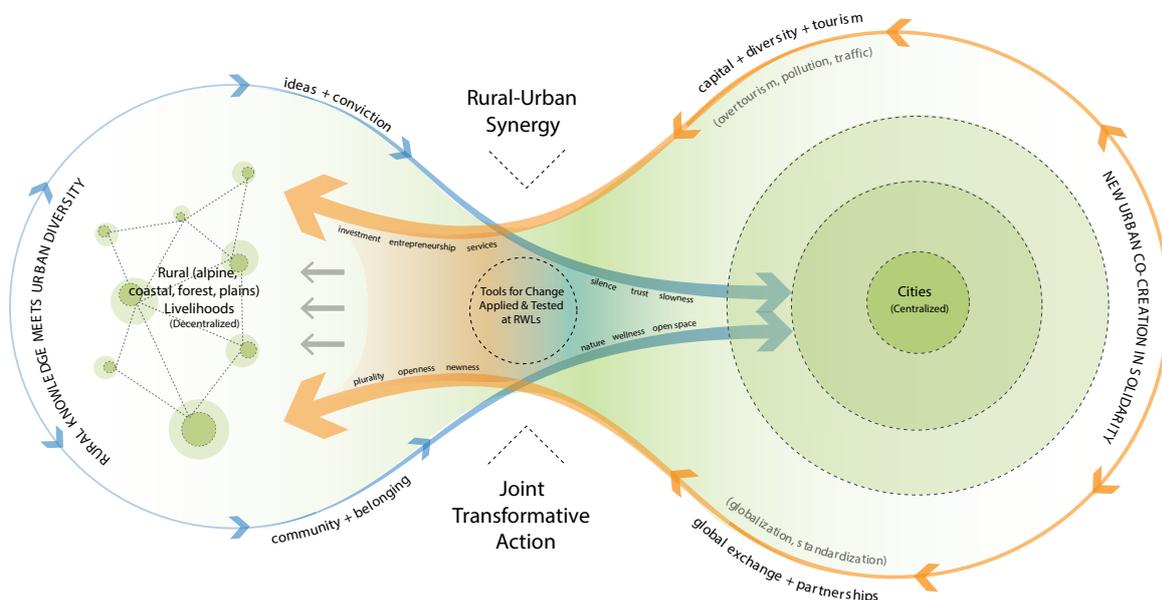


Luthe T and H Fitzpatrick. 2023. Work in progress.

How to use scientific, designerly and embodied tools to engage in social - ecological regeneration?

# A real-world immersion

This four day cycle tour with overnight stays in simple Agriturismi will make us familiar with the region. We meet stakeholders, map linear and circular flows, and experience flow.

Back in Ostana we will use the regional and local (warm) data, produce the game, and invite actors for a social evening of play.

The cycle trip involves visual dialogue and hands-on practices, planned and spontaneous encounters. We will meet our physical and mental limitations, and build organic emergence as part of our personal development practices.

From a social side, this in-person gathering is what a virtual and even a conventional classroom setting lacks – enacting complexity, embodying systems, growing together as a professional learning community with deeper connections, maybe even evolving friendships, time to exchange and best equipped for the following virtual collaborative learning period.

Synthesis map developed by Politecnico Di Torino students in a MSc Systemic Design course taught by Luthe et al. 2019/2020. Detailed info upon request.



**HIGH RIVER PO VALLEY**
LOCAL ENGAGEMENT FOR A SUSTAINABLE DEVELOPMENT
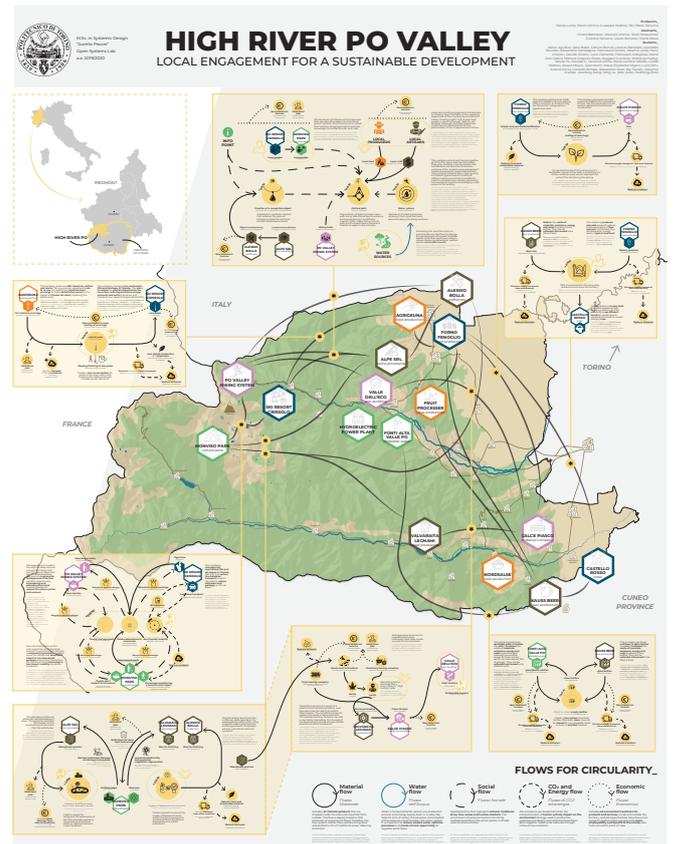
# The MonViso Institute

MVI is an open innovation ecosystem – a real-world laboratory for research, education, entrepreneurship and new living – on sustainability transitions and regenerative design for a more resilient and just society.

One of our facets is that of a bio-regional learning center. MVI is a place of mind where outdoor sports and living are culturally deeply embedded, and a state of mind, a design ethos independent from place and ready to scale out.

What can we experience in a real-world lab that cannot be constructed within universities?

44°69'70.99"N
7°18'98.87"W
1500m asl

**MonViso** INSTITUTE

# Experiment in reality

We learn through science-based experimentation the designerly way in the real world. A real-world lab is an experimentation place with open system boundaries, where the unplanned happens.

Unique real-world illustrations take DRRS participants to partnering real-world labs and bio-regional learning centers, in this CAS to Ostana Italy – embodying complex systems from governance scales of material supply chains to products, buildings, communities and their services, to landscapes, bio-regions, and transnational cooperation.

It's unplannable, it's real, it's fun. An experience that cannot be constructed, but lived.
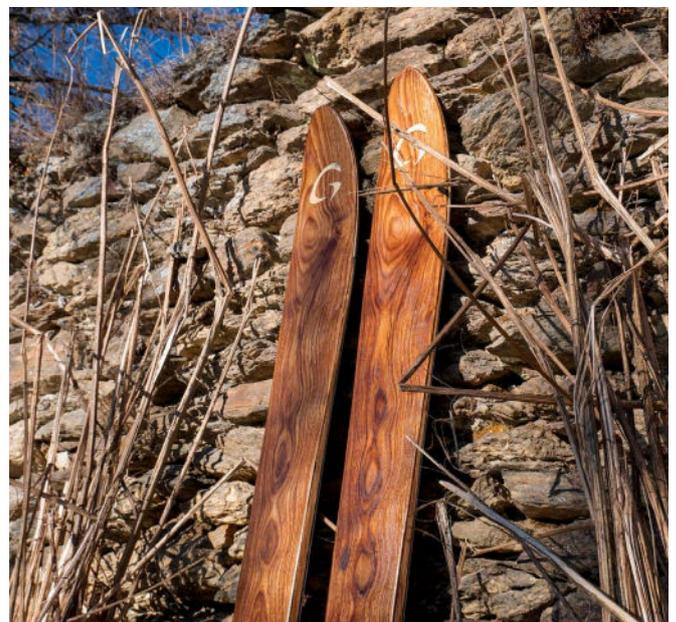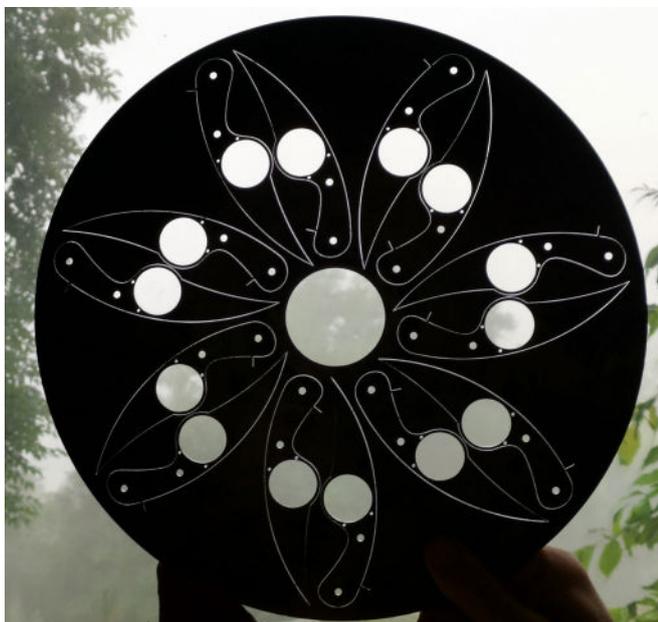
# Mountaineering metaphors

Mountain topography adds dimension and diversity to a flat surface. They serve like an antenna for change that often hits mountain(s) (livelihoods) the first and the worst. They also have been home to ancient resilience and regeneration practices since these are extreme environments humans learnt to relate with.

They are our agricultural and cities' water reservoirs. They are places for exploration, for personal discovery and growth. They allow for a View from Above, for taking a meta perspective. In this field trip, we will get the chance to explore the Cottian Alps at the border to France with the towering Monte Viso in sight, 3842m asl.

When was the last time you moved beyond your physical and mental comfort zone, and upon return experienced "flow"?

# Systems embodiment



Systemic Cycles

What forms
of systems
embodiment are
new to you?

Systemic Cycles as one of the DRRS didactics explores bio-regions to learn Weaving. Weaving relations between place and people. We practice doing so through various activities on our tour – of course through slow moving with our bicycles through the region, from stone splitting based on visible density differences and taught by a Chinese artisan, to visual dialoguing and sketching circular opportunities in a cooperative-owned microbrewery hostel, to harvesting hemp at the MVI campus.

What is the right balance between local traditions and timely innovation, and how can we design for that place-based sweet spot?

# The specificity of place

Regeneration in complexity requires building deep relations with place, including local cultures. In the community of Ostana, where the MonViso Institute is located, the Occitan culture has a long tradition. One of its icons are traditionally built stone walls, strongly affecting architecture and regenerative buildings. We meet other Occitan icons and explore how local traditions and global innovation can meet in this specific case, and add this to our serious game prototype. One question may be then how to scale out, and how to relate to our individual Quests?

Experience community and engage in building trust while opening for different worldviews — through various interactions, e.g. visual dialogue.

Connect with local and regional place through helping a local young female entrepreneur on her organic mountain farm and making pizza together at the MVI campus.
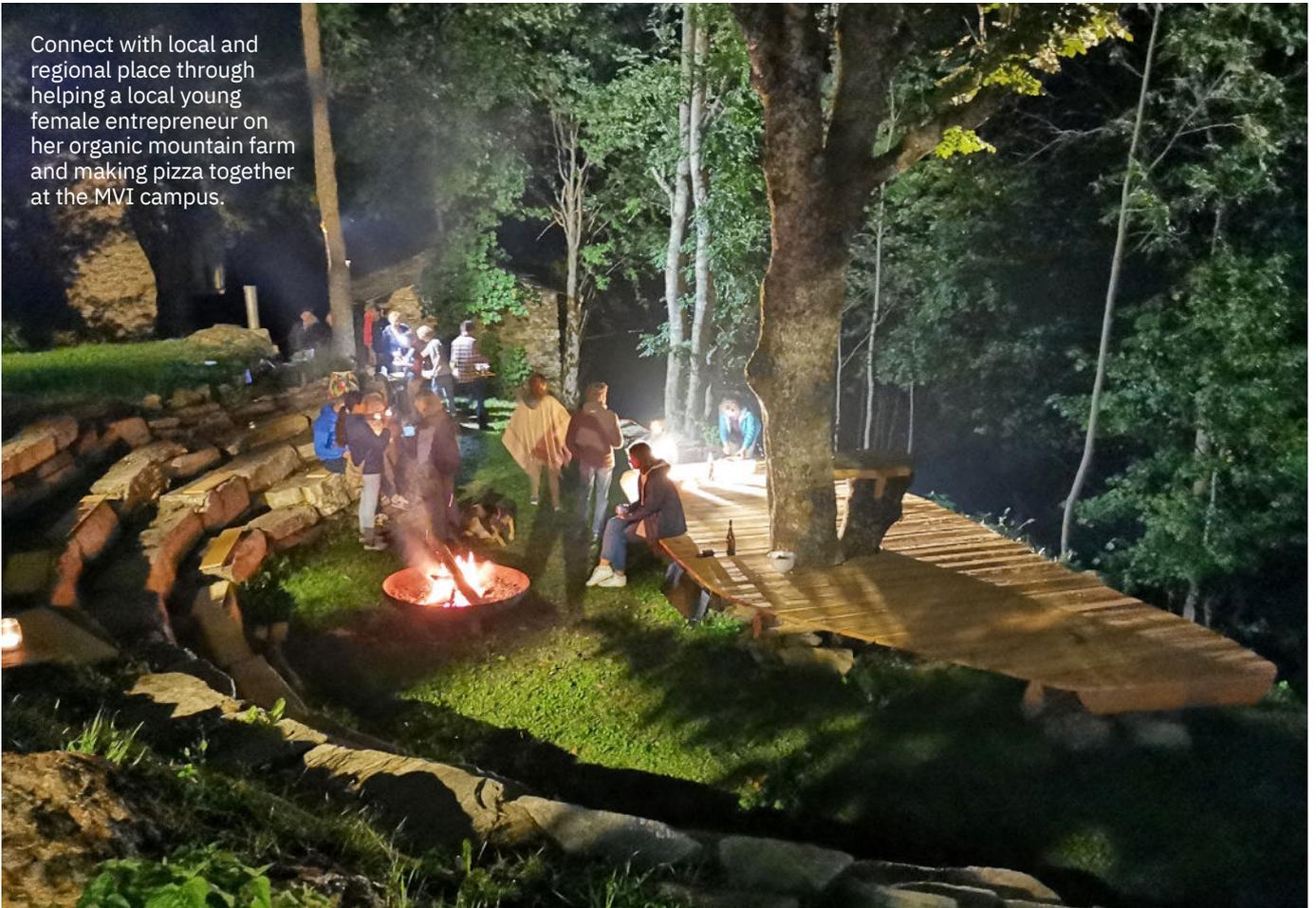
# 08 Who are DRRS participants?

As systemic as the learning content is, the target group is equally diverse.

The CAS addresses thought leaders and decision makers from a variety of fields who want to embrace uncertainty and co-design across governance scales, cultures and thought schools for a better, more resilient and regenerative future.

What can I learn with a growing DRRS alumni network from already 4500 people from 100 nations who took the MOOCs?



MOSCOW RUSSIA

PORTLAND USA

ZURICH SWITZERLAND

TOKYO JAPAN

MEKNES MOROCCO

MAZRAAT YACHOUAA LEBANON

ALEXANDRIA EGYPT

SHANGHAI CHINA

SALTILLO MEXICO

MUMBAI INDIA

HONOLULU HAWAII

HO CHI MINH CITY VIETNAM

BOGOTA COLOMBIA

NAIROBI KENIA

JOHOR BAHRU MALAYSIA

QUITO ECUADOR

CAMPINAS BRASIL

GRAND PORT MAURITIUS

240+

JOHANNESBURG SOUTH AFRICA

SANTIAGO CHILE

BUENOS AIRES ARGENTINA

0

PALMERSTON NORTH NEW ZEALAND

Even though participants' backgrounds are very different, they all share:

— Diverse academic study experiences
— Professional work experience
— Personal-professional flux and transformation
— Ethos: wanting to co-design a better future, now
— A mental-physical connection to a place and a region
— Readiness to engage and walk that extra mile
— Openness for collaboration in community

— Asking deeper questions, moving away from quick answers and one-size-fits-all solutions
— Being curious and having a QUEST (in formation)
— Wishing to extend their professional network
— Looking for a timely, new learning experience combining virtual freedom with physical in-depth engagement with place and oneself

# Voices from DRRS alumni

**Florian Utthoff**
**Berlin/Tel Aviv**

*I am part of an ambitious project to establish a creativity center in Tel Aviv that focuses on new forms of learning, collaboration, and co-creation. This "real-world laboratory" combines art, technology, and philosophy to create a fairer and more sustainable future. Achieving this vision will require a systemic, collaborative approach – and a lot of people contributing with their ideas and experiences. The ETH Zurich DRRS professional degree program is the perfect opportunity for me, providing expert knowledge, practical application mentoring for our project through the (collective) QUEST, and a vast network for exchange.*

**Nika Langus**
**Freelance Translator,**
**Interpreter and Weaver**
**Slovenia**

*What I found particularly valuable already in the MOOC series is how I was actively encouraged to work on my QUEST. This has helped me to gain perspectives and understandings of a whole set of challenges I face in my work supporting transforming mountain communities in northwestern Slovenia, in the Kranjska Gora area towards more resilience and regeneration. By following the hybridization of science, design and transformative praxis in real time, I can engage in my own place and bio-region while at the same time continuing my learning journey.*

**Benjamin Marias**
**Vice-Mayor, Co-Founder**
**of AIR coop Annecy**
**France**

*The DRRS knowledge imparted strengthens me in my endeavor to connect all strands of my actions on the different governance scales and create synergies. The upcoming CAS would support me in my QUEST as how to build a bio-regional learning center in the greater Annecy area, connecting the urban with the alpine, politics with the needs of the region, culture and nature.*

**Adam Lafferty**
**Los Angeles / Detroit, USA**

*I have spent the last 20 years working within high-growth technology companies and most recently with venture capital to design and implement solutions to complex systems. With all the market shakeups the tech industry is experiencing right now, it has become clear to me that there can be no simple business as usual anymore. My ultimate goal is to harness the power and experience of the tech industry to tackle global challenges like climate change or preservation of ecosystems. The CAS evolving out of the DRRS program is exactly what I am looking for to get an immersive experience that can then be applied to real life challenges.*

# 09 Who are instructors?

We curate a rich and diverse learning community by ETH Zurich and partnering Universities' faculty, with contributing thought leaders and experts in their fields who walk their talk.

University professors, designers, builders, politicians, mountain guides, consultants, entrepreneurs, architects, visionaries, PhD students – and yourself, as participant, in the form of learning tandems with regionally close colleagues.

This overview is a living one and evolves with time. Further contributors join us continuously as the program evolves. The full list of instructors can be found at https://regenerativesystems.ethz.ch

**Tobias Luthe**
ETH Zurich, AHO Oslo, MonViso Institute

PhD. DRRS Program Director. Professor, AHO Oslo. Co-founder, MonViso Institute. Grown Design. Mountain guide.

**Adrienne Grêt-Regamey**
ETH Zurich

PhD. Professor and Head of Institute Planning of Landscape and Urban Systems PLUS.

**Daniel Christian Wahl**
Mallorca

PhD. Bio-regional weaver. Speaker. Educator. Author of "Designing Regenerative Cultures".

**Justyna Swat**
ENSCI-Les Ateliers Paris, Tiny Labs

Architect Engineer. Design tutor and lab leader in Systemic Design. Founder of Tiny Labs.

**Alexa Jedda Firmenich**
ETH Zurich

Co-director of SEED Biodiversity indexing at Crowther Lab. Animist Investor. Founder, Lifeworlds Podcast.

**Eric L. Berlow**
Vibrant Data Labs, California

PhD. Ecologist. Network Scientist. Social Impact Data Scientist. TED Senior Fellow. Emerson Collective Climate Fellow.

**Delfina Fantini van Ditmar**
Royal College of Art London

PhD. Senior Researcher and Lecturer. Biologist. Design Research Society "Design Ethics" SIG co-founder.

**Martin Schütz**
ETH Zurich, Zurich School of Arts

Engineering Design Lecturer. Bicycle Designer & Engineer. Co-founder of Systemic Cycles.

**Nicolas Salliou**
ETH Zurich

PhD. Senior Researcher. Participatory Environmental Modeling, Serious Game Design.

**Haley Fitzpatrick**
AHO Oslo, MonViso Institute

Architect. PhD candidate in Systemic Design. Design Associate, MonViso Institute.

**Mirjam Luthe**
UC Irvine, Center for MSC, MonViso Institute

Certified trainer in Mindful Self-Compassion, Mindfulness-Based Stress Reduction, Awake in the Wild. Teacher in Council Practice and Yoga.

**Michael Stauffacher**
ETH Zurich

PhD. Professor and co-head of Transdisciplinarity Lab.

# 10 Course facts

**Requirements:** Master's degree acknowledged by ETH or equivalent educational qualifications.

**Additional application documents:** Certificate of ETH DRRS MOOC#1 Sustainability to Regeneration Written essay with graphical elements: reflect about your personal QUEST in the context of this study programme

**Language:** English C1

**Start:** September 4, 2023

**Finish:** December 15, 2023

**Duration:** 3 months (DRRS MOOC#1 needs to be taken prior to CAS start)

**Credit points:** 12 ECTS

**Study locations:** Hybrid. In general virtual from your preferred location. In-person on one design field trip to Italy. September 10-20, 2023 (10 days).

**Program fee:** 7500CHF

**Tuition fee:** 730CHF

**Application fee:** 50CHF for people with a Swiss university degree, 150CHF for people with another university degree.

**Further costs:** Travel to/from Italy/Turin for the design field trip and 50% of local expenses for food/accommodation to be covered individually. 50% of food and overnight expenses are covered by the program.

**Financing:** For a private person, the personal benefits of this program are clear – from personal development to being updated on the latest state of science to design tools and methods, to professional networks, an ETH degree and a concrete QUEST project implemented. One could not invest better in oneself, especially in times of nested crises.

For an employer, financing an employee this DRRS program is the most cost efficient and effective way to develop and integrate resilience and regeneration inhouse into the organization – leading to transformative impact from day one on. Groups and teams may apply with a group QUEST.

We support interested candidates to find financial support from their employers or other institutions. Program payments are due by October '23.

**Application window:** April 20-May 31, 2023

**Application address:** ETH Zurich School for Continuing Education. https://sce.ethz.ch

**Administrative questions on the application process:** info@sce.ethz.ch

**Responsible for the program and its content:** ETH Zurich Systemic Design Labs

**Website:** https://regenerativesystems.ethz.ch

DRRS program coordination:



Michael Grimm
Program Coordinator

Sonja Fischer
Education Specialist

**Content and community related inquiries:** drrs@ethz.ch

**Support via the DRRS virtual community:** https://design-resilient-regenerative-systems.mn.co

# 11 Visual summary



MOOC

CAS

SUSTAINABILITY SCIENCE

WORLDVIEWS

REGENERATION INDEPTH

(META) DESIGN

EDGE OF CHAOS

CRISES

CHANCES

HYBRIDIZATION

REFRAMING COMPLEXITY

HYBRID VIRTUAL + PHYSICAL

REGENERATIVE PRAXIS

WEAVER

COMPASS

REAL-WORLD LABORATORY

SYSTEMIC INNOVATION

DESIGN FIELD TRIP

VISUAL DIALOGUE

ITALIAN ALPS

CROSS-SCALE GOVERNANCE

Your
navigation guide

## QUEST

Transformative
impact from day one
in your study region

NATURE FINANCE

DESIGN AS NATURE

MONVISO INSTITUTE

COMMUNITY REGENERATION

MIND + MOVEMENT

SERIOUS GAME

ALPINE-URBAN

SYSTEMIC CYCLES

PROFESSIONAL NETWORK

FLOW EXPERIENCES IN NATURE

REGENERATIVE LEADERSHIP

PERSONAL RESILIENCE

ETH ZURICH CAS CERTIFICATE

EMBODIMENT

COUNTING TOWARDS
ETH MASTER DEGREE

References:

P. 6, Licenced under CC BY-NC-ND 3.0 Credit: "Azote for Stockholm Resilience Centre, based on analysis in Wang-Erlandsson et al 2022".

P. 6, Luthe T and R Wyss. 2015. The Capacity of Social-Ecological Systems for Planning Resilience: Introducing Adaptive Waves. Sustainability Science 10(4):673-685.

P. 7, Luthe T, Fitzpatrick H and D Wahl. 2022. The spiral of autopoietic complexity: Designing resilient regenerative systems across governance scales. Working paper.

P. 8, Adapted from: Meadows D, Thinking in Systems. 2008. Senge P. 1990. The Fifth Discipline. The Art & Practice of The Learning Organization.

P. 13, Luthe T. 2019. Hemp as incubator of a circular economy. Hanf Magazin 06-2019.

Partners:

ETH zürich | SYSTEMIC DESIGN LABS    MonViso INSTITUTE SERRE LAMBICE    AHO Arkitektur- og designhøgskolen i Oslo The Oslo School of Architecture and Design    POLITECNICO DI TORINO