



# BRIDGES

## A HUMANITIES-LED UNESCO COALITION FOR SUSTAINABILITY

Mobilizing Societally Co-produced Sustainability  
Science for Global Impact





# **BRIDGES: A HUMANITIES-LED UNESCO COALITION FOR SUSTAINABILITY**

**Mobilizing Societally Co-produced  
Sustainability Science for Global Impact**

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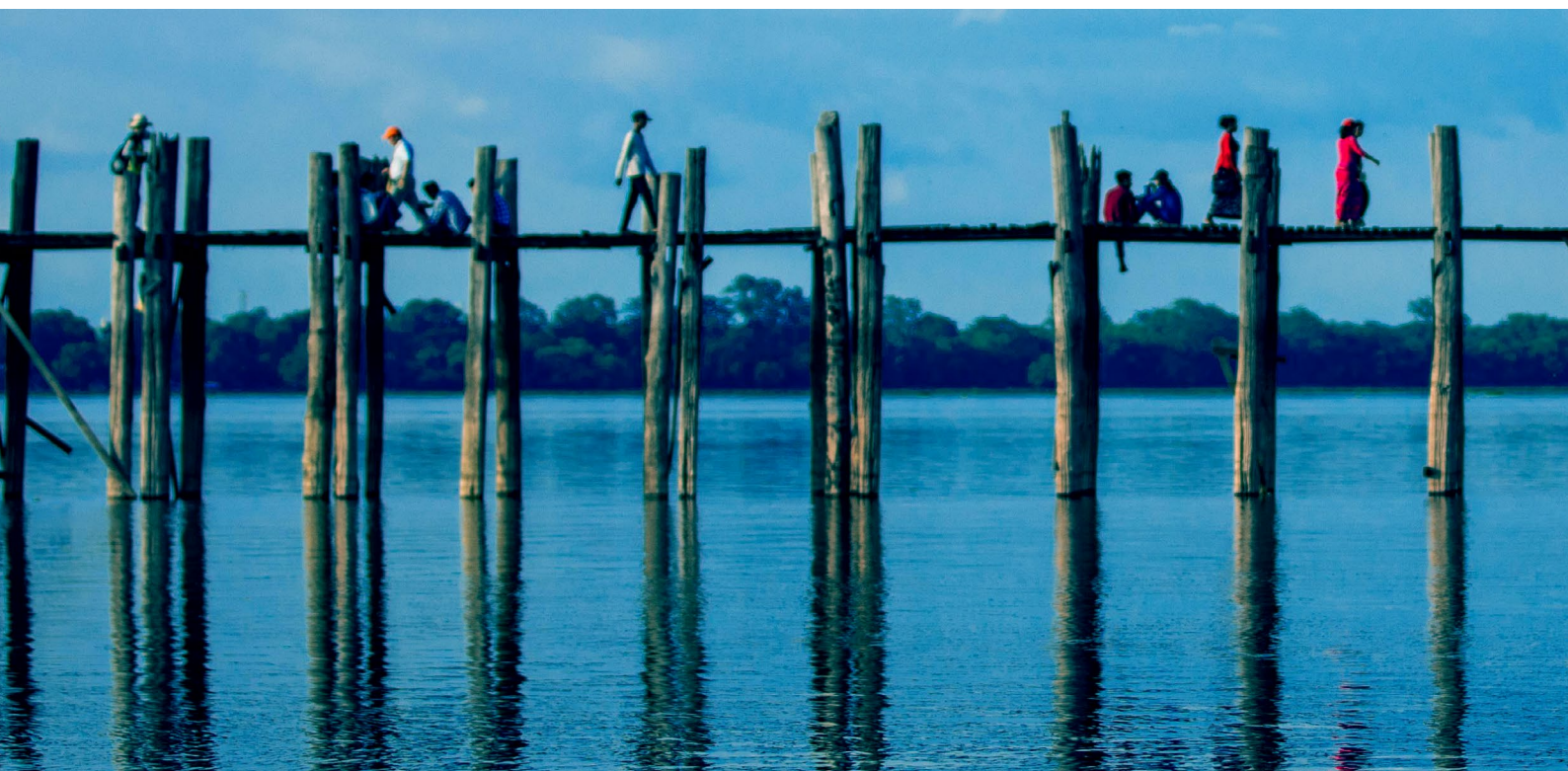




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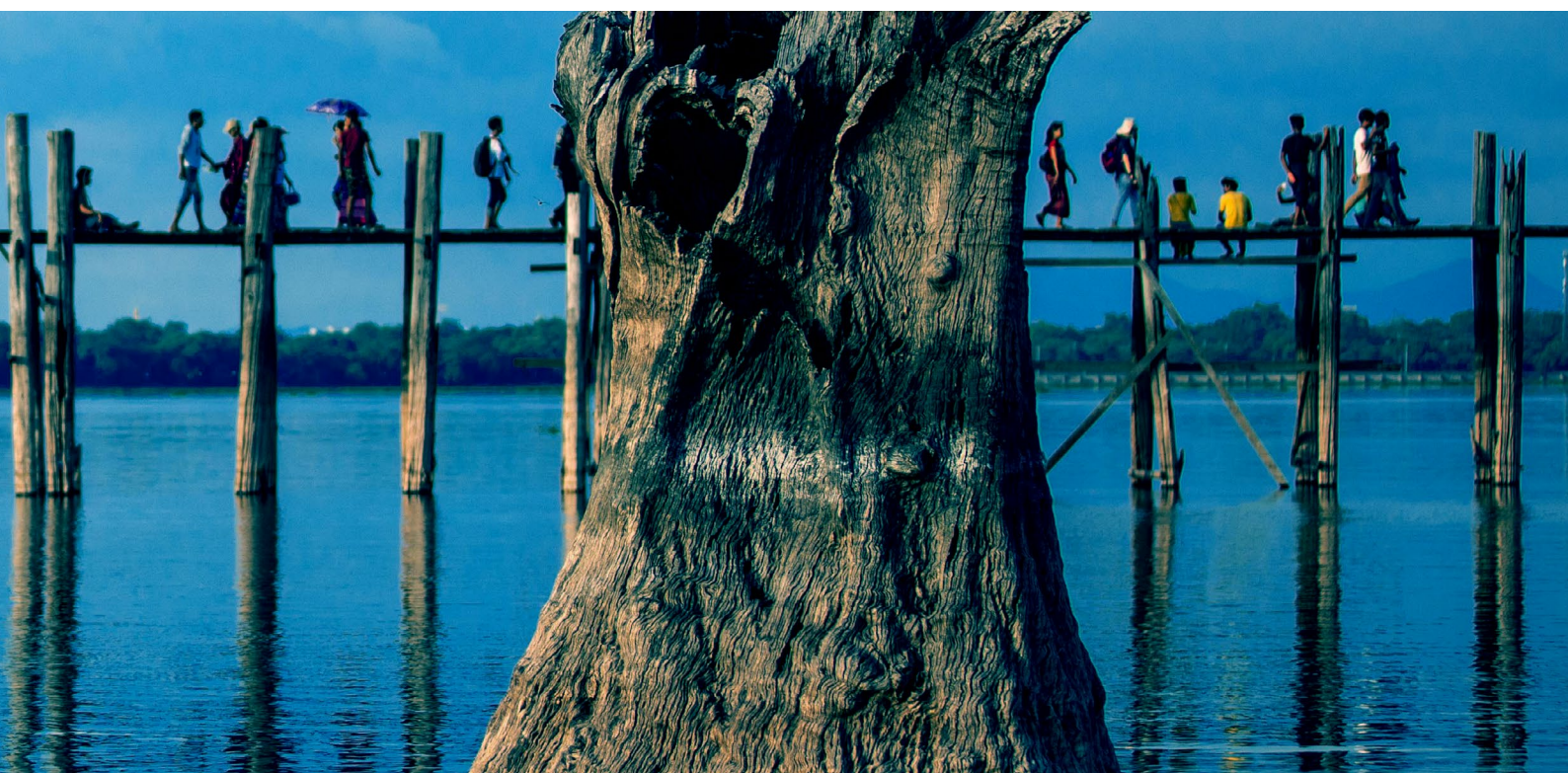
# TOWARD A SIGNATURE BRIDGES PROJECT

BRIDGES is a humanities-driven sustainability science coalition established in UNESCO's Management of Social Transformations (MOST) programme. Composed currently of dozens of international institutes, organizations, programs and formal networks, the coalition works closely with the Intergovernmental Council and Scientific Advisory Committee of MOST, UNESCO's Social and Human Sciences sector and the other founding partners, the International Council for Philosophy and Human Sciences (CIPSH) and the Humanities for the Environment global observatory network.

This brochure offers a preliminary indicative overview of humanities-led sustainability science projects from different regions around the world that seek actively to address the realities of vulnerable communities and regional territories impacted by social and environmental pressures increasingly associated with climate change, biodiversity loss and species extinction, and the pollution and warming of marine, terrestrial and atmospheric systems.

The UNESCO-MOST BRIDGES Coalition is now approaching potential donors to support a three-year project intended to enable a more comprehensive mapping of humanities-led, community-driven sustainability science, education and action. The ambition is to produce two reports in that period focused on (1) transdisciplinary knowledge production and (2) application of knowledge from transdisciplinary humanities-led sustainability research in a variety of educational and learning contexts that can be adapted and scaled for greater impact in meeting the challenges of the UN 2030 Agenda.

The first BRIDGES report is envisaged as a joint UNESCO-CIPSH-ISC publication, and the second BRIDGES report is envisaged as a joint report with UNESCO to the Club of Rome. Each will include significant analysis and discussion of how humanities-led sustainability science can be made more accessible and useful to policymakers and societies at a wide range of scales, from the local to the international and intergovernmental.









# SCIENCE FOR A BETTER COMMON DESTINY

As humanity grapples with myriad global challenges, the need for a multifaceted approach to address human needs has never been more apparent. For this reason, UNESCO became a proud co-founder and partner of the BRIDGES sustainability science coalition. BRIDGES is a research-based coalition that brings humanities, social sciences, and indigenous knowledge together in a multidisciplinary fashion to look at how to advance behavioral change for the crucial climate transition ahead of us. The vision of the coalition aligns with UNESCO's Management of Social Transformation (MOST) programme, which views multi-trans-disciplinarity as essential in addressing the complexity of our societies.

BRIDGES is leading efforts to prepare for the transformations required to mitigate anthropogenic climate change and biodiversity loss. Within UNESCO's MOST programme, BRIDGES helps Member States strengthen their capacities in applying social and human scientific knowledge to devise effective policy solutions and advance inclusive development agendas. The Programme supports Member States in meeting their commitments to relevant intergovernmental agreements such as the SDGs 13, 16, 17, the Paris Agreement, and the Convention on Biological Diversity.

Traditional societal perceptions have often led to the unnecessary separation of various fields of research, including the humanities, from the broader spectrum of knowledge. Yet confronting the challenges of climate change comprehensively requires more than the hard sciences alone. Climate change and sustainability involve an interlinked set of complex issues, with dimensions of health, poverty, displacement, conflict, gender, inequality, and inequities — as well as ethics and social justice. The humanities provide us with renewed (re)conceptualizations of challenges. They can give greater clarity to human-environmental relationships: from resource

governance to disaster risk response; responding to questions on environmental determinants of health and examining the overlapping geographies of poverty, race, and pollution risk; or addressing the ethics of environmental protection.

The expertise brought to the fore by the BRIDGES coalition is an indispensable resource to policymakers. BRIDGES works to advance knowledge of social and cultural systems, facilitating intergovernmental efforts to address the human dimensions of global environmental change. In many cases, the most vulnerable communities on the front lines of climate change have tremendous repositories of knowledge and practical understanding to share with policymakers as a valuable complement to mainstream science. BRIDGES is establishing concrete procedures for bottom-up and communities-based approaches to sustainability.

As part of UNESCO's Social and Human Sciences Sector mandate to work with Member States to support more inclusive, resilient, and just societies, the BRIDGES coalition offers researchers and policy-makers an innovative framework for coming together and addressing global challenges comprehensively. By utilizing all available research at our disposal, we are better placed to create a more sustainable world for present and future generations.



## Gabriela Ramos

*Assistant Director-General for Social and Human Sciences, UNESCO*



# A CONVERGENT ROADMAP OF HUMAN EXPERIENCES AND KNOWLEDGE

A dramatic misconception of contemporary society is the segregation of the Humanities from the other Sciences. As a result, the very real needs and concerns of people worldwide are not being taken into account in the development of academically informed addresses to contemporaneous problems. Consequently, this intellectual dichotomy impedes the development of effective strategies to combat current environmental concerns.

In the face of today's global challenges, and in spite of the multiple ways of being human, we need to recognise and accept our essential unity as a species. Moreover, ontologies that tend to separate people from each other and the wider world overlook how humanity is part of, and indeed dependent upon, an extensive and intricate web of relationships with other living beings and the Earth at large.

CIPSH helped conceive BRIDGES at its initial meeting in Mação, Portugal, in 2019. The BRIDGES programme is designed to address socio-environmental problems by drawing upon the scope and methods of the Humanities and encouraging different disciplines, knowledge systems, cultural approaches, interests and perceptions to co-create transdisciplinary projects and community initiatives. The disciplines of the Humanities – such as philology and philosophy, archaeology, anthropology and history – all contribute important perspectives and understandings of the values, ethics and the moral components of humanity's problems past and present. Frequently, technological innovations and solutions to environmental issues tend not to engage with these; thus, it is hoped that embedding Humanities-driven research within sustainability science will help avoid the trap of simply solving one immediate problem by generating new ones. While academics might be considered the experts

who generate and hold knowledge, BRIDGES also recognises the importance of listening to and learning from other ways of understanding the world. A key component of this innovative programme therefore is incorporating the experiences and expertise of diverse societal partners, indigenous peoples and youth/intergenerational knowledge.

BRIDGES aims to co-construct a convergent roadmap based on human experiences and millennia of knowledge systems. Rather than shaping a single image of the future, it recognises that solutions will be contextual and localised and seeks to build a flexible path that acknowledges community-based transformative practices. It is not about emergency and anguish, but about trust, reasoning and knowledge-informed foresight.

This publication evidences how the unity of humans is expressed through a clear convergence of their transdisciplinary actions. It points to the need for a more comprehensive mapping and mobilization of humanities-led sustainability science, learning and action for global impact that the BRIDGES Coalition will now undertake in the coming years.



**Luiz Oosterbeek**

*President of CIPSH*







# BRIDGES TO RESILIENT, JUST AND FLOURISHING SOCIETIES

In mitigation, adaptation and remedial efforts, the international community are not keeping pace with the global scope and intensity of socio-environmental challenges. This is true despite best intentions and meaningful progress working to deliver the UN's 17 Sustainable Development Goals (SDGs), and to meet national and international targets defined by the Paris Agreement on Climate Change, the Convention on Biological Diversity and other landmark agreements and treaties. This state of affairs naturally raises serious concerns about the ability of the world to achieve necessary milestones for 2030, 2040 and 2050 — progress on which the well-being of future generations and planetary health depend.

At the beginning of the present decade, the founding partners of BRIDGES resolved to co-design an inclusive international coalition that could help to complete and strengthen the sustainability science domain as it had developed over the previous two decades, to a large extent without significant involvement of the humanities, the arts, social sciences, educational sciences and many local and indigenous communities. Consequently, BRIDGES was established to promote a general conceptual framework for sustainability rooted in transdisciplinarity, to support sustainable and inclusive development capable of realizing profound transformations.

Such goals cannot be achieved alone by technical solutions. Lasting change requires solutions that value and incorporate human contextual differences. This is part of what in BRIDGES is defined as 'humanities-driven sustainability science' (HdSuS), though it goes beyond a narrower traditional framing of the humanities in most academic contexts.

BRIDGES recognizes the need to open up channels of societal knowledge and siloed repositories of wisdom and to bridge these resources

through an investment in new structures and processes—and especially in people—that can together have a force-multiplying impact in our efforts to achieve resilient, just and flourishing societies and a sustainable, healthy planet. By definition, working in a transdisciplinary manner requires working co-productively from the outset—beginning with how we address our challenges and who is part of that conversation.

BRIDGES asks what new knowledge can be born from diverse partners working together in innovative ways not often seen before. This booklet does not answer that question, except suggestively and incompletely. It is intended, rather, as an illustrative first step in a process to comprehensively map community-driven, humanities-led sustainability science that lives up to the refined sustainability science paradigm envisaged in UNESCO's Guidelines for Sustainability Science in Research and Education. That policy guidance document anticipated a more central role for the humanities, arts, social sciences, educational sciences and local and indigenous communities in the production of knowledge.

A signature project mapping formidable human capacities of wisdom and action is the first critical step toward applying these untapped knowledge resources at significant scales. Appropriate processes of societal learning, policy-formulation and action can then be co-designed inclusively, helping communities around the world rise to the challenges of the 21st century and flourish.



**Steven Hartman**

Executive Director, BRIDGES

# THE HISTORY, PRINCIPLES AND OBJECTIVES OF THE UNESCO BRIDGES COALITION



The establishment of BRIDGES as an international coalition in UNESCO's Management of Social Transformations programme was undertaken at the outset of the UN Decade to Deliver the Sustainable Development Goals as a means to complete and thereby strengthen the sustainability science domain as it has developed over the previous two decades.

The objective was to foster a renewed, integrated approach to sustainability science, education and action that builds from the humanities, encompassing the social and natural sciences, the arts and educational sciences, as well as vital knowledge domains beyond the academic, research and innovation sectors, as represented, for example, by diverse Indigenous and local communities.

The BRIDGES coalition was established as an indirect outcome of the project Broadening the Application of the Sustainability Science Approach, a two-year project initiated by UNESCO in October 2015 with support from the Japanese Ministry of Education, Culture, Sports, Science and Technology (Japan/MEXT). This project drew upon sustainability experts from around the world to develop policy guidelines intended to help UNESCO Member States harness the potential of sustainability science in their efforts

to support and achieve the Sustainable Development Goals (SDGs) and to meet their commitments and obligations under the Paris Agreement.

The BRIDGES initiative builds upon the refined sustainability science paradigm inaugurated in 2017 with the launch of UNESCO's Guidelines for Sustainability Science in Research and Education, with reference to the World Humanities Conference outcome document A New Humanities Agenda for the 21st Century (2017). The UNESCO Guidelines document proposed a refined approach to sustainability science, emphasizing inclusive transdisciplinary research, education and societal action (among other modalities) to enable more effective integrated responses to global challenges. The importance of including the humanities and social sciences, as well as indigenous and traditional local knowledge, without reducing these knowledge domains to instrumental roles, was emphasized in this report.

BRIDGES seeks to operationalize UNESCO's Guidelines on Sustainability Science by promoting and advocating for innovative structures and processes of co-design and co-construction that place a premium on the values of diversity, inclusiveness, and critical reasoning. The ambition is not only to bridge top-down and grass-roots approaches to knowledge production and the science-policy interface but also to enable convergent, force-multiplying capacities to be achieved across previously siloed knowledge domains and action communities at numerous scales, from the local and national to the regional and global.

The programmatic and procedural foundations for BRIDGES as an international coalition for action in sustainability science were explored



in four international visioning workshops organized between 2019 and 2021: in the municipality of Mação in Central Portugal; at UNESCO headquarters in Paris; in Scandinavia's oldest continuously inhabited town, Sigtuna, Sweden; and in the heart of Cappadocia, Turkey. These establishment workshops were organized by the coalition's founding partners: the United Nations Educational Scientific and Cultural Organization (UNESCO), the International Council for Philosophy and Human Sciences (CIPSH), and the Humanities for the Environment (HfE) Global Observatory Network, as advised by UNESCO's Management of Social Transformation (MOST) Programme.

More than 40 partner organizations participated in the visioning discussions throughout the process of establishing the BRIDGES Coalition. This emerging community of member organizations committed to the following principles:

1. **The BRIDGES Coalition is humanities-centered but not limited to the humanities. We value contextualized and diverse approaches to sustainability and we acknowledge that persistent challenges are often complex, yielding sometimes contradictory responses. We encourage robust debate in efforts to meet these challenges.**
2. **The BRIDGES partners understand the Earth not solely as a planetary system, nor as a reservoir of resources, but as a web of meanings and interactions that is inherently multilayered and pluralistic.**
3. **The BRIDGES Coalition is committed to a critical understanding of sustainability that emphasizes the diversity of its subjects, objects and timelines.**
4. **BRIDGES will work to establish a world of new relationships, based on convergent understandings and co-design, among the co-inhabitants of the Earth.**
5. **The BRIDGES partners are committed to an ethical approach to resource mobilization and use.**



# THESE PRINCIPLES BUILD UPON AND COMPLEMENT 6 KEY PRINCIPLES IDENTIFIED IN UNESCO'S GUIDELINES FOR SUSTAINABILITY SCIENCE IN RESEARCH AND EDUCATION

## 1. INTERDEPENDENCY AND COMPLEXITY

Sustainability Science responds specifically “to the interdependent, complex and mutually reinforcing character of ongoing natural, social and cultural challenges occurring at both global and local scales. Sustainable development, as expressed in the United Nations Agenda 2030, is exactly about the interplay of such challenges”.

## 2. KNOWLEDGE CO-PRODUCTION

Sustainability Science aims to generate, disseminate, mobilize and implement “knowledge necessary to define and achieve sustainability as a response to such challenges in the concrete contexts of different geographical and temporal scales. Such knowledge includes new technologies and innovative processes”.

## 3. INTEGRATION AND FORESIGHT

“Sustainability Science focuses on solving problems, understanding dilemmas and addressing conflicts of goals and interests, with a view to move towards more integrated and coherent policy agendas, policy options and foresight scenarios that take into account both short-term and long-term needs”.

## 4. COLLABORATION & NETWORKING

“Sustainability Science is crosscutting science by nature, having as a major goal to seek complementary cooperation between natural and social sciences, the humanities, the arts and, in particular, to ensure the participation of diverse non-academic stakeholders, through a collaborative process of co-design, co-production and co-management”.

## 5. FREEDOM & RESPONSIBILITY

“Sustainability Science is based on both academic freedom and academic responsibility towards societal needs”.

## 6. EDUCATION FOR COMPLEX ACTION

“Sustainability Science requires important new capacities of individual scientists for integrated critical analysis and foresight; the ability to cope with systems thinking, changing environments, risks and insecurity; and the capacity to recognize and address diverse values as well as conflicts of goals and interests, to empathize and work responsibly and collectively in diverse partnerships. Such capacities need to be strengthened through all forms of education”.

The BRIDGES establishment process highlighted additional strategic priorities, including identification and promotion of exemplary trans-sectoral and transdisciplinary projects connecting humanities and social sciences knowledge advancements with those of the natural sciences, the arts and applied scientific fields. Effective co-production between this broader and more inclusive configuration of academic knowledge communities and non-academic actors / stakeholders from society is a signature priority of the coalition, with an emphasis on identifying and amplifying co-designed and co-developed case studies (and the approaches they adopt), focused on achieving sustainable environments and societies. The coalition has committed to a leading role internationally identifying, promoting and disseminating such case studies, as well as replicable model curricula and territories-based best-practices, consistent with the goals and principles of robust sustainability science.



BRIDGES was endorsed by the Intergovernmental Council of the Management of Social Transformations Programme on March 31, 2021, during MOST's 15th Ordinary Session. The Coalition held its first general assembly on May 24-25, 2021, with the participation of 45 member organizations and strategic partners. The number of member institutions in this global coalition is anticipated to expand significantly during the inception phase of BRIDGES (2022-2024). BRIDGES Hubs and its international secretariat provide the coalition with its implementation capacity.

There are currently five BRIDGES Hubs as of August 2023, and this number is anticipated to more than double in the coming year. A major ambition is to establish hubs in regions where there are none as yet, such as in Asia-Pacific, Oceania, Latin America, the Circumpolar North, Northern Africa and the Middle East.

Current Hubs include the Southern African Hub at University of Pretoria; the Flagship Hub at Arizona State University's Julie Ann Wrigley Global Futures Laboratory; the Knowledge and Action Hub of the Club of Rome; a Thematic Hub devoted to Understanding Past Socio-Ecological Resilience jointly organized by CUNY's Human Ecodynamics Research Center and Princeton University's Climate Change and History Research Initiative; and the UK Hub at University of Wales Trinity Saint David.

As the first humanities-led international sustainability science program within UNESCO and the wider family of UN agencies, the BRIDGES Coalition was conceived in this exploratory process as both innovative and critically necessary. This booklet provides a first internal survey of projects selected from the current coalition membership and their networks. These projects are meant to illustrate the wealth of humanities-led, community co-produced initiatives currently taking place in the world. These endeavors deserve to be better known, and therefore systematically mapped,

so that the international community can learn and adapt from the toolbox of approaches they demonstrate.

The UNESCO BRIDGES Coalition is now approaching potential donors to support a three-year project intended to enable a more comprehensive mapping of humanities-led, community-driven sustainability science, education and action. The ambition is to produce two reports in that period focused on (1) transdisciplinary knowledge production and (2) application of knowledge from transdisciplinary humanities-led sustainability research in a variety of educational and learning contexts that can be adapted and scaled for greater impact in meeting the challenges of the UN 2030 Agenda. The first BRIDGES report is envisaged as a joint UNESCO-CIPSH-ISC publication, and the second BRIDGES report is envisaged as a joint report with UNESCO to the Club of Rome. Each will include significant analysis and discussion of how humanities-led sustainability science can be made more accessible and useful to policymakers and societies at a wide range of scales, from the local to the international and intergovernmental.

As the nations of the world look to the end of the present decade, and then to the further challenges beyond it, all hands are required in the greater effort to steward a world in transition first to a net-zero and then to a post-carbon economy that enable the Earth's inhabitants to move beyond the current states of emergency in the climate system, biodiversity, oceans and forests, threatened human and ecological communities. BRIDGES' first signature project seeks to show by example how long-neglected communities of knowledge, learning and action in the science-policy interface can become sources of innovation, inspiration and strength in the collective effort to mitigate these global crises and embark on new pathways of planetary flourishing and human wellbeing.







# PROJECTS

## GEOGRAPHICAL KEY

Western Europe and North America

Central and Eastern Europe

Latin America and the Caribbean

Asia and the Pacific

Africa

Arab States





Swakopmund, Namibia. Copyright R. Boschman

## URANIUM CITIES: EXTRACTIVE LEGACIES IN FIVE COMMUNITIES ON FOUR CONTINENTS

**Overview:** This field-based study of five uranium communities in disparate places around the world uncovers both local and international narrative strands concerning dispossession, abandonment, pollution, remediation, and erasure in the context of uranium ore as a thing with a history. Uranium's impact on Indigenous peoples is significant.

**Context:** The effects of uranium extraction on human communities are ecologically, politically, and historically important, especially as nuclear energy receives renewed focus. Jachymov, Czechia is home to the oldest uranium mine in Europe and the site of Jachymov Hell, a series of uranium work camps run by the Soviets. Radium Hill, Australia, was one of the very first uranium company towns; later bulldozed, its history is archived in nearby Broken Hill. In the U.S. Jeffrey City, Wyoming was the original Home On The Range. Renamed after a uranium prospector, it became a company town of about 4,000 until the market collapse of 1982; today it holds about 50 persons. Also

in 1982, Uranium City, Saskatchewan was abandoned by its population of 5,000; it too contains a remnant population of about 50. Finally, Swakopmund, Namibia, located along the Skeleton Coast, is linked to the largest open-pit uranium mine in the world, the Rossing Mine, which has been in operation since 1976.

**Method:** Funded by the Social Sciences and Humanities Research Council of Canada (SSHRC), scholars have made field visits to these five places employing photographic and drone surveys, on-site interviews, and archival searches.

**Benefit:** Critical knowledge regarding five communities with legacies of uranium extraction (1898 - 2023) emerges through this project. Learning more than we currently know about how uranium extraction has affected human communities in different geographical locations globally enhances public and private deliberations



## MÚNEKAÑ MASHA (TRANS. LET IT BE (RE)BORN): AN INDIGENOUS- LED INITIATIVE THAT AIMS TO REVITALIZE COLOMBIAN FORESTS AND TRANSFORM GLOBAL CONSERVATION PRACTICES.

**Overview:** Designed in collaboration by a group of indigenous elders, practitioners and academics, Múnekañ Masha sees Kogi teachers training European scholars in their ancient conservation methods for the first time in history.

**Context:** The Kogi describe the landscape as a fabric connected by fundamental forces that must be maintained for planetary health. Despite labouring to maintain territory health, the Kogi increasingly struggle to work effectively because of local industrial developments. They recognise a disregard for indigenous strategies made possible by the dominance of certain methods and knowledge systems over others. As a result of these factors, the Kogi created this initiative to find ways to save the environment in the Sierra and maybe further afield.

**Method:** Anthropologists and environmental scientists from University of Wales Trinity Saint David, Zurich University and Colombia will be taught

Kogi methods over 3 years on a parcel of degraded territory purchased for this purpose. By simultaneously monitoring environmental changes and facilitating periods of dialogue between local practitioners and conventional experts, the team will co-evaluate methods and seek synergies to incorporate indigenous approaches into conventional land management techniques.

**Benefit:** The project will enable different approaches to work together to produce activity models for learners of all ages that allow Kogi methods to be included in curricula and replicated in other locations.

This project develops a long-standing relationship between a UK charity (the Tairona Heritage Trust) and the Kogi people. It advances the commitments that were established over 40 years ago by returning the ancestral lands of the Sierra Nevada in Colombia to the Kogi people so that they can restore it to its once flourishing state.





Credit: Alex Schein

## FUTURES BEYOND REFINING

**Overview:** Futures Beyond Refining (FBR) is an open-ended campus-community collaboration in Philadelphia (USA) that began in the immediate aftermath of a catastrophic explosion of the city's petroleum refinery.

**Context:** Refinery neighbors, often a city's most vulnerable, contend with not knowing what to do when disasters strike, or when nuisance flooding becomes chronic. The paucity of data about the refinery's 160-year history of environmental contamination has shocked many, despite general awareness of how dangerous living with a refinery is. As community leader and FBR tour guide, Tammy Reeves, asked, "If it's not hazardous, why are you wearing hazmat suits?"

**Method:** FBR has developed in partnership between a non-profit community organization and faculty and students in the environmental humanities. Participants ideated shared goals and committed to their outcome. Jointly, we pledged to document and amplify locals' stories, including those questions about the radical uncertainties faced

by communities across the globe who live amidst fossil fuel infrastructure. What do you do in the case of an explosion? What can you do when so many friends and family members become sick? To date, this partnership has shared oral histories in an online, open-access archive; offered in-person tours of neighborhoods along the refinery fenceline for school children, policy makers, and journalists and provided in-school workshops on the past, present, and future of the former refinery site and its ecology. FBR has connected neighbors with health experts, lifted up neighbors' stories in formal policy arenas and asked policymakers to legislate the creation of environmental data that provides the evidence needed to respond to the risks the fossil fuel industry has caused, locally and globally. In addition, it has offered presentations to academic and wider audiences, published documentaries and journalistic and scholarly articles.

**Benefits:** Together we are working for a future where we live beyond the shadows of fossil fuel refining.



Credit: Dan Smyer Yue

## STORYING HIMALAYAN MULTISPECIES CLIMES: INDIGENOUS KNOWLEDGE AND GEOPOLITICS OF CLIMATE CHANGE IN HIGHLAND ASIA

**Overview:** Supported by the International Centre for Integrated Mountain Development (ICIMOD) and organized by the Himalayan University Consortium's Thematic Working Group on Himalayan Environmental Humanities, Storying Himalayan Multispecies Climes, initiates 'clime studies', developing terrestrial and affective approaches to climate change based on diverse lived experiences and traditional ecological knowledges in the Himalayan region. Co-led by U of Cologne, the project members come from Bhutan, China, India, Nepal, Australia, Germany and the United Kingdom.

**Context:** As a global biodiversity hotspot, the Himalayan region hosts numerous indigenous stories and knowledges that are invaluable to the current global endeavours to advance environmental ethics in the Anthropocene. However, Himalayan traditional ecological knowledges remain understudied and underrepresented in both academic and policy worlds. Given the weather-, season-, place- and culture-based experiences of climate change in the region, the project's proposed clime studies feature and translate indigenous experiences and

knowledges into an interdisciplinary language accessible to local communities and the global public.

**Method:** The research method consists of culturally and climatically contextualized case studies employing a shared interdisciplinary approach that integrates anthropological, ecological, historical, and political perspectives. Geared toward recounting the intertwined stories of the earth, humans, and nonhumans, this approach reveals the mutual embodiment of climate, place, and life communities.

**Benefits:** Premised on ICIMOD's commitment to its intergovernmental and scientific alliance for taking climate mitigation action to keep global warming to 1.5°C by 2100 and to achieve the UN SDGs in the Himalayan region, the project will benefit local communities with solution-oriented research outcomes centred on reducing environmental vulnerability and livelihood fragility, strengthening community adaptive resilience, and diversifying sustainable lifeways traditionally and scientifically proven to be successful.





## WATER – ENERGY – FOOD (WEF) MODEL

**Overview:** The project combines three S's (Sun, Sand and Salty Water) to produce food in a customized sustainable manner in an arid country where there is more saline than fresh water. This applied research into the areas of water desalination, brine management, integrated agriculture-aquaculture and utilizing renewable energy is achieved in collaboration with concerned stakeholders including local farmers and the private sector. The aim is to cover the sustainability gap between theory and practice with a holistic understanding of the challenges and opportunities in achieving sustainable development across different disciplines.

**Context:** Egypt faces extreme water scarcity and 80% of the total consumption is directed to irrigation. Since 2013, activities that raise awareness about eradicating water scarcity and achieve food security using the WEF model have been delivered locally. sustainable development.

**Method:** Powered by a solar PV system, water is desalinated combining different membrane desalination technologies. The desalinated water is then

supplied to a recirculating aquaculture system (RAS). The RAS is then connected to the hydroponics where it is able to supply fertilized water to grow high-value crops. The integrated WEF model conserves water usage compared to traditional agriculture and aquaculture techniques and intensifies agri-aquaculture production. The Centre provides experiential hands-on project-based capacity building using the WEF model concepts to empower stakeholders through training programmes, a master's degree and a professional diploma in

**Benefit:** The WEF Model creates integrated sustainable WEF cost-effective solutions that can be adopted by local farmers and agri-businesses, as well as hands-on project-based capacity-building programs. The capacity building beneficiaries include Faculty of Agriculture, science and engineering graduates, employees/entrepreneurs in the water/agricultural field, and professionals interested in the field to use modern sustainable agricultural techniques. The WEF model trainees come from all over Egypt.



## ALTERNATIVE TERRITORIES AND CREATIVE BIOGRAPHIES: ENVISIONING ANOTHER ETHIC FOR COHABITATION WITH NATURE

**Overview:** Territorios Alternativos is a transdisciplinary network that brings researchers together with local communities and socio-environmental movements. It seeks to enhance understandings and connections between social and natural spheres, integrating transdisciplinary approaches from the social sciences, the humanities and the natural sciences, as well as vernacular worldviews. The project actively opens up conversations between knowledge communities to encourage a better understanding and convivial coexistence between humans and more-than-human nature.

**Context:** Based in Chile, the projects Biogeoart and Climatic Pluriverses are working with communities living in the context of biosphere reserves and severely affected by climate change. It explores other worldviews and epistemologies, to promote local and global actions in the context of climate change.

**Methods:** This transdisciplinary project works with native peoples and communities facing territorial and socio-environmental conflicts that affect

their traditional ways of life. It combines several methodologies from the Humanities and Social Sciences, including Creative Geographies and Geo Humanities to generate geo-narrative devices about other ways of being and being-with nature. They also employ Decolonial Geographies and Participatory Action Research.

**Benefits:** The aim is to contribute to the development of timely, situated and creative responses to climate change, promoting knowledge and practices that develop alternative territorial planning in the context of contemporary socio-ecological crisis. [www.territoriosalternativos.cl](http://www.territoriosalternativos.cl) [www.biogeolab.cl](http://www.biogeolab.cl)





## THE “HUMAN ORIGINS HERITAGE” ACADEMIC PARTICIPATORY SCHOOL: A “CONCENTRIC PARTICIPATORY CIRCLES” APPROACH

**Overview:** The project uses ‘participatory circles’ to draw connections between local and academic spheres. It is concerned with a major chapter of humanity’s history: when the earliest people settled in Southeast Asia 1.5 million years ago. It uses a local interest in fossils from the Sangrian Dome World Heritage site in central Java, Indonesia to develop existing commitments towards understanding local heritage and its relevance to sustainable development.

**Context:** The area is heavily populated and an interest in fossils and artefacts significantly predated the arrival of scientists at the beginning of the 20th century. Today, despite some local groups foster a sense of protection for prehistoric heritage, they also encounter difficulties when communicating with authorities in charge of the site’s management. In addition, locals are reticent in their involvement as a result of the strict regulations regarding heritage imposed by the authorities. (For

example, the freezing of potential agricultural lands owing to the presence of fossils).

**Method:** The project is grounding in a previous long-term collaborative efforts developed during excavation campaigns. The project connects smaller groups of students from various disciplines and nationalities with diverse members of the communities, in order to co-study topics related to local heritage. Involving students in this way helps facilitate a connection between local and academic spheres result in ‘participatory circles’ where locals both learn and teach heritage conservation and protection.

**Benefits:** By working together the community has rekindled a growing interest in local heritage, protecting the landscape and understanding how development must be sustainable.





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## SUSTAIN- ABILITY AND THE HUMANITIES, UNIVERSITY OF TOKYO, JAPAN

**Overview:** In 2009 “Sustainability and the Humanities,” was launched as a Presidential Discretionary Fund Project of the University of Tokyo to rethink the concept of sustainability critically and unmask any ideological dimensions to acting unsustainably. It ended in 2021 but our collaborations with local communities continue to unearth local knowledge about sustainability.

**Context:** Historical examination of past responses to disasters and major risks has led us to rethink the attitudes of our society and scholars towards sustainability. In 2011, Japan experienced the Great East Japan Earthquake and the Fukushima Daiichi Nuclear Power Plant accident. Although these are not global environmental issues, the risks of disasters and radioactive materials are. It has become important to consider how the humanities and social sciences can respond to risks that shake society and have a profound impact on the natural environment. It also became important to understand what should be sustained, whether there are differences in

priorities between environment, economy, restoring people’s lives, and what political and economic interests lie behind the differences.

**Method:** Among the activities completed were surveys of the local government, an eco-village, a renewable energy NPO, and the local FM in Kawauchi Village and Iwaki City near the Fukushima Daiichi Nuclear Power Plant after its accident. In addition, we are investigating the negative history and dark tourism related to gold mines and current environmental protection activities on Sado Island. At present, we are excavating the modern history of the Ashio Copper Mine and a region of Hokkaido that was settled by refugees from the Ashio Copper Mine poisoning incident.

**Benefit:** Our research activities not time-limited projects but are developing into a permanent research and educational group based in the Graduate School of the Humanities and Sociology.





Photo: Arlindo Camacho

## BISSAU, A CREATIVE CITY IN A TRADITIONAL COUNTRY TO RESCUE THE “DJUMBAI” (A SIMPLE AND COMPLETE WAY OF BEING WITH OTHERS)

**Overview:** Bissau functions as a creative laboratory where tradition and modernity converge to amplify the voices of local communities, enabling them to affirm a development strategy deeply rooted in Guinean identity. The main objective is to safeguard and promote tangible and intangible cultural heritage, affirm and celebrate Guinean identity and create resilience through music.

**Context:** Rooted in more than 30 ethnic groups, Guinea-Bissau is a country under reconstruction and Bissau acts as a hub for NGOs, as well as public and private companies active in international cooperation. Consequently, the city's (and the country's) development is strongly influenced by external priorities. Determined to preserve cultural identities and to actively contribute to the future of their city, a team drew up a project inspired by and anchored in the UNESCO Creative Cities Network, in the area of music. Music has always been the voice and expression of the people:

it perpetuates traditional manifestations, it serves to channel and shape social affirmation, and it is a pedagogical tool in the exercise of citizenship that fosters cohesion and a capacity to thrive.

**Method:** Transdisciplinary and multi-ethnic teams (including artists, artisans, neighbourhood representatives, local associations, Guineans in the diaspora and researchers) will be responsible for stimulating dialogue, organizing a National Cultural Heritage Inventory and implementing the actions proposed in the Action Plan. A university collaboration with the National Institute for Research and Investigation (INEP) is expected to monitor the dynamics and co-evaluate the INPC methodology.

**Benefit:** The project empowers the residents of Bissau, by creating bridges between shared identities reinvented through music.



## EDUCERE ALLIANCE

**Overview:** Educere Alliance, is a col-lation of educational projects that ex-tol Indigenous and folk knowledge and hands on skills. Blurring the bounda-ries between research and teaching, the alliance promotes curiosity and gener-ous affective means of association, that build a mutual regard for knowledge diversity.

**Context:** The Alliance forms a global community of educators, scholars and project leaders seeking to innovate in education through a focus on resilience, sustainability, skilled practices and good living. Networked projects include the Indigenous-led bilingual and inter-cultural teaching training programme, Formabiap, in the Peruvian Amazon; Afro-Indigenous creativity Rios de En-contro, in Brazil; the Haitian bee-keep-ing sustainable livelihoods project Loyola Apikilti, among others in India and Africa.

**Methods:** Scholars have come together in a Special Issue published by the Ox-ford Review of Education on Pedagogy

and Indigenous Learning and Knowing (2023, in press, editors Elizabeth Rah-man and Thandeka Cochrane) to doc-ument what can be learnt from Indige-nous ways of perceiving and engaging in the world, that support the flour-ish-ing of humans and other species. With a focus on affirmation, the events, workshops and meetings of the alli-ance, take a practice-based approach, using experimentation and sharing plural pedagogic experiences.

**Benefits:** Using developmental evalu-ation to facilitate change around inde-terminate and socially complex issues, the alliance focuses on collaboration, co-design and an asset-focused mutu-al regard for diverse forms of knowing and learning. The affirmation of diverse knowledges promotes belonging, a sense personal and collective of value and purpose, strengthening and nur-turing identities in the face of systemic barriers.





## AFRICANISING AND HUMANISING SUSTAINABILITY

**Overview:** This project interrogates sustainability discourse to transform the idea of sustainability to one that is more relatable in the African context.

**Context:** Africa is threatened by rampant continuous resource exploitation and is plagued by environmental and social injustices. Yet almost every extractive development project is undertaken under the guise of sustainable development and sustainability. Within the context of rampant resource exploitation, it is, therefore, unclear what sustainability means for Africa.

**Method:** This project uses transdisciplinary modes of inquiry to examine the concept of sustainability in Africa. The broad question we ask is, how can we 'Africanise' sustainability for human and environmental wellbeing and overall societal reform on the continent? This question is addressed through four humanities-led themes: Ubuntu and African ecologies, Decolonisation of nature, Education and African environ-

mental futures, and Indigeneity, Nature, and Human Development.

**Benefit:** The project will develop a new sustainability grammar that can contribute towards achieving a socially just future for all Africans. Findings will be relevant to academic community, government and non-governmental policy making bodies, and implementing agencies.

This collaboration is undertaken by the African Observatory, Centre for the Advancement of Scholarship at the University of Pretoria, the University of Cape Town and the University of the Western Cape.



## 4-OCEANS – A HUMAN HISTORY OF MARINE LIFE C.100 BCE TO C.1860 CE

**Overview:** 4-OCEANS assesses the importance of marine life for human societies during the last two millennia, up to the age of fishing under steam-power. It contends that the harvest of marine resources played a critical, but as yet underappreciated and poorly understood, role in global history.

**Method:** 4-OCEANS is novel in its aims to identify, quantify, and characterise marine extractions, and examine if, when and how barriers of knowledge to marine resource use were overcome, and with what consequences to societies and environments. Using an interdisciplinary team combines historical archaeology, marine environmental history, climate history, natural history, geography, historical ecology, ancient DNA, radiocarbon dating and zooarchaeology the project examines when and where marine exploitation was of significance to human society; how selected major socio-economic, cultural, and environmental forces variously constrained and enabled marine exploitation; and identify the consequences of marine resource exploitation for societal development and the oceans. Through these objectives the project

notes how marine resources as novel wealth altered societies throughout history. It asks how might marine wealth have enabled societies to escape food shortages? How did it triggered long-term socio-economic impacts and ecological consequences and how were marine resources valued, consumed, and energetically transformed?

**Location:** The 4-Oceans project is primarily located in 3 principal investigator universities; Trinity College Dublin, Norwegian University of Science and Technology, NOVA University of Lisbon.

**Benefit:** 4-OCEANS lends historical specificity to understanding of marine extractions and the role of marine resources for human society. A prime objective of 4-OCEANS is to establish a platform of open-source documentation of marine resource extraction to enable researchers to examine the consequences of human engagement with marine life by tracing the consumption, capitalisation and socio-economic metabolism of resources for societal development, and fisheries-induced changes in marine life.





## CO-CON- STRUCTING THE PAST AT IGÎLÎZ (MOROCCO) : INTERACTIONS BETWEEN LOCAL KNOWLEDGE AND SCIENTIFIC EXPERTISE FOR PROMOTING HERITAGE RESILIENCE IN A RURAL ENVIRONMENT

**Overview:** This project explores the uses of the Argan tree throughout the medieval period. Using archaeology, bioarchaeology, archaeometry, the history of texts, ethnobiology and local expertise it seeks to understand the management of the Argan grove, and the technique of making Argan oil in the village of Igiliz.

**Context:** Igiliz is the birthplace of the Almohad movement, initiated by Ibn Tûmart, a famous Moroccan historical figure. This religious reform movement, active in the 1120s, led to the creation of the largest empire to rule the Muslim West during the Middle Ages. For a variety of reasons, Igiliz disappeared from historiography, throughout the 20th century. Today the memory of Igiliz has been preserved locally and is now being recovered nationally with particular emphasis on the emblematic Argan tree and the oil it produces.

**Method:** The project uses a transdisciplinary framework that combines scientific expertise with local knowledge to produce a co-reconstruction of the past. By using archaeological reflec-

tions alongside the exceptional wealth of local knowledge regarding sustainable farming and animal husbandry, food, construction and ceramic production, the project has been able to produce a lively reconstruction of daily life for local resilience in the face of a changing climate.

**Benefit:** Igiliz offers a case of resilience. This resilience is at the heart of a project which aims to rebuild and enhance a piece of history and an area, of Morocco's Souss-Massa region. The memory of this site has been preserved locally and is now being recovered nationally. The project continues to be developed with local communities to create an educational tourist circuit on the site.





## ENVIRONMENTAL, ECONOMIC AND SOCIAL SUSTAINABILITY IN THE TERRITORY OF THE UNESCO GLOBAL GEOPARK CAMINHO DOS CÂNIÕES DO SUL: THE LANDSCAPE, ARCHAEOLOGY, HISTORY AND CULTURE OF INDIGENOUS PEOPLES AS TOOLS FOR EDUCATION.

**Overview:** Working collaboratively with the University Extremo Sul Catarinense (UNESC, Brazil), the UNESCO Global Geopark Southern Canyons Pathways' technical team (UGG'p SCP), and the indigenous communities of the territory, this project has developed a map of the archaeological, historical and cultural heritage of indigenous peoples of the area. Through knowledge sharing, this initiative hopes to build a more just, egalitarian, inclusive and sustainable local society. It focuses its attention on the need to strengthen solidarity and foster a culture of peace and citizenship through highlighting local factors such as: history, culture, heritage, territory and biodiversity.

**Context:** The project develops a long-standing relationship between UNESC, a teaching, research and extension institution, the public sector in UGG'p SCP and the indigenous communities of the village Tekoá Marangatu and the village Tekoá Nhu Porã.

**Method:** Based on a pedagogy that proposes decolonization of human memory and imagination through socio-cultural-environmental dialogue,

this project uses knowledge exchange in formal and non-formal education spaces. It thinks about "cultural literacy" as an instrument to understand how territory, the environment and culture entwine and encourages the emergence of an holistic identity that connects people to the landscape allowing identification of themselves as part of the whole. This project draws from a range of sources including research, disciplines and teaching in the topics related to the region, heritage, countryside, archaeology, ecology and geo-biodiversity. The schools involved in the project go through stages of team visits, with training and exchange of knowledge between teachers, students, and works inclusively with students in the construction of participatory cartography in the classroom,

**Benefit:** The project advances in commitments to achieve levels of sustainability in the territory where it operates.





## UNVEILING KAIMUR'S ENIGMATIC HERITAGE OF INDIA: EXPLORING THE ETHNO- ROCK ART TRADITION VIASUSTAINABLE DEVELOPMENT INITIATIVES

**Overview:** This ethnoarchaeological project collected insights into humanity's long-term relationship with nature by focusing on the Kaimur rock art located in India's Eastern Vindhyan mountain range. The project explored the rich symbols associated with mythology and folklore and the intricate processes involved in creating the range of pigments used to decorate rock shelters. It reveals that the patterns and colours used today are the same as in the distant past.

**Context:** The tradition of rock painting remains an important activity in the vast 300 km long region within the hill belt that divides north and south India. This area is home to numerous tribes and contains hundreds of sites dating back to prehistoric times.

**Method:** Locals played a pivotal role in this transdisciplinary rock art project that ran between 2016 to 2022. The project used a team of local people, artists and a multidisciplinary group of academics. Through a series of collaborative trips into the forest the previously

undocumented symbolism, meanings and beliefs were understood. Passed through generations orally, traditional narratives provided further crucial information necessary to interpret a range of themes depicted at the various locations. Additionally, local expertise in pigment preparation and the techniques employed in colouring the rock shelters offered a deeper understanding of the materials used and the artistic processes employed by ancient artists. In addition, the locals were fundamental in raising awareness and fostering important public engagement.

**Benefit:** This endeavour made significant strides in closing the knowledge gap concerning the cultural meanings of rock art in India. Further research is required to pursue, to comprehend rock art's historical and cultural context as grounds of ongoing adaptive community-led processes.





Picture by Wisse van Engelen

## REWILDING THE ANTHRO- POCENE: STUDYING SHIFTING MULTISPECIES RELATIONS IN A SOUTHERN AFRICAN CONSERVATION LANDSCAPE

**Overview:** *Rewilding the Anthropocene* examines changing relations between people, wildlife, plants and microbes in the context of the Kavanago-Zambezi Transfrontier Conservation Area (KAZA TFCA), one of the world's largest transboundary conservation initiatives.

**Context:** Since the creation of the KAZA TFCA, the five member-states Namibia, Botswana, Zimbabwe, Zambia and Angola endeavor to jointly manage wildlife populations and support their movements by connecting protected areas across national borders. This conservation initiative is transforming institutions and patterns of access and use of natural resources, bringing wildlife closer to people, their farms and their livestock, creating new challenges to their livelihoods, but also opening up new (often tourism-based) sources of income. In this context, *Rewilding the Anthropocene* examines the reshuffling of multispecies relations.

**Method:** Coming from environmental anthropology, and inspired by multi-

species studies, this project innovatively combines an ethnographic approach (interviews and participant observation) with other methods; these include archival research to study the environmental history of the KAZA TFCA, cultural and participatory mapping, household surveys, and the use of ecological data and methods to combine ethnographic insights with an understanding of changing ecologies.

**Benefit:** The project will provide insights into changes in the livelihoods, institutions, and knowledge of human stakeholders in the KAZA TFCA and document the changing conditions of their coexistence with wildlife and other species. For more information, visit: [www.rewilding.de](http://www.rewilding.de)





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## READING FOR CHANGE (REACH): A FUTURE FICTION MAKER SPACE

**Overview:** Designed in collaboration with international partners and local schools in the context of a European research project for 'Teacher Education for a Future in Flux' and the University of Cologne's research hub for Multidisciplinary Environmental Studies in the Humanities (MESH), the project gives teachers, teacher educators and communities a space to explore climate fiction for young readers and its potential for transformative learning.

**Context:** Climate fiction (cli-fi) has been described as a key site for the imagination and exploration of futures in a climate-changed world. Little has been said about the role and potential of fiction for young learners in multicultural and multilingual settings, however, and there exist hardly any teacher training programmes and materials that take full advantage of the creative and imaginative affordances of fiction. Reading for Change mobilises diversity- and sustainability-oriented literary learning for social and ecological transformations and underlines the significance and power of the imagination for future literacies.

**Method:** Literary scholars, education scientists and practitioners develop a shared understanding of the creative and transformative potentials of literary fiction and undertake conceptual as well as ethnographic work on the reading experiences of young readers and the teaching practices of schoolteachers from primary to higher secondary educational settings. Jointly, they co-design a cli-fi library for young learners and teacher training modules for in-service teacher training.

**Benefit:** The project enables teachers and learners to reflect on and employ their creative imagination and develop a new sense of agency regarding the daunting realities of climate change.



## RESPONSE TO THREATS TO SCIENCE AND HERITAGE IN GREENLAND

**Overview:** The RESPONSE project attends to threats to cultural heritage as a result of the rapid loss of once well-preserved organic remains due to rising soil temperatures and accelerated coastal erosion in SW Greenland. It utilizes the rich store of local and traditional knowledges in collaboration with geo-archaeological research, to better understand Norse farming practices and their legacy for modern farming in the region.

**Context:** This project is part of a larger umbrella program, North Atlantic Encounters (NAE), which promotes trans-disciplinary cooperation between the humanities, natural sciences and indigenous communities. It explores a rich archive of human experience in Greenland, encompassing the creation of cultural landscapes and seascapes, significant climate impacts, anthropogenic stresses to ecological systems, medieval and early modern world impacts, participation in different colonial systems, and the onset of modernity. The aim is to contribute to modern marine science and management efforts and engage with Greenlandic colleagues working to ensure sustainable subsistence hunting.

**Method:** The project combines modern ethnographic interviews with documentary historical research. It also utilizes the rich Greenlandic store of local and traditional knowledges about land and sea, animals, weather, and the interaction of humans with the environment to assess the impact of a millennium of human activity in this landscape. It promotes co-production of knowledge with local institutions, indigenous communities and scholars and more effective use of digital media for public engagement and education for sustainability. It will make use of a full range of ancient DNA, trace element, and stable isotopes to investigate the life experiences of Norse Greenlanders from the foundation of the settlement in the Viking Age down to its mysterious demise in the 15th century.

**Benefits:** Community engagement and co-production of intergenerational knowledge will improve resilience and creative adaptability increasingly needed by societies in the present century.



# We launched a global campaign promoting human security for all



## HUMAN SECURITY FOR ALL WORLD ACADEMY OF ART & SCIENCE: LEADERSHIP IN THOUGHT THAT LEADS TO ACTION

**Overview:** Human Security is the unifying theme of the 17 SDGs. The central objective of Agenda 2030 is to ensure Human Security for All. Human Security is the common integrating idea that links the SDGs to each other. The World Academy of Art and Science and the UN Trust Fund for Human Security have launched the global campaign Human Security for All (HS4A) to galvanize people around this vision and build momentum for a global social movement in support of Agenda 2030.

**Context:** Efforts thus far have not been sufficient to ensure timely achievement of Agenda 2030. Something more is needed. The top-down commitment of nation states needs to be supported by commitment and action by communities, organizations and individuals around the world. Agenda 2030 identifies the critical elements; the umbrella of Human Security unites them. HS4A seeks to make the 17 SDGs personally relevant to people everywhere.

The Consumer Electronics Show 2023 adopted HS4A as its theme. The message of Human Security resonated with 120,000 business and technology lead-

ers and 5000 members of the press. This was confirmed when CES decided to continue collaborating with HS4A in 2024.

HS4A evoked similar responses from environmentalists at the world's largest environmental expo EarthX 2023, faith-based groups representing hundreds of millions of people; members of the Inter-Parliamentary Union representing 170+ national parliaments; InterAcademy Partnership of 140+ national and global academies; the global network of SDSN universities; IARU, a global network of amateur radio operators; and AFCO, a US association of journalists representing 2000 publications worldwide. The campaign continues to reach out to universities, youth, artists, filmmakers and others.

**Benefits:** HS4A aims to create global awareness, shape public discourse and inform policy-making in support of Agenda 2030.



Soil drought in Bekaa, Lebanon 2022 (Photo credit: Lien Arts / IWMI Flickr CC BY-NC-ND 2.0).

## MEDITERRANEAN CRITICAL ZONES: SOCIO-ECOLOGICAL CRISES AND RESILIENCE IN EGYPT AND LEBANON

**Overview:** *Mediterranean Critical Zones* critically engages with impact-oriented research, environmental-humanitarian interventions, environmental policies and development agendas, including community-based activism and ecological grassroots initiatives, in the Mediterranean region.

**Context:** The Mediterranean has been declared a climate change hotspot exceeding global trends and averages for a number of climate and ecological variables, thereby placing countries in the EMME region (East Mediterranean and Middle East) amongst the most vulnerable ones on Earth. The project investigates current approaches, responses, and forms of resilience in the face of several simultaneous socio-ecological crises that are entangled in this threatening situation.

**Method:** Developing a transdisciplinary ethnographic heuristic combining science and technology studies with environmental humanities approaches, the project employs a stakeholder-focused methodology to capture the current complex dynamics and multiscalar entanglements in the design and imple-

mentation of environmental-humanitarian programs and interventions. It uses forms of collaborative research at the intersection of politics, public sphere, and art, in dialogue with natural and engineering sciences, to experiment with ethnography as an emancipatory epistemology.

**Benefit:** The project aims at establishing an international research network of regional experts and partners in the MEMME region, which will enhance cooperation and exchange between the participants and generate further collaborative research and projects addressing underlying cultural constraints and opportunities in response to the dire impacts of climate change in this region.

For more information, visit: <https://mediterranean.uni-koeln.de/projects/mediterranean-critical-zones>





## INTER- CULTURAL COMMUNITY COLLEGE OF MOTHER EARTH IN BOLIVIA

**Overview:** KAWSAY is a nongovernmental, not for profit organisation dedicated to strengthening and revitalising native indigenous cultures in Bolivia.

**Background:** KAWSAY works to strengthen cultural identity and generate community education spaces to build new models of an integrated society in accordance with the vision of the cosmos where we all come from Pacha Mama (Mother Earth). It organises courses, workshops and community learning events and exchange of knowledge to build community alternatives for local and global needs.

**Method:** The activities of our school correspond to daily life itself. This requires learning to share our work, problems, food and aspirations with the community and the Earth. This alternative training project works through community training, education and research activities as main instruments to create social, political, economic, technological, spiritual and cultural models based

on the community/territory. It is based on ancestral and traditional agro-ecological knowledge which generates new alternative formulas of pluriversal education with a view to developing resilience to cultural and climatic change. A first international experience of Kawsay was the International Course on Intercultural Pedagogy, a joint effort of Linköping University and KAWSAY, with participants from Sweden and the Andean region of South America (Bolivia, Ecuador and Peru).

**Benefit:** To develop indigenous wisdom, art, science and technology to consolidate innovative educational processes, new models of multicultural and sustainable society for the Good Living in harmony and care for the World.





## POETICS AND POLITICS OF EXTRACTION AND THE ENVIRONMENT

**Overview:** This project is a Humanities-led study of resource exploitation in Africa designed to expose the continued environmental and socio-political challenges in post-colonial Africa.

**Context:** Unsustainable patterns of resource extraction continue unabated in Africa. Violence, environmental degradation, loss of indigenous knowledge systems, climate change and broader social injustice remain a dominant feature on the continent. We are seeking a new grammar to frame relations of power between state, science, ecologies and people with regards to the layered problems of extraction and the environment.

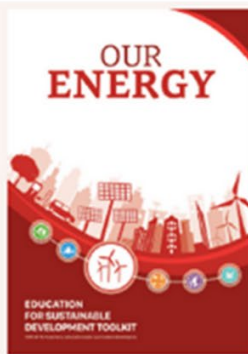
**Method:** By adopting a transdisciplinary humanities-driven approach, this project gathers case studies to examine the problem of resource extraction in Africa. Through a seminar series of academic and non-academic actors called “Engaging the Environmental Publics,” we co-interrogate the problem of extraction while building

bridges and synergies between different knowledge domains. To date, the project has covered cases from Zimbabwe, Kenya, Ethiopia, Zambia, Angola, Nigeria and South Africa and aims to explore more cases on the continent.

**Benefit:** By interrogating societal, environmental and sustainability challenges facing Africa this work encourages co-production of transformative change.

This project is a collaborative effort of the African Observatory’s Centre for the Advancement of scholarship, the Sociology and Chemistry Departments at the University of Pretoria, scholars from various institutions in Africa, and non-governmental organisations such as groundWork, Tuks for climate change, and the Botswana Climate Change Network.





## EDUCAMP CENTRE FOR APPLIED RESEARCH ON THE ENVIRONMENT AND SUSTAINABILITY (CARES)

**Overview:** EduCamp was a 3-phase project that introduced sustainable development teaching into Egyptian schools between 2010 and 2017.

**Context:** Seven Centres of Excellence hosted by Egyptian Universities were established to promote and support the introduction of Education for Sustainable Development (ESD).

**Method:** ESD resource kits were developed for public schools in line with existing curricula to provide activities for teachers and students. The kits were adapted to explore the problems identified in the El Warraq area and to offer solutions to the challenges as teaching materials.

- EduCamp I: introduced ESD to public schools in Egypt.
- EduCamp II: tackled the objective of fostering ESD in two schools in El Warraq. In addition, training programmes and manuals for educators were developed to enhance the capacity of teachers, and local volunteers (youth and women) during the summer. The existing science labs, educational and recreational facilities were improved and reno-

vated to provide better educational and cultural sustainable services to the El Warraq community.

- EduCamp III: extended the project activities in two schools in Boulaq Eldakroul region.

To ensure the institutional and financial sustainability of the project, the School-Community Participatory System was established to develop a model for partnerships between the Ministry of Education, schools, local communities, investors and others.

**Benefit:** EDUCAMP partners includes European Union, GIZ, Ministry of Education and local NGOs. The project aimed to disseminate and introduce the concept of education for sustainable development to achieve the educational goals of Egypt 2030 strategy.



## RE- INVIGORATING THE BIOCULTURAL HERITAGE OF THE OLIVE TREE IN SICILY: SCIENCE- PRACTITIONER INTERFACE AND PLACE- BASED KNOWLEDGE COLLABOR- ATION

**Overview:** In collaboration with smallholders and local communities, the project engages with sustainable local management of old olive groves on the island of Sicily. It documents current and traditional ecological knowledge with the overall aim of creating a forum for innovative agricultural practices that build on historic knowledge.

**Context:** Olive agrosystems play a crucial role in the conservation of biological diversity and livelihood security in Sicily. Under continued management, olive trees can live to over thousand years old and thus are an example of long-lasting bio-cultural heritage. However, with industrial intensification, rural abandonment and climate change local ecological knowledge which supported the olive groves is disappearing.

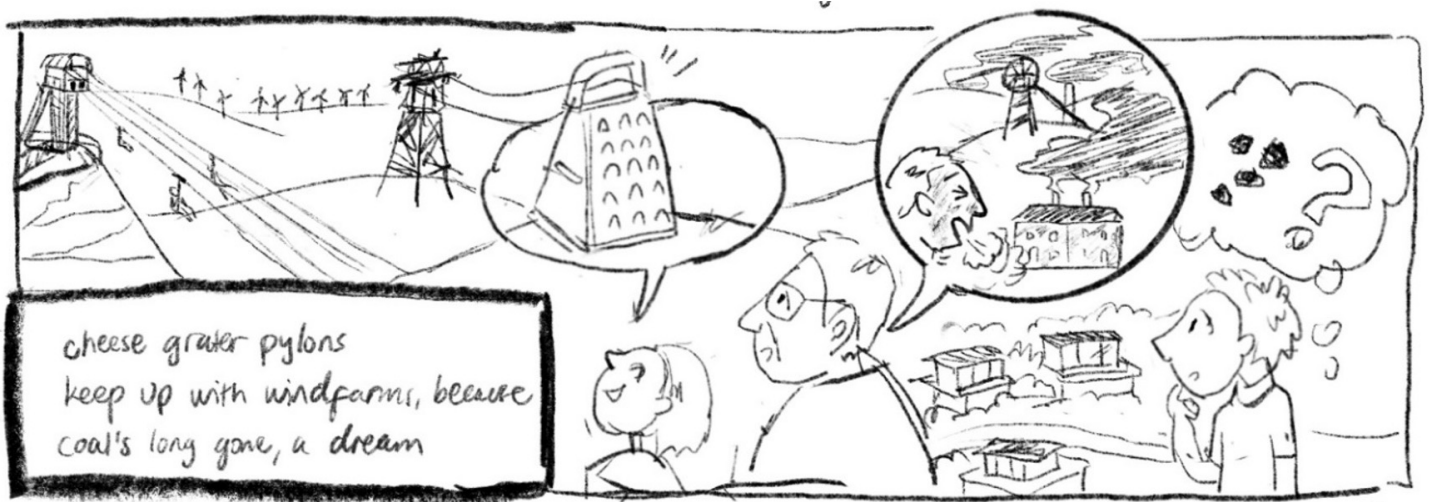
**Method:** Working closely with local olive smallholders, our transdisciplinary research employs a range of methods, including remote sensing techniques, plant micro-fossils analyses and the collection of local ecological memory, to map the history and ecology of olive groves. The involvement of a young researcher, who at the same time is a practitioner and stakeholder, creates an

important base for a collaborative approach. A historical knowledge of olive cultivation will allow us to better define strategies and solutions for the management and maintenance of these important eco-cultural landscapes.

**Benefit:** There is a nascent interest in protecting biocultural heritage through reinvigorating old practices, but knowledge and confidence in maintaining old olive groves have been partly lost. The project will also stimulate regional authorities to understand the potential of traditional olive cultivation and intercropping/agroforestry practices.

This project is a collaboration between local olive smallholders, local communities, the Department of Archaeology and Ancient History (Uppsala University), Department of Human Geography (Stockholm University) and Department of Agriculture and Forestry Science (Palermo University).





## OPTIC: UNDERSTAND- ING OLDER AND YOUNGER PEOPLE'S PERSPECTIVES AND IMAGINARIES OF CLIMATE CHANGE

**Overview:** This transdisciplinary project from Wales, UK, uses creative methods and intergenerational dialogue to explore understandings of climate change to produce a graphic novel that illustrates differences in perspectives.

**Context:** Through climate change, threats are emerging in previously hospitable environments. Understanding older people's climate change perspectives, behaviours, and future visions will enable environments to be shaped and managed effectively for health, wellbeing and sustainability. The illustration (above) shows one of the ways in which participants' stories are being retold in the comic.

**Method:** Interactive OPTIC workshops explore perspectives and future imaginaries from 55 older and younger people, including urban food growers, a primary school, a coastal care home, a women's walking group, farming family and a former industrial settlement. In these events we used creative methods including games, comic-creation, collage, cut-ups, walks, on-line interviews, Haikus and storyboarding. We wrote haikus to represent how older

and younger people describe past and present climate change:

Cheese grater pylons  
keep up with wind farms, because  
coal's long gone, a dream

In Laura's image we see how coal infrastructure (and the health impacts associated with it) are replaced by a zip wire for tourists, and how future environments could benefit pollinators such as bees – or not. These methods help our participants and us to take time to linger and notice, articulate hard-to-say values, and explore change by making the familiar strange. Workshops are audio recorded and stories are developed into a bilingual (Welsh and English) comic book by Illustrator Laura Sorvala.

**Benefits:** Results of this work are being shared with policy makers (Future Wales) to design guidelines for environments that better address older people's climate change perspectives and behaviours.

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## MOROMBE PROJECT (IHOPE): LONG-TERM EFFECTS OF SOCIO- ECONOMIC ACTIVITY ON ECOLOGICAL STABILITY

**Overview:** The Morombe Archaeological Project (MAP) investigates societies' different modes of production using remote sensing, machine learning, and geochemical soil analyses. The project's overarching questions ask: How do different socioeconomic systems influence the ecological legacy of human occupation in an area, and how can these differences inform our understanding of sustainability?

**Context:** The project is based in the Velondriake Marine Protected Area of Madagascar where ancient communities relied on a range of subsistence strategies and navigated through extreme episodes of environmental and climatic change. The territory is home to diverse local and indigenous descendant communities, including Vezo fishers, Mikea foragers and Masikoro herders and has a well-documented archaeological record of 3000 years.

**Method:** The MAP team is collaborative by design. It is made up of local and indigenous community members, an international group of graduate students, and postdoctoral researchers working together to investigate how people,

land- and seascapes co-evolve. The work is grounded in the co-production of science, and the recording, preservation and dissemination of local knowledge. It aims to contribute long-term perspectives on human-environment interactions to public debates, conservation, planning and policymaking on the issues of climate change and sustainability.

**Benefits:** This study will provide an analysis of how small-scale societies changed the Earth's ecological systems at local and regional scales. In Madagascar, where coastal communities are at increased risk from climate change, improving understanding of long-term human-environment interactions and past human response to environmental change is pivotal for developing in-place conservation policies. With a focus on small-scale community environmental impacts, this project builds new approaches to identify subtle ecological legacies at the landscape scale.





Anton Darius, Unsplash

## **SABERES SOBRE LA MESA (TRANS. KNOWLEDGES ON THE TABLE): FOOD SYSTEMS TRANSFORMA- TIONS IN SOUTH AMERICA; INSIGHTS FROM A TRANS- DISCIPLINARY PROCESS ROOTED IN URUGUAY**

**Overview:** Between 2019-21, the South American Resilience and Sustainability Studies Institute (SARAS) in Uruguay, gathered a transdisciplinary international community of natural and social scientists, humanities scholars, artists and multiple stakeholders to co-design food systems transformation. Saberes sobre la mesa engaged Uruguayan policymakers, government officials, food producers, the service sector (chefs), soup kitchens, other civil organizations, and consumers.

**Context:** Latin America is the largest net food exporting region in the world. The continent's food systems significantly contribute to global climate change and are at the core of many crucial global issues such as food security, nutrition, endemic poverty, land use change, loss of biological and cultural diversity and national identities. Uruguay shares many of the social-ecological challenges and risks that are characteristic of the larger region.

**Method:** The project organised transdisciplinary working groups to represent and reflect on the prominent problems in the region: fisheries, the farming

export industry, and the emergence of agroecology. It then developed nine projects. Four transdisciplinary projects focused on bottom-up processes of innovation in the sustainable production, distribution and/or consumption of food. Four interdisciplinary projects which targeted decision makers, researchers and scholars. Each communicated information on the social-ecological footprints of Uruguay's global trade flow of food, and on the feasibility of circular economy. The last project was a book on the history of local recipes and the place of local food culture in national identity.

**Benefit:** Saberes sobre la mesa built a collaborative network comprised of academics, several ministries and municipal governments, the media, agricultural producers' organisations, and civil society groups to produce the knowledge necessary to help address the significant challenges in Uruguay listed above.



The Nunalleq Educational Resource (2019); Climate Change & Nunalleq (short film, 2023)

## THE NUNALLEQ EDUCATIONAL RESOURCE

**Overview:** Working with the Yup'ik community in Quinhagak, Alaska, the Nunalleq Educational Resource project has developed a series of interactive digital resources intended to communicate archaeological insights to the public for the benefit of future generations. The project focuses on community co-design, working with and for Indigenous communities.

**Context:** The combined forces of global warming are changing the landscape and destroying the history of vast areas of the Alaskan coast. The rapid melt of permafrost is eroding 100s of miles of coastline with up to 10 metres falling into the sea overnight with a high tide. This is resulting in the ongoing dramatic loss of archaeological sites and artefacts into the sea. Nunalleq items are alive with cultural meanings and have additional resonance as they provide a record of previous adaptations to the climate changing.

**Method:** The Nunalleq Educational Resource was co-designed with the local community and is aimed at an Indigenous school-age audience. The resource uses a range of voices to explore

and represent the archaeology and culture of Nunalleq. It draws from the knowledge of elders, artists, craftspeople, youth, as well as archaeologists to combine traditional and scientific knowledge with contemporary lived experience and insights. In 2021 the resource won the Archaeological Institute of America's award for 'Outstanding Work in Digital Archaeology' and secured further funding to develop a follow-on project that allows the Nunalleq Digital Museum and Catalogue to be further developed. This new resource is aimed at an older demographic of Yup'ik people, academic researchers and wider public and was released in Spring 2023. The Nunalleq Educational Resource project sits within the Nunalleq Archaeology Project in Alaska.

**Benefit:** Sustained collaboration over time is vital to impactful community outreach in the circumpolar north.





## LARGE-SCALE RENEWABLE EN- ERGY INFRA- STRUCTURES IN AFRICA: FROM GREEN SACRIFICE ZONES TO ENERGY LANDSCAPES OF VALUE?

**Overview:** *Energy Futures: Infrastructures and Governance for Renewable Energies* is part of the Collaborative Research Center 228 Future Rural Africa at the Universities of Bonn and Cologne. Together with local research partners, the project explores how large-scale renewable energy projects in Eastern and Southern Africa are envisioned, planned and implemented. Most notably, it focusses on geothermal infrastructures in Kenya and – more recently – on green hydrogen production.

**Context:** Africa has come into focus as a potential major producer of renewable energy. Many countries on the continent offer optimal conditions for solar, wind and geothermal energy, as well as for the production of green hydrogen and its derivatives. Large-scale renewable energy schemes, however, often end up as “green sacrifice zones” where local communities bear the social and environmental costs of such projects. *Energy Futures* examines into the political ecology of such projects and explores whether there are possibilities for better, locally valuable and liveable “energy landscapes”. The project also explores visions, practices and epistemic

mobilities among energy professionals, the cross-scale dynamics of renewable energy governance, and – more broadly – the linkages among technologies, actors, and institutions.

**Method:** An international team of anthropologists and geographers is exploring these issues, using primarily qualitative and ethnographic methods, based on decades of research on conflict, land use, and social-ecological change in one of the main geothermal project areas.

**Benefit:** The project enables deep insights into the political ecology of renewable energy infrastructures and their local and translocal governance dynamics, in order to advance a socially just transition to affordable and clean energy. To this end, the project is in conversation with non-academic partners, such as NGOs and local grass-roots initiatives, as well as building long-standing relationships with researchers at several universities in Kenya, Namibia, and South Africa.



## SAFEGUARD PLAN BY AND FOR THE COMMUNITY ON THE MEMORY ISLAND OF GORÉE

**Overview:** This project plans to develop thoughtful cultural tourism that will safeguard and conserve the tangible and intangible heritage of the 'memory island' of Gorée and ensure its legacy is not lost, as part of a sustainability strategy anchored in community agency. The project will provide locals with a sustainable livelihood and accommodate the accumulating numbers of visitors.

**Context:** The Island of Gorée in Senegal holds testimony to the tragic suffering of the Atlantic slave trade. Designated an historic site in 1944, the Island was placed on the UNESCO World Heritage List in 1978. Today, it has become a pilgrimage destination for a growing African diaspora seeking to understand their roots and is facing numerous conservation and sustainability challenges from coastal erosion, the pressures of tourism and the dilapidation of important structures including fortresses, streets and squares. These enable visitors to walk through the history of the largest slave-trading centre on the African coast. Urgent restoration is required to preserve this important heritage site.

**Methods:** By working with the Gorean community to document and co-establish its cultural resources, this project intends to bring the landmarks to life and enable the character of the island to be retained. This builds from previous years of interaction between community, local authorities and academics and will be achieved through a range of activities such as festivals, plays, commemorations, social media, exhibitions, the promotion of culinary and craft traditions alongside archaeological excavations, restoration and the maintenance of monuments.

**Benefit:** Safeguarding Gorée will ensure that the inhabitants and visitors can live in a preserved and authentic environment offered by a new backup plan.





## SUSTAINING BIOCULTURAL DIVERSITY AT IRELAND'S HOLY WELLS

**Overview:** This collaborative project brings together community members and scholars from across Ireland and Northern Ireland to record holy well sites that remain in active use as well as those nearly lost to living memory.

**Context:** Holy wells are natural springs that have inspired spiritual beliefs and practices and help maintain habitats and ecosystems. These sacred sites are nodes of biocultural diversity where culture and biology might coevolve and are good indicators of local water health. Knowledge about the use and stewardship of holy wells can help monitor effects of climate change, and model best practice to foster socioecological resilience through forecasting water crises.

**Method:** In response to the growing water crises of the 21st century, this project considers how the Holy Wells from across Ireland might help foster water stewardship and the protection of these crucial resources. Working collaboratively with individuals and local community groups, it co-documents shared Intangible Cultural Heritage associated

with water. Looking at the care, lore, rituals and healing traditions associated with these sites it identifies patterns in panhuman water use. It blends community stakeholders' perspectives with the overlapping lenses of anthropology, archaeology, art history, folklore, geography, history, hydrology, and medical humanities, and documents accounts of well traditions, prayer "rounds," local stories about sites and their patron saints along with photographic and video documentation.

**Benefits:** The project has produced a citizen-science on-line database and publications grounded in Historical Ecology, Archaeology and Anthropology.





## TRADITIONAL KNOWLEDGE, RESILIENCE, AND FOODSCAPE: TRANSPACIFIC INDIGENOUS ECOLOGY

**Overview:** This project examines how the International Partnership for the Satoyama Initiative (IPSI) is practiced by the Indigenous people in Taiwan and in Hawai'i. The core values of IPSI promote self-sufficient management of agricultural and natural resources within a local community and asserts that indigenous resilience is pivotal to confronting and adapting to climate change, and for retaining sustainable foodways.

**Context:** This project aims to promote ecological health through spiritual resources based on an Indigenous holistic worldview through two different schemes. "Millet Ark" in the Tayal community of Taiwan seeks to revitalize the local millet culture. The project also looks at the lo'i kalo (wetland taro fields) revitalization in Hawai'i and its literary representations. The project brings together indigenous ecological farmers, the American Seed bank, Waikato University, the Taiwan Science Education Center, the Ministry of Agriculture of Taiwan and native Hawaiiane poets and scholars.

**Method:** This practice-oriented trans-disciplinary project uses walking methodology to understand indigenous ways of producing knowledge, which rely on embodied movement. It also engages with indigenous stories and myths to examine how resilience and traditional knowledges are represented in literature. This is situated within the theoretical frameworks of Trans-Pacific ecopoetics, Trans-Indigenous studies, ecocriticism, environmental humanities, critical ocean studies/blue humanities/hydrocriticism, and Hawaiian literary study.

**Benefit:** Learning from the experiences of the Satoyama area, the natural resource utilization and healthy food production discussed in this project will positively enhance the welfare and well-being of humans and their living environment. This project will establish examples of autonomous agriculture and natural resources in the regions of Taiwanese Indigenous tribes and Native Hawaiian communities to build a trans-Pacific and trans-Indigenous alliance.





## LOCALLY PROTECTED HERITAGE FORESTS IN INHAMBANE, MOZAMBIQUE: COMMUNITY-SCIENCE COLLABORATIONS

**Overview:** The project seeks to demonstrate how knowledge exchange between communities strengthens the protection of biocultural heritage in the face of climate change. Oral history, heritage places and protected forest patches are documented through collaboration between researchers and local communities.

**Context:** Locally protected forest patches in Mozambique have been safe-guarded over centuries through customary rules. Typically, these forests are burial places or seen as heritage places combining heritage and biodiversity values. These ecologically sensitive areas occur as dispersed patches in the landscape and are threatened by both licensed and illegal logging. Traditional leaders and village communities are now struggling to protect this ecological heritage.

**Method:** Though often tied to a ruling lineage, the heritage of the forest patches regulates the use and rights of resources for the whole village. Field visits led by community participants have been carried out every year to gather local history in and around the forest patches so as to document the

stories and memories related to them. Using satellite image analyses, forest patches are mapped, and boundaries are analysed over time. The locally protected forest patches have been shown to have more stable boundaries than other forest areas. Pollen and other paleoecological proxies from small lakes inside the forest patches are now being analysed for an understanding of the centennial and millennial-scale dynamics of the forest patches.

**Benefit:** The project reinvigorates local practices of conservation and fosters a crucial intergenerational knowledge exchange. Local systems of protection will be strengthened through formal recognition of local custodianship.

This project is collaboration between village councils in different localities of Inhambane province, the National Directorate of Cultural Heritage in Mozambique, the Provincial Directorate of Culture and Tourism of Inhambane, district cultural units of Inhambane province, Eduardo Mondlane University and Uppsala University.





## GATEWAY TO THE ATLANTIC: CLIMATE CHANGE THREATS TO HERITAGE AND ISLAND SUSTAINABILITY IN THE NORTHERN ISLES OF SCOTLAND

**Overview:** The Gateway to the Atlantic Project aims to investigate the long-term resilience and human eco-dynamics of Orcadian Island communities in the face of global climate change, using sites spanning several millennia and approaches integrating the sciences and humanities. It investigates sites directly threatened by modern-day coastal erosion, rising sea levels and climate change and aims to engage, educate and train volunteers and students from the UK and around the world.

**Context:** Many Orcadian sites are endangered by coastal erosion; threats from global warming include sea level change, increased storminess and increased precipitation and soil salinity. The average rate of sea level rise is estimated at c.3mm per year. The eroding sites have huge research potential and can provide important archaeological and scientific data on climate change and how people in the past confronted the marginality of these northern islands.

**Method:** A strong emphasis is placed on training and community archaeology which provides opportunities to bring together researchers, local com-

munity, students and volunteers. The project activities foster a sense of place and belonging and allow islanders to take an active role in the investigation of their heritage. Participation in data collection and recording of active change such as the loss of coastline to the sea will help familiarize people with the science behind changing climates and ecosystems. Alongside this digital recording will enable future analysis and presentation of sites that do not survive, due to coastal erosion.

**Benefits:** Raising public awareness of the impact of climate change on their fragile coastal cultural heritage at a local level and will contribute to international, transdisciplinary research of human ecological and social adaptations to ecological restoration and long-term human eco-dynamics.





## OLHO D' ÁGUA INSTITUTE: MEMORY AND SUSTAINABILITY IN CULTURE

**Overview:** The Olho d' Água Institute is a hub of community empowerment and agency. It acts as the host of the memory of communities by providing a space for events, experiences, debates and workshops.

**Context:** The Serra da Capivara National Park, Brazil (PNSC) was created in 1979 to preserve the significant archaeological remains found in the area. By 1991, it was placed on the UNESCO World Heritage List. The Park's creation displaced locals which resulted in remedial projects to support local subsistence and rebuild communities. Before the 1970s, the area was inhabited by people who lived by hunting, horticulture and the extraction of latex. When several families were evicted from their homes a range of socio-educational and economic initiatives sprung up in the region, many of them driven by the Park's leaders. Today, one of the most important and promising is the Instituto Olho d'Água (IOd'A).

**Method:** It was the work of one of the community members that initially drew the attention of academics to the area for the first time. It was also the same person who founded IOd'A in 2013 to

rethink and co-create new ways for the area in a process of revaluation, re-signification and cultural entrepreneurship. The Centro de Memórias dos Povos da Serra da Capivara is one of the initiatives structuring this movement. It houses an exhibition about the Filhos das Serras with pieces that represent the practical, aesthetic and symbolic aspects integral to the past.

**Benefits:** This reality has materialized through projects and initiatives developed since 2014, in partnership with public and private agencies: Vale Institute, Ministry of Culture, French Embassy in Brazil, Ministry of Tourism, Veredas Project, Secretary of Culture, Secretary of Social Assistance, Niède Guidon Ponto de Memória and IPHAN.



## SUSTAINABLE HORNAF- JÖRÐUR

**Overview:** This project seeks to transform the large and steadily growing tourism sector by uniting diverse activities on environmental issues under the common banner of 'Sustainable Hornafjörður'. The project will involve the development and implementation of novel venues of coproduction, including engaging interactively with local government, the national park, local knowledge institutions, NGOs, youth organizations and tourism SMEs/micro-enterprises.

**Context:** Hornafjörður (pop. 2.550) is situated in rural SE-Iceland, close to the rapidly receding Vatnajökull icecap. Although small it has a highly vibrant community dedicated to sustainable development, the circular economy and climatic change, all of which is achieved through creative collaboration in education, research, innovation and culture. Hornafjörður is currently undergoing a radical change from being a community built on fishing and agriculture to one heavily dependent on tourism. This transition offers opportunities to harness the developmental forces of increased tourism for community benefit and thereby foster new ideas about the local community's relationship to Earth and humanity as a whole.

**Method:** The project will be led by the University of Iceland's Hornafjörður Research Centre which has previously explored participatory/trans-disciplinary approaches to research and managed a large number of applied, interdisciplinary and cross-sectoral projects, with regard e.g. to sustainable tourism, educational tourism and climate change tourism. The project will look to Sustainable Iceland, a nationwide project recently launched (late 2022) by the Prime Ministry of Iceland for cooperation and guidance.

**Benefit:** The main benefit of the project will involve engendering a stronger, more enlightened, sense of agency and common purpose among all the involved community actors. Agency focussed on directing ongoing, large-scale change towards a more just, inclusive, diverse and environmentally conscious community, based on a common, co-produced vision of how the community itself wishes to develop in the near future and what steps it must take to realize this goal.



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## THE ATLAS OF THE OTHER WORLDS. DISCOVERING MULTIFOLD COMMUNITY EXPERIENCES RESISTING CLIMATE CHANGE

**Overview:** *The Atlas of the Other Worlds* aims to make visible multifold experiences of resistance to climate change. It fosters imagination promoting a collective creative exploration of the urban futures. The output is an open-access database gathering entries on municipal & grassroots initiatives on climate change and gathering creative short stories (<https://occupyclimatechange.net/>)

**Context:** Climate change is addressed at two opposite but complementary scales: it is either a matter of intergovernmental agreements or of individual choices. It is also generally depicted as something that is difficult or even impossible to experience, perceive or see. The Atlas maps the collective initiatives tackling climate change. The underlying question is: How can society adopt, nurture, and learn from those grassroots and diffused innovations? The hypothesis is that such innovations produce practices and cultures going beyond both the mainstream techno-fixes and the allegedly apolitical solution discourses.

**Method:** The Atlas is an online tool gathering entries from all over the world. By July 2023 the Atlas will have gathered

around 60 entries from 30 countries. The Atlas started from four academic institutions, each of them creating hybrid research collectives with activists. In 2019 we promoted a summer school with Fridays for Future Italy, involving around 200 climate activists, and two online winter schools (with around 80 students).

**Benefit:** The Atlas can support citizens/students to move beyond the doom and gloom discourse dominant in education for sustainability, encouraging them to think of futures as open, not pre-determined, while also not empty for us to colonize. By highlighting the local/grassroots initiatives, it can inspire a “constructive hope” leading people to mobilize for change.



## SOLAR CANOES AGAINST DE- FORESTATION IN THE AMAZON

**Overview:** This project is developing an affordable solar-powered canoe and recharging station for the Curaray river in the Ecuadorian Amazon. Affordable solar-powered canoes will revolutionize how riverine communities meet their mobility needs, disincentivize road construction and foster alternatives to the extractive model.

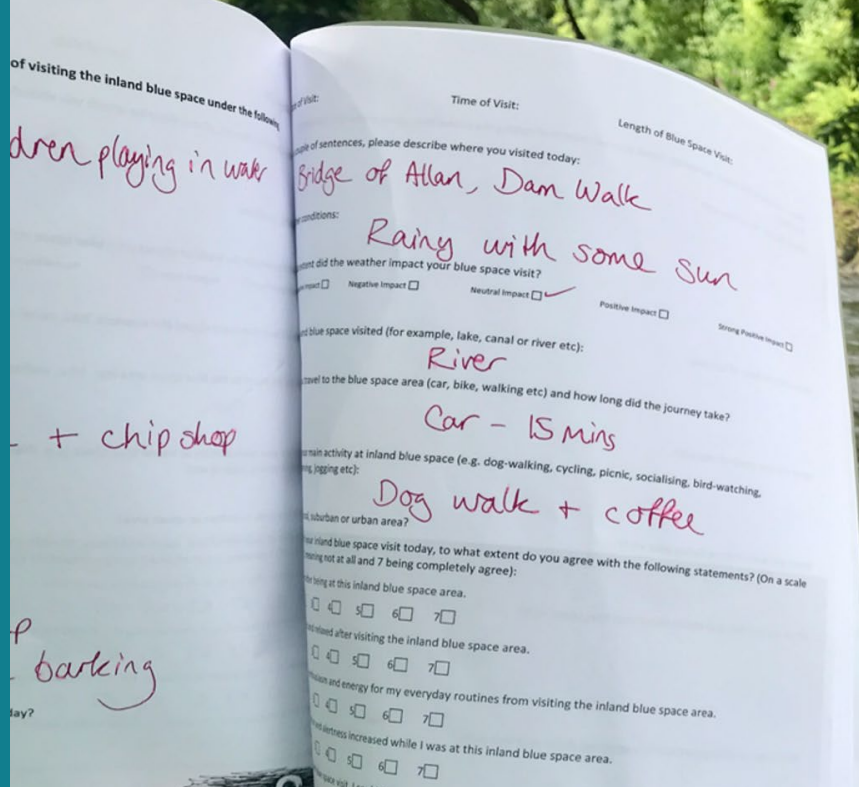
**Context:** Kichwa and Waorani mobility is tied to the use of gasoline-operated canoes, which are unsustainably mined at the cost of their lands, health, and economy. In most of the Amazon, motor canoes are the only method of transportation. However, these gas-powered canoes are not sustainable. Most conventional boat motors emit nearly 30% of their unburned gas and oil mixture into the water. Meanwhile, most canoe operators add oil every few days to their engine, dumping used oil into the river in the process. Solar technology is advancing quickly for high-end recreational boats, and it can provide an affordable, clean, silent and reliable means for local river transportation and artisanal fishing worldwide.

**Method:** A coalition of Waorani and Kichwa communities with Ecuadorian and American universities has gen-

erated a socially embedded model to co-produce sustainability knowledge and solutions. This model emerges from long-standing relationships between Indigenous communities of the Ecuadorian Amazon and research institutions. Combining ancient and modern knowledges will catalyze technological innovation as evidenced by a functioning solar-powered electric canoe prototype and charging station. Our team's diverse backgrounds and expertise promotes respectful, relevant, reciprocal, and responsible collaborations.

**Benefit:** Once the prototype meets expectations and requirements it will be implemented to be used regularly by indigenous communities across the Amazon and beyond. Our adaptive innovation on existing technologies promotes cultural resilience by preserving travel by waterway. This disincentivizes deforestation by dissuading the development of roads through the Amazon.





## THE INLAND BLUE SPACE DIARY RESEARCH PROJECT: RECORDING THE MENTAL HEALTH AND WELL-BEING OUTCOMES ASSOCIATED WITH VISITING FRESHWATER ENVIRONMENTS

**Overview:** Set in Scotland, where there is an abundance of lochs, rivers, and canals, this research project seeks to understand the impact of blue spaces exposure for specific communities within the Scottish population, such as those who were considered Clinically Extremely Vulnerable to COVID-19 and those who are significantly affected by flooding events.

**Context:** Freshwater environments have long been associated with therapeutic properties; however, these environments are not yet used as public health resources. To incorporate freshwater areas into public health policy and practice, research is required to demonstrate the longer-term potential of these environments for promoting positive wellbeing outcomes at the individual and societal level.

**Methods:** Diaries were designed by a research team from Stirling and Heriot-Watt universities and participants from across the country recorded diary entries relating to their blue space visits over a three-month period and experiences. The diary research has created

an extensive database of blue space experiences within Scotland. The research is set within a broader ongoing mixed-methods research approach, with the diary findings helping to guide the direction of future research.

**Benefits:** The methodology fostered a participatory research approach, enabling participants to share experiences in a manner that suited them and at a time and place of their choosing, without being prompted by a researcher. As a result, the research captured detailed and varied accounts of environmental interactions



## **TIR GLAS (TRANS. GREEN LAND): A MINORITY CULTURE INITIATIVE THAT AIMS TO REVITALIZE RURAL WEST WALES AND TRANSFORM**

**Overview:** Initiated by the community in the rural market town of Lampeter, Tir Glas is about a university pivoting its provision to respond to some of the important challenges of the Anthropocene by focusing on local food and timber. Drawing on the area's rich bilingual culture, Tir Glas is about revitalizing the local economy by using its resources in a truly regenerative way.

**Context:** Lampeter is a market town in a rural, Welsh-speaking area - a location that cherishes its native, minority-language culture, - and the home of the oldest university in Wales. In response to looming environmental threats, community groups in the region asked the University of Wales Trinity Saint David to lead in shaping a relocalised economy, where training and education was delivered just as much by local groups and businesses as by academics.

**Method:** Tir Glas represents a transformation in pedagogy by embedding active practice-based learning within a humanities-informed curriculum to provide an education that equips students with the skills to respond to the rapidly

evolving environmental crisis. The aim is to develop a food community and to create graduates who understand the culture, heritage and ethics of food production from source to table. The trans-disciplinary curriculum will provide students with opportunity to work with local food practitioners.

**Benefit:** This project seeks to develop a model for humanities-driven sustainability science education that blends experience, practice and theory. It recognises the importance of listening to and learning from local knowledges and integrating these into pedagogies for the future.

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## MAÇÃO: CO- CONSTRUCTING SUSTAINABILITY TO MANAGE WILDFIRES

**Overview:** Working closely with the local community and drawing upon their deep knowledge of the territory and their understanding of how forestry management has been disrupted by demographics shifts, this project has co-developed strategies to design a future that helps locals negotiate the increasingly destructive wildfires that local communities are struggling to negotiate.

**Context:** Mação is a village in the centre of Portugal, in a region of low demographic density. This region is characterized by an ageing population. It is also severely affected by recurring fires exacerbated by coalescing and impacting factors such as abandonment of traditional forest-based economic activities, growing drought and global warming. Mação today is part of the UNESCO Global Learning Cities Network and holds a UNESCO Chair in Humanities and Landscape management. The discussions that led to the establishment of UNESCO-BRIDGES started here in 2019.

**Method:** This project emerged after more than two years of discussion and

debate. Alongside direct and permanent engagement with over 20% of the community, the project was coordinated by the local municipality and gathered information by further extensive consultation and participation with the community through schools, senior clubs, the local landowners' association, several local NGOs, museums and memory spaces.

**Benefits:** This project represents a major investment in culture and education which designs a future not as a reenactment of the past, but as a new reality: a pragmatic utopia in landscape management. The outcome at this stage is a major programme that supports the community to manage fires and face climate stress through the design of a strategy of Integrated Actions of Landscape Management. The strategy ensures the protection of ecological diversity whilst securing economic revenue through the merger of traditional knowledge and scientific innovations, anchored in social and cultural cohesion.





## TURN IT AROUND! YOUTH VISIONS OF CLIMATE FUTURES

**Overview:** “Turn it Around!” Is an initiative that invites young artists to radically (re)imagine futures and produce a deck of cards designed to challenge policymakers, politicians, and educators to think, see, and act in new ways during this time of ecological crisis. By flipping who teaches, this project is a reminder that everyone – and everything – must change.

**Context:** Climate disruption threatens all life on earth, yet there is much we can do to turn it around. Education is an important part of the solution, but education itself must undergo a radical transformation to ensure sustainable and ecologically just futures.

**Method:** Activated through social media networks, this initiative is crowd-sourcing art and text responses to several prompts such as asking youth to imagine ideal learning environments, share their everyday actions that contribute to a livable future on Earth, explain why climate education is critical for their learning, or share where they find hope and resilience in facing the uncertain future. Original submissions were curated, printed, and distributed to world

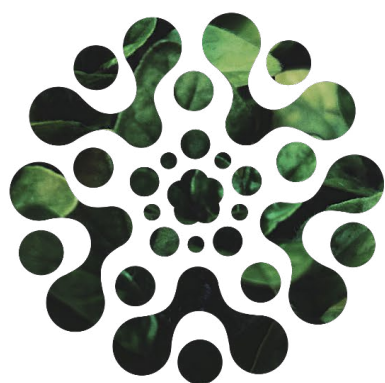
leaders at UN Climate Change Conferences (2021, 2022), UN Transforming Education Summit (2022), UNESCO Transforming Education pre-summit (2022), and other global events. All resources are open access and could be used for advocacy and teaching/learning. New submissions are continuously published on the project website.

**Benefit:** Unlike the traditional flashcards, the cards in this collection are designed not only to introduce new ideas, but also to shift and shuffle existing knowledge and practice, which may have been forgotten, ignored, or even erased from curriculum in schools and universities. By challenging the established knowledge categories, structures, and systems, the initiative helps us to radically (re)imagine the role of education in responding to the ecological crisis.

This project is produced by Arizona State University and the Artists’ Literacies Institute.

<https://turnitaroundcards.org>





# the fifth element

## THE FIFTH ELEMENT: REFRAMING THE ROLE OF RESEARCH FOR SOCIETY

**Overview:** This project asks questions to encourage action-oriented discussions and co-create transformative agendas for regenerative research and innovation. By rethinking the role of research and innovation (R&I), this project hopes to encourage a move away from helplessness and towards responsibility and regenerative practices.

**Context:** Academic research struggles to address today's crises. This is due to a range of factors including the way questions are framed, academic institutions relate to society, and the siloed research which is performed with minimal connection to transformation. It is an epistemological crisis leading to an ontological crisis for research.

**Method:** Simply accelerating R&I is not sufficient or appropriate if it remains anchored to consumption and growth over wellbeing. Questions emerging from the ground - from communities and ecosystems facing existential threats - can reframe problems and solutions, enabling it to become a vector for global equity in a healthy planet.

This approach moves forward by asking some critical questions.

- What does it mean to be a responsible researcher / innovator / entrepreneur today?
- How do we best put our research, innovation, and design capacities at the service of communities facing the challenges on the ground?
- How can research be redesigned to be more transformative and regenerative?

Addressing these questions requires moving beyond existing scientific and technological activities if the outcomes are to benefit humanity.

**Benefit:** This approach aims to break free from limiting assumptions and embrace interconnectedness and interdependence. It seeks to unite scientists and civil societies for regenerative innovations, ensuring wellbeing for all in a healthy planet. By incorporating youth, women, and indigenous people in the process, it builds trust in science as a servant of society, securing humanity's future within the web of life.



## THE CLAM GARDEN NETWORK

**Overview:** Clam gardens are ancient intertidal features constructed by coastal First Nations of British Columbia (Canada) and Native Americans of Washington State and Alaska (USA). The Clam Garden Network is a diverse community of Indigenous and non-Indigenous knowledge holders including academics, community members, researchers, and resource managers from British Columbia, Washington State, and Alaska. Together, we celebrate, promote, and seek to uphold the cultural and ecological importance of clam gardens and traditional seafood management.

**Context:** Clam gardens enhance the production of culturally important seafoods and have been a part of Indigenous food systems for at least 4000 years. Today, Indigenous Peoples throughout the Pacific Northwest are reclaiming clam garden construction, management, and related cultural practices to enhance food security and sovereignty, support and assert rights and title in coastal and ocean spaces, and revive ancestral teachings and practices. Clam gardens and other culturally important beaches have a legacy as places of learning. While out on the shoreline together, elders, youth,

and other community members reflect on teachings, observations and stories about marine systems, cultural values, cosmology, economics, and the importance of family.

**Method:** The Clam Garden Network embraces different ways of knowing, shares ideas, and uses various research approaches, tools, and data to build knowledge about people and intertidal resources. We celebrate, promote and uphold clam gardens because they are a focal point to advance Indigenous rights and governance, inter-generational knowledge, and food security in the face of climate change.

**Benefits:** Our goals are to: build solidarity and cooperation across people, communities and disciplines; support clam garden restoration; stimulate conversation and learning that challenge predominantly Western ways of doing science and resource management; and work in ways that respect Indigenous community self-determination and resurgence. For more please visit [www.clamgarden.com](http://www.clamgarden.com)





## FÔLEGO (BREATH)

**Overview:** The name Fôlego (Breath) comes from the association of the territory in the central region of Portugal (Pinhal Maior) with fire, but also from the air necessary both for combustion and life. The project seeks to open up opportunities for breathing and reflecting on the personal and collective growth that artistic tools and engagements can bring.

**Context:** The philosophy of the project was to encourage people in the participating communities to address the climate crisis and other entangled social and environmental challenges, by taking greater control – and responsibility for – the fate of the region. The project was situated across five Portuguese municipalities in the Pinhal Maior region – Mação, Oleiros, Proença-a-Nova, Sertão and Vila de Rei – where the already changing climate is bringing significant environmental challenges, not least an escalation in wildfires. Climate Change, environmental awareness, and sustainability became the overarching themes that linked the reality of the original five municipalities with the project's Norwegian and Icelandic partners.

**Method:** Fôlego enables the sharing of resources, spaces and artistic experiences among local communities, whilst

ensuring that their distinctive identities, traditions and heritage are respected. Through residencies and the circulation of the project elements and training initiatives, the populations of the municipalities were meaningfully involved in the processes supporting the sustainable development and continuing resilience of the region. By reducing the gap between specialized and local knowledges, the social and environmental problems have served as a unifying force for creative dialogue among artists, regional authorities, scientists, local citizens, educators, youth and those interested in tourism, agriculture and other activities that depend, economically and culturally, on the territory's essential resources.

**Benefit:** The project helped develop a sense of belonging and social cohesion among diverse stakeholders based on the idea of territorial regeneration. A training programme, in which entrepreneurs, artists, teachers, researchers and students were engaged, has laid the groundwork for continuing and perpetuating the impact of this work in the future.

## **PARTNER ORGANIZATIONS AND MEMBER INSTITUTES INVOLVED IN THE BRIDGES VISIONING AND ESTABLISHMENT PROCESS**

United Nations Educational Scientific and Cultural Organization (UNESCO), Management of Social Transformation Programme (MOST), International Council for Philosophy and Human Sciences (CIPSH), Humanities for the Environment Global Observatory Network (HfE), International Science Council (ISC), Arctic Studies Centre – Liaocheng University, Arizona State University Global Futures Laboratory (ASU-GFL), Catharsis, Centre des Politiques de la Terre (Earth Politics Centre) – Université Paris Cité, Cappadocia University Environmental Humanities Center, Climate Change and History Research Initiative – Princeton University (CCHRI), The Club of Rome, Faculty of Arts – Mount Royal University, Faculty of Humanities – University of Gothenburg, The Environmental Humanities Hub – University of Helsinki, French National Research Institute for Development (IRD), Future Earth, Human Ecodynamics Research Center – City University of New York (HERC-CUNY), Humanities European Association for Culturally Integrated Landscape Management (APHELEIA), Integrated History and Future of People on Earth (IHOPE), International Center for Human Sciences-Byblos (CISH), International Council on Monuments and Sites (ICOMOS), International Federation for Modern Languages and Literatures (FILLM), International Union of Prehistoric and Protohistoric Sciences (UISPP), Institut fondamental d'Afrique noire (IFAN), Institute for Advanced Studies in the Humanities

– University of Edinburgh (IASH), Kogi People – Kogui-Malayo-Arhuaco Indigenous Reservation, Martynas Mazvydas National Library of Lithuania, Nordic Network for Interdisciplinary Environmental Studies (NIES), North Atlantic Biocultural Organization (NABO), Penn Program in Environmental Humanities – University of Pennsylvania (PPEH), School of Environment, Education and Development – University of Manchester, School of Humanities – University of Iceland, The Sigtuna Foundation, Stefansson Arctic Institute (SAI), Stockholm Resilience Center – Stockholm University (SRC), Swedish Centre for Biodiversity – Swedish University of Agricultural Sciences, Uppsala, Swiss Academic Society for Environmental Research and Ecology (SAGUF), Tairona Heritage Trust (THT), The Third Pole/Earth Journalism Network, UNESCO Chair on Art and Science for the SDGs – ICN Business School, UNESCO Chair on Borders and Migrations – Universidade Federal de Santa Maria, UNESCO Chair on Global Understanding for Sustainability – Jena University, UNESCO Chair in Humanities and Cultural Integrated Landscape Management – Instituto Politécnico de Tomar, Centre for Higher Education Transformations – University of Bristol, University of Wales Trinity St. David, Uppsala University Chair on Climate Change, World Academy of Art and Science.





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Y Drindod Dewi Sant  
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