



STABILISATION AGRICULTURE

Exploring regenerative agroecological relationships in fragile environments that support inclusive, responsive and peaceful human settlements.

Coventry
University 

Research Centre
for Agroecology, Water
and Resilience



Our Stabilisation Agriculture programme is an integral part of the Centre for Agroecology Water and Resilience (CAWR). Our research contributes to an understanding of how diversified food and farming landscapes and livelihoods can reduce vulnerabilities to both natural hazards and human-induced disasters. We apply regenerative agroecological principles and practices in areas of political, social and ecological fragility. In this way, our research considers how to establish more resilient food and water systems, and strengthen relationships between people and the landscapes upon which they depend.

Our research demonstrates that agroecological practices are highly effective in absorbing the impacts of flooding and high winds, stabilising crop yields during periods of drought, enabling more rapid post-disaster recovery, and fostering social processes to improve adaptive capacity and social cohesion in divided societies.

In both rural and urban environments, we apply a regenerative lens to disaster prevention, preparedness, response and recovery.

In relation to the pressing challenges that require more focus in an era of ecological crisis, we map, design, and evaluate applied systems related to:



Facilitating transitions in forced displacement settings



Adaptive co-management of stresses in agroecosystems



Social farming & peacebuilding in divided societies



Landscape rehabilitation for disaster risk reduction (DRR)



Urban food systems design for rapid-onset disaster planning



OUR FOCUS

The majority of people in fragile environments depend on farming livelihoods. Many are also affected by histories of violence, exclusion and structured poverty. This, alongside the deepening climate crisis, exacerbates vulnerabilities to both rapid- and slow-onset disasters, and is further compounded by the chronic erosion of locally-rooted knowledge systems. These factors combine to drive increasing numbers of people onto marginal lands and into ever more precarious livelihoods, heightening their exposure to cycles of risk.

Our work emphasises the role of human agency to collectively restore and sustain relationships for resource stabilisation, while exploring approaches capable of transforming the underlying factors that hold poverty and marginalisation in place.

To foster more stable and equitable social-ecological relationships, our transdisciplinary research is people-centred, place-based, and conflict- and gender-sensitive. Through empirically grounded research, the co-generation of new insights aims to promote:

- A re-valuation of knowledge to enhance critical capacities and responsiveness.
- Capabilities in practice-led learning for adaptive resource co-management.
- The inclusion and participation of the most vulnerable in decision-making.
- A strengthening of multi-actor networks for equitable resilience.
- Coherence between relief, rehabilitation and development outcomes.



Contaminated waste water discharge from camp in N. Iraq.



FACILITATING TRANSITIONS IN FORCED DISPLACEMENT SETTINGS

Design and evaluation of regenerative systems

In recognition of the seasonal extremes and realities experienced by people in displacement camps, our applied research also involves designing and/or retrofitting sustainable infrastructure for cost-effectiveness and minimal disruption. This includes, for example, the use of shelterbelts, sustainable drainage systems (SuDS) and the recovery and reuse of solid and liquid organic wastes.

Promoting agroecology for urban production

Even small gardens play an important role in providing nutritional supplements to basic humanitarian food aid packages, and a sense of dignity, continuity and place. Here we increasingly consider the therapeutic value of associated psycho-social processes as a response to traumas experienced.

Regenerative livelihood opportunities

We investigate transitions from humanitarian relief to rehabilitation and development through regenerative processes for sustainable food production and livelihoods. These processes engage displaced people, host communities and ex-combatants in integrated resource-use design that reduces both social tensions and damage to the host environment.



Drainage ground work, Gawilan Camp, N. Iraq



Domiz Camp garden, N. Iraq



Tree nursery for shelterbelts, fruit, animal forage and land stabilisation. Kenya.





ADAPTIVE MANAGEMENT OF STRESSES IN AGROECOSYSTEMS

Invasive plants, trees and insects place immense pressures on land-use, and can cause tensions between different communities of resource users. Our applied research on the management of natural (biotic) stressors includes their adapted use as alternative sources of nutrition and livelihoods, such as charcoal production. Responses to human-induced (abiotic) stressors involve the rehabilitation of polluted natural resources, or phytoremediation after artisanal mining. Using participatory approaches, stressors are mapped, their associated risks are assessed, and approaches are co-developed on their utilisation, management or eradication.



SOCIAL FARMING AND PEACEBUILDING IN DIVIDED SOCIETIES

This research area investigates entrenched patterns of social division and conflict, and the transformative potential of agroecology as a practice-based tool for peacebuilding. Here we consider the role of collaborative processes such as social farming, trading and collective resource management to enable equitable resilience and the re-forging of relationships based on solidarity, reciprocity and trust.





Post-cyclone landslides and rock flows in Chimanimani, Zimbabwe



LANDSCAPE REHABILITATION FOR DISASTER RISK REDUCTION

Here we investigate vulnerabilities to hazards and risk, and explore local knowledge, technologies and practices that have the potential to increase resilience to the predicted rise in threat occurrence. Our applied research in landscape stabilisation supports the restoration of ecological resources at catchment level, while promoting multi-actor engagement for long-term planning and the co-management of natural resources for effective disaster risk reduction (DRR).



Vulnerable cities – Kathmandu, Nepal.



URBAN FOOD SYSTEMS DESIGN FOR RAPID- ONSET DISASTER PLANNING

This area of our work investigates how food systems design enables urban and metropolitan areas to be more resilient to rapid-onset disasters (such as earthquakes, volcanoes and conflict) that threaten to cut off access to vital food and water supplies. Our research shows, for example, that resilient, local and low-impact food systems, unlike long supply chains, are more equitable and less vulnerable to disruption and crisis.

OUR RESEARCH EXPERIENCE

Our experience in Stabilisation Agriculture builds on 30 years of applied research on disaster risk reduction (DRR); crop varieties for low input agriculture; environmental management of hazards and risk including appropriate annual and perennial crop varieties for drought and saline conditions; sustainable drainage systems (SuDS); climate change adaptation; human displacement; seed and food sovereignty; organic value chains and markets in conflict zones, and peacebuilding.



Landscape-scale agroecology, with contoured terracing successfully slowing and sinking surface water run-off, and reducing soil loss and the likelihood of landslides.

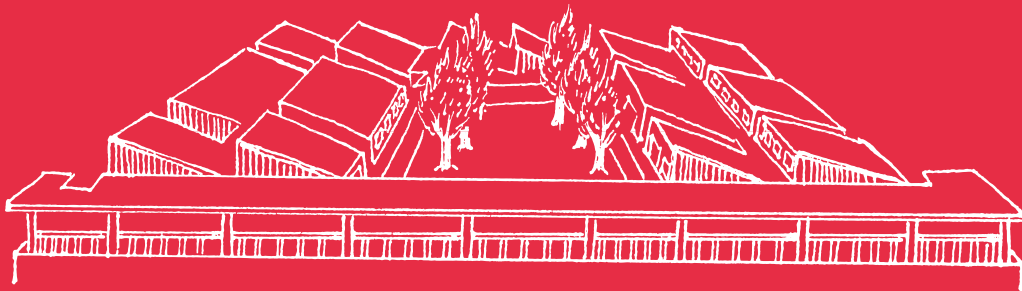
OUR RESEARCH COLLABORATIONS

- Within CAWR: Stabilisation Agriculture crosses all our research themes and disciplines, drawing on a range of expertise in the natural and social sciences as well as the arts and humanities.
- Across Coventry University: we collaborate with other research centres and faculties, such as the Centre for Trust, Peace & Social Relations (CTPSR), Global Education, Learning & Attainment (GLEA), the Disaster Management Unit, and Architecture to enhance interdisciplinary working and learning.
- Internationally: we collaborate with social partners, from social movements to non-governmental organisations, and with local and national governments and international institutions.



OUR RESEARCH OUTCOMES:

- The participation of at-risk groups in the design of social-ecological systems that are more responsive to stresses and shocks.
- Multi-actor governance strengthened to support the creation of peaceful, inclusive, safe, responsive and resilient human settlements.
- Enhanced cross-disciplinary learning that engages the border zones between the academy, public sector and civil society, and between theory and practice, knowledge and human agency.
- Students prepared, through full and part-time postgraduate studies (MSc & PhD), for academic and professional engagement.



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For more information on our work in Stabilisation Agriculture, please visit:

[www.coventry.ac.uk/research/areas-of-research/
agroecology-water-resilience](http://www.coventry.ac.uk/research/areas-of-research/agroecology-water-resilience)

Or to enquire about Stabilisation Agriculture Programme, please contact:

Centre for Agroecology, Water and Resilience
Coventry University
Ryton Gardens, Wolston Lane
Ryton-on-Dunsmore
Coventry CV8 3LG
United Kingdom

Tel: +44 (0) 24 77 651 679
Email: cawroffice@coventry.ac.uk