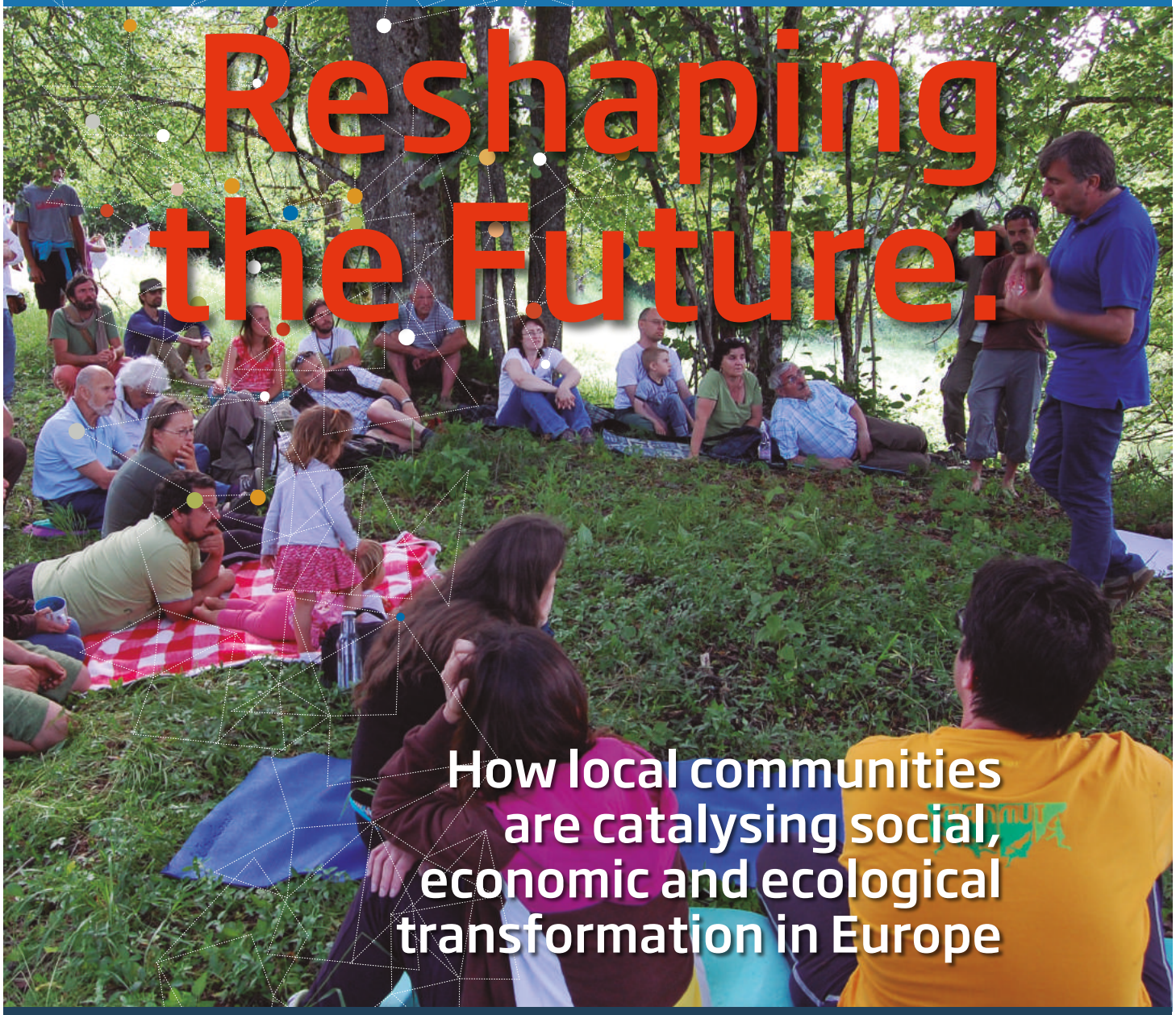
STATUS Report 2019

The First Status Report on Community-led Action on Sustainability and Climate Change in Europe

Reshaping the Future:



How local communities are catalysing social, economic and ecological transformation in Europe

EUROPEAN NETWORK
FOR COMMUNITY-LED
INITIATIVES ON CLIMATE CHANGE
AND SUSTAINABILITY

ECOLISE

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Contents

Figures and Tables

1. Background and Methodology

The **Status Report on Community-led Action on Sustainability and Climate Change in Europe** takes a step towards making visible the state of the art of knowledge and understanding about community-led action on sustainability and climate change across Europe. Methodologically, it pioneers inclusive and open source methods, by facilitating collaborative effort in the compilation and synthesis of relevant information on the part of a transdisciplinary community of creators, users and communicators of knowledge. This first (2019) edition is the outcome of a first trial of these methods, which future versions will aim to deepen and extend. A call for involvement in this ongoing process is presented at the end of this report.

Community-led initiatives (CLIs) on sustainability and climate change across Europe are diverse in scope and focus but they all incorporate experimentation and learning. **Photo: Grow Observatory**

1.1 History and Rationale

ECOLISE is a European wide network of community-led sustainability initiatives, legally founded in 2014. At the time of writing, it has 43 member organisations in 21 European countries. Most members are national and international representative organisations of community-led sustainability initiatives, predominantly but not exclusively connected to the ecovillage, permaculture and Transition movements. Members also include the ICLEI network of local authority sustainability initiatives, along with several supporting organisations contributing specialised skills in areas such as research, education, communication and process facilitation.

Knowledge and Learning is a key organisational pillar of ECOLISE. This reflects the importance of formal and informal learning processes to the work of all its member networks and initiatives and the prospect that these processes can be strengthened by involvement of specialised research institutions. The Status Report was initiated within the ECOLISE Knowledge and Learning pillar by two specialised members in the research field: the Science Faculty at Lisbon University and the Schumacher Institute for Sustainable Systems, an independent research institution based in Bristol, England, in 2017. It partly builds on two earlier efforts: the *Europe in Transition* report created as part of preparatory work for founding ECOLISE in 2013, and the report *A Community-led Transition to a Sustainable Europe*, released to coincide with the first European Day of Sustainable Communities (EDaySC) in 2017. Production of the second EDaySC brochure, *Local, community-led: a new future unfolding,* in 2018 prototyped use of material compiled for the Status Report as draft content for other publications, a key feature of the open source methodology being developed within the Knowledge and Learning Team.

The Status Report project itself has two main aims:

1. To provide a comprehensive and scientifically rigorous account of the documented extent, nature, impacts and potential of community-led initiatives (CLIs) in Europe, incorporating relevant academic studies, grey literature, practitioner records and informal and experiential knowledge, to inform policy, advocacy, practice, and future research.
2. To establish an active, self-organising knowledge co-creation community that collaborates on an inclusive, open source basis to maintain, update, extend and deepen the knowledge base on which the Status Report draws, in a way that also makes this knowledge base available for other uses.

Both these aims contribute to the wider goal of creating and maintaining a knowledge commons for community-led action on sustainability and climate change, including a wiki, document library and other shared resources for collaborative documentation, sharing, synthesis and communication of knowledge. Production of this document, the first iteration of the Status Report, has piloted use of these tools and methods, as an initial exploration of the potential of commons-based knowledge production to contribution to wider processes of societal transformation.

1.2 Overview and Objectives

This report intends to examine the status of community-led action on sustainability and climate change in Europe and the prospects for existing movements of community-led initiatives to contribute to wider transformation to a fairer and more sustainable society, both within Europe and in terms of Europe's relationships with the rest of the world.

The Status Report addresses a series of objectives:

- Describe the overarching context for community-led action, in terms of major societal challenges and international policy responses to these.
- Report the extent, nature and scope of community-led initiatives across Europe: their numbers, locations, motivations, methods and achievements.
- Evaluate how community-led initiatives pre-empt, respond to and/or fulfill major policy goals at European and national level, and examine the challenges and barriers they face in doing so.
- Explore the processes behind their achievements: the conceptual frameworks, guiding narratives and practices from which they arise, including how they challenge assumptions and understandings

behind centralised and top-down policy initiatives and provide working examples of realistic alternatives to existing frameworks.

- Assess the potential contributions of community-led initiatives to a wider societal transformation towards sustainability and democracy, including the social and cultural changes this might imply.
- Examine the structural changes necessary to allow such a transformation and propose concrete policy measures that would enable it.

A key guiding observation is that community-led action presents a constructive and necessary challenge to predominant understandings of major issues such as climate change and sustainability, and provides access to alternative perspectives that highlight routes out of current policy impasses. Deep and close engagement with the experience and practice of community-led action, in other words, can help inform the changes of perspective necessary for a realistic understanding of current societal challenges and creation of workable alternatives to ineffective existing policy measures.

While resourcing and capacity limitations mean that this first edition only partly fulfils these objectives, they remain a valid set of working principles for what is intended to be an iterative, ongoing initiative that will benefit from a wider base of input into future editions. This represents a planned process towards emergence of a new form of knowledge co-creation involving community-led initiatives.

1.3 Community-led Initiatives and Research

Community-led initiatives (CLIs) all incorporate experimentation and learning, and many undertake their own research. Despite the prospects this raises for fruitful relationships between community-led initiatives and research, power imbalances and cultural differences affecting the ways formal research is resourced and conducted mean this has yet to reach its full potential. However, recent years have seen several key initiatives that seek to address this, including major new formal research projects and attempts by key networks of CLIs to develop their own research capacity.

1.3.1 Research about, with, for and by Community-led Initiatives

Combining Stephen Sterling's framework of three levels of sustainability education[1] with the distinction between Mode 1 (detached) and Mode 2 (engaged) science[2] allows us to identify three major forms of research involving community-led initiatives:[3]

- **Research about CLIs**: using conventional methodologies, with all aspects of the research process determined by the interests and capabilities of professional researchers attached to universities and other formal institutions (Mode 1).
- **Research with CLIs**: co-designed and jointly executed by CLIs and professional researchers using a range of participatory methodologies, seeking to address practical needs and interests of CLIs as well as academic questions and recognising the skills and knowledge of CLIs and people within them as equally important as those of academics (Mode 2).
- **Research by and for CLIs**: initiated by CLIs in response to their own self-determined needs and interests, generally deploying existing social processes and action learning methodologies and with academic researchers involved (if at all) in support of these practical aims.

More tentatively, in relation to the concept of autopoiesis as a form of self-organisation in complex systems, these three forms have been characterised in relation to the activities of CLIs as, respectively, allopoietic (independently organised), heteropoietic (mutually supportive separate systems), and autopoietic (interdependent and mutually generative).[4]

Research in all three of these modes has been, and remains, important in advancing knowledge about CLIs and directly informing practical and strategic action.

1.3.2 Research about Community-led Initiatives (Mode 1)

CLIs of all kinds have provoked much interest among academic researchers at all levels, who have initiated their own projects in which CLIs are the topic or object of research. Such studies can provide very useful insights, in particular when they provide overviews and detached, integrated and/or comparative perspectives that might not be easily accessible to participants in CLIs themselves. In addition, many CLIs lack the time, energy, skills and/or inclination to document and evaluate their work effectively, which researchers working in a Mode 1 orientation may be able to provide.

A downside to working this way is that research can become a drain on the time, energy and resources of CLIs, sometimes providing little or no tangible benefit in the short or long term. Accumulated experiences of this kind have led some CLIs and movements of CLIs to become wary of researchers and reluctant to become involved in research. Others have created guidelines or established conditions under which they will and will not collaborate with researchers.[5]

On the other hand, some CLIs who have hosted researchers have found inherent value in the experience. This is particularly the case when researchers integrate their data collection into the activities of the group via participant observation or other collaborative methods. A temporary supportive participant in a group may provide a welcome change in the social dynamic, and interviews with a researcher can provide participants with opportunities to pause and reflect on their work in ways they might not otherwise have done.

Recognising the potential value of research, and seeking to create conditions that favour mutually beneficial collaboration, some CLIs take active steps to accommodate researchers. For example, Christiania Ecovillage in Copenhagen maintains a research house to offer accommodation to visiting researchers.

Important Mode 1 research projects and programmes involving CLIs include:

Grassroots Innovations

A largely UK-based research programme led by Sussex University and the University of East Anglia examining community-scale projects as experimental niches prefiguring and helping to bring about wider change.

Towards European Societal Sustainability (TESS)

The EU-funded TESS Project sought to assess the success, limitations and upscaling potential of community-based sustainability initiatives and identify factors affecting these. Based on case studies of 63 CLIs in six European countries, it provided important insights into key areas such as contributions of community-led initiatives to greenhouse gas emissions reductions, and the social and economic impacts of community-led initiatives.

Failure and Success of Transition Initiatives (FaST)

A comprehensive global survey of local initiatives in the Transition movement conducted at Reading University provides important insights into patterns of growth, success, stagnation, decline and failure of initiatives and general factors that influence these.

Research in Degrowth

A wide-ranging programme by researchers associated with the Degrowth movement at Barcelona Autonomous University and other institutions, providing an in-depth and comprehensive theoretical framework for understanding the nature of, prospects for and barriers to inclusive transitions to sustainability, backed up by numerous case studies and analyses of community-scale transformative initiatives. It also includes substantial elements of Mode 2 and Mode 3 research (see Chapter 2.3.1).

Seeds of Good Anthropocenes

Documenting community-scale projects worldwide that demonstrate Anthropocene consciousness in action (see Chapter 2.2).

Transformative Social Innovation Theory (TRANSIT)

The EU-funded TRANSIT project developed a new middle-range theory of transformative social initiatives. Although using Mode 1 approaches, having been designed and directed by researchers, the core research team's strong familiarity with and support for case study networks meant academic aims were closely aligned with needs for new understanding on the part of the networks themselves. As a consequence, results have been of significant conceptual and strategic importance to participating CLIs, and the project shows certain qualities of Mode 2 research.

1.3.3 Research with Community-led Initiatives (Mode 2)

Although still rarely supported by funding programmes or institutional priorities of conventional research organisations, Mode 2 research is becoming increasingly common as researchers and CLIs find ways to collaborate productively. Whether initiated by researchers within established institutions or CLIs themselves, such collaborations increase the potential capacity of CLIs to mobilise knowledge and undertake learning in support of their practical ambitions. They are also potentially transformative of research itself, offering a new set of priorities, ethical orientations and methodologies that enable research to contribute directly to goals relating to social and environmental justice.[6] [7]

Key examples of Mode 2 collaborations include:

Monitoring and Evaluation of Sustainable Communities (MESC)

MESC arose from discussions, facilitated by the Transition Research Network, between Transition Network and sympathetic academics, concerning the monitoring and evaluation needs of Transition, both for local initiatives and at network level. The result was a collaboration between researchers at Oxford University's Environmental Change Institute and representatives of Transition Network and the Low Carbon Communities Network, all operating as co-researchers on an equal basis. The 18-month project took a participatory action research approach, working with various local initiatives in the UK to assess and determine how to address their monitoring and evaluation needs. It produced a set of guidelines on monitoring and evaluation for community initiatives[8] along with various academic papers.[9] [10]

Climate Change Research at FCiencias.ID, Lisbon University

The Climate Change Impacts and Modeling research group (CCIAM) at Lisbon University emphasises use of participatory methods as a means of supporting incremental and transformative change in both understanding of and action for climate change adaptation.[11] FCiências works closely with national networks of CLIs, particularly in permaculture and Transition, supporting national initiatives such as RedeConvergir, employing practitioners as action researchers within collaborative projects and creating and maintaining a permaculture garden, Horta FCUL, within the grounds of the Science Faculty. Through the BASE research project, it coordinated production of the first two books in the Community-led Transformations book series, collaboratively produced volumes on Permaculture and Climate Change Adaptation[12] and Resilience, Community Action and Societal Transformation.[13] Key current projects include production of this report, providing research support to the Municipalities in Transition project (see chapter 3.6.1), and BEACON, a European project that is supporting municipalities to design mitigation strategies, build competences in governance and collaboration and help implementation of local projects.

The GROW Observatory

GROW is a major international collaboration within the EU's Horizon 2020 research programme, led by Dundee University and involving ECOLISE members Cultivate and the Permaculture Association (Britain) as full partners. It combines conventional and citizen science methods, with small-scale growers in various areas gathering data for their own use, for sharing locally, and to feed into a broad aggregate database used by agricultural scientists to observe and analyse broad patterns.

Knowledge Exchange on Enterprise and Permaculture (KEEP)

A collaboration between the Permaculture Association (Britain) and Kingston University Business School, KEEP undertook a preliminary survey and assessment of permaculture-inspired enterprises in the UK. In no small measure due to the influence of CLIs, academics working in formal institutions increasingly seek to make their values visible and conduct research with transformative potential.

An influential paper by a large consortium led by Ioan Fazey at Dundee University sets out "ten essentials for second-order transformation research",[14] illustrated in Figure 1.1.

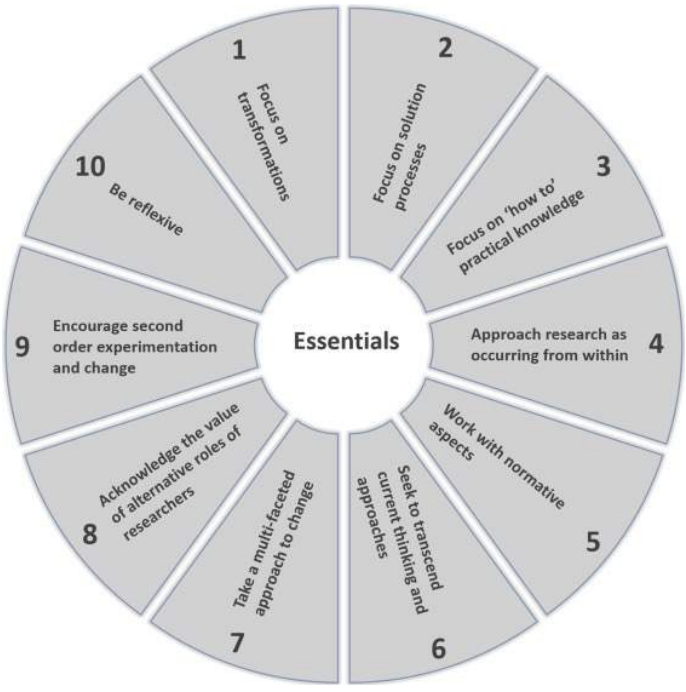

Figure 1.1 Ten Essentials for Second-Order Transformation Research

Similarly, a joint policy brief released by the TESS, ARTS and PATHWAYS FP7 projects advocated stronger emphasis on collaborative research in future EU research:

> *"Science needs to shift from only understanding the problems to prescribing and identifying solutions together with societal actors."*[15]

1.3.4 Research by and for Community-led Initiatives (Mode 3)

Recognising the importance of deepening and strengthening existing methods and processes in experimentation, research and learning, many movements and networks of CLIs have sought to develop their own research capacity. This can take place in a number of ways: extending (and often formalising) existing methods for action learning, activists within CLIs developing formal research skills by taking research degrees and through other methods, qualified researchers 'going feral'[16] to work within CLIs as specialised practitioners, and CLI organisations and networks recruiting people with research skills to voluntary or salaried posts.

Transition and Research

Transition Network included workshops on research in its annual conferences in 2010 and 2011. From these emerged the Transition Research Network, which based on learning from experiences, positive and negative, of collaborations between Transition groups and researchers, developed methodologies and protocols for mutually beneficial relationships.[17] These drew extensively on permaculture design and other social methodologies already in use within the Transition movement.[18]

Independently of these developments, Transition founder Rob Hopkins undertook much of his early work in Transition Town Totnes as a PhD study at Plymouth University.[19]

Permaculture and Research (also see chapter 3.3.3)

The Permaculture Association (Britain) began active development and implementation of its research strategy in 2009, building on action learning cycles already embedded in permaculture design methods.[20] Independent research on the part of permaculture practitioners has been supported through creation of a research handbook.[21] The Permaculture International Research Network, with several hundred members (including researchers, practitioners and various hybrids of the two) in over 60 countries worldwide was officially launched at the International Permaculture Conference in London in September 2015.

Ecovillages and Research (also see chapter 3.2.7)

The Research Working Group of the Global Ecovillage Network (GEN) provides a contact point for researchers that approach ecovillages or GEN itself. It supports networking, coordination and integration of research, dissemination and creation and implementation of protocols for ecovillage research.[22] In 2018 GEN published a draft Ecovillage Impact Assessment, an evaluation framework based on the UN's Sustainable Developmental Goals.[23]

1.3.5 ECOLISE Knowledge and Learning

Building on insights and experiences, direct and indirect, from the above and many similar initiatives, preparatory discussions for the founding of ECOLISE that began in 2013 identified Knowledge and Learning as one of three initial strategic pillars. In fact, significant momentum towards establishment of ECOLISE arose from the TREE Project, an unsuccessful application for FP7 funding led by FFCUL (the previous incarnation of FCiencias.ID) and with partners including Transition Network, Global Ecovillage

Network, Gaia Education and the Schumacher Institute, all of whom later became ECOLISE founding members.

Along with organisations directly representing national and international networks of CLIs, ECOLISE also includes various specialised members whose core expertise is in research, including FCiencias.ID, the Schumacher Institute and DRIFT. It also closely links with Mode 3 initiatives such as the Transition Research Network, Permaculture International Research Network and GEN Research Working Group, and other research-related activities of members who directly represent networks of CLIs.

This report is an early output of a knowledge commons for community-led action on sustainability and climate change being created to support more effective co-creation of knowledge and its mobilisation to support action and policy advocacy throughout the network of ECOLISE members, supporters and collaborators, as a core resource within the Knowledge and Learning pillar.

2. Context: Sustainability, Policy and Societal Transformation

Community-led initiatives (CLIs) take action on issues ranging from the local to the global in scope. Many are active in areas covered by the United Nation's Sustainable Development Goals (See 2.1.2 below).
Photo: Municipalities in Transition

2.1. Sustainability as a Policy Driver

Sustainability has been a significant influence on governmental and intergovernmental policy and action since the 1970s, and the focus of major global agreements for the past several decades. The most recent outcomes of this process include the Paris Agreement on Climate Change and the UN's Sustainable Development Goals. Both these initiatives, and the growing influence of sustainability as an outlook, shape in important ways the actions of key actors such as governments, businesses and civil society, including community-led initiatives.

2.1.1 Historical Emergence of Policy Interest in Sustainability

Sustainability issues began to enter popular and political consciousness during the 1960s and 1970s as a critical response to the post-WW2 rise in mass consumption in industrialised countries, its export to the rest of the world via 'development', and increasing concerns as to the deleterious environmental and social effects, raised in seminal and influential works such as Rachel Carson's *Silent Spring*, E.F. Schumacher's *Small is Beautiful*, and the *Limits to Growth* report produced by the Club of Rome.

Limits to Growth provided detailed analyses and models of the current situation and potential future consequences of depletion of limited non-renewable resources, including minerals and fossil fuels, and accumulation of pollutants, including greenhouse gases. It predicted that continuation of present-day trends would lead to transgression of biophysical limits, declining industrial output and eventual collapse of industrial society over the course of the 21st Century, and outlined various alternative scenarios that could avoid this.[24] Reassessment of the findings by both the original team and independent analysts show their findings and projections largely to have been borne out, raising genuine concerns over the consequences if prevalent trends are not reversed.[25] [26] [27] [28]

Concerns with sustainability began to exert significant influences over international policy from around the same time. In 1972 the first United Nations Conference on the Human Environment took place in Stockholm, leading to the signing of the Stockholm Declaration.[29] The Stockholm Declaration includes 26 principles and 109 recommendations to protect the environment and promote human wellbeing, and represented the first recognition in international law of the need for environmental protection. In 1987, the UN World Commission on Environment and Development (also know as the Brundtland Commission) produced its report *Our Common Future*,[30] which introduced for the first time the concept of Sustainable Development as an attempt to reconcile ongoing development with needs for environmental sustainability. Although widely criticised for effectively subordinating environmental concerns to the prevailing political and economic model, the Brundtland Report brought attention to sustainability, at least in principle, into mainstream policy agendas.[31]

At the 1992 Earth Summit held in Rio de Janeiro (Brazil), the Convention on Biological Diversity, the Framework Convention on Climate Change and the Convention to Combat Desertification were opened for signature, entering into force a few years later. This important summit also brought to life Agenda 21, an action plan for local governments to achieve sustainable development. The Rio Declaration, a precursor of the Earth Charter that had been initiated some years before by members of the Club of Rome, was transformed into a citizens' initiative and finally approved by UNESCO in the year 2000. Also in 2000, 189 governments adopted the Millennium Declaration, which included commitments relating to sustainable development within its eight Millennium Development Goals.[32] [33]

The 2002 World Summit on Sustainable Development (also known as Rio+10) in South Africa adopted the Johannesburg Declaration, with a particular focus on the severe threats to sustainable development.[34] At Rio +20 (2012), also known as the UN Conference on Sustainable Development and again in Rio de Janeiro, the UN released a non-binding document entitled *The Future We Want*, endorsed by 192 governments.[35]

Over the same period, climate change became a focus of international policy concern with creation of the Intergovernmental Panel on Climate Change, with a mandate to provide a scientific view of climate change and its ecological and socio-economic impacts, in 1988.[36] In 1994 the United Nations Framework Convention on Climate Change (UNFCCC) entered into force with nearly global membership (196 countries). In 1997 the Kyoto protocol, the world's first greenhouse gas emissions reduction treaty, was adopted, entering into force in 2005.

2.1.2 Key Current Policy Initiatives

Sustainable Development Goals

The Sustainable Development Goals (SDGs) were initially conceived at the 'Rio+20' United Nations Conference on Sustainable Development in 2012. The resolution and publication *Transforming our world: the 2030 Agenda for Sustainable Development* was subsequently accepted by 193 countries on September 25th

2015.[37] [38] The SDGs replaced and updated the Millennium Development Goals (MDGs), which were in place for 15 years from 2000.[39]

The process of creating the SDGs was more inclusive than any previously conducted by the UN, involving participatory events all over the world. They aspire to be more widely relevant, and comprehensive in scope, and incorporate mechanisms for monitoring and accountability.

Numerous overlaps and potential synergies are evident between community-led initiatives and the SDGs, with many CLIs already active, and effective in areas covered by the SDGs (Chapter 6.1). This suggests that bottom-up local-scale action provides an important potential implementation vehicle for the SDGs, and a challenge to some of their limitations. On the other hand, the SDGs offer an opportunity to mainstream and/or upscale ideas and action originating at community scale.

Paris Agreement

The Paris Agreement was an outcome of the 21st international Conference of the Parties (CoP) on Climate Change in December 2015, and the culmination of nearly 30 years of work on the part of the Intergovernmental Panel on Climate Change (IPCC) towards an international consensus concerning timely and effective action on climate change.[40] The Paris Agreement significantly raises levels of concern and ambition compared with the Kyoto Protocol, its immediate predecessor, and aims to keep the average rise in global temperature within a limit of 2ºC above pre-industrial levels, and ideally within 1.5ºC. Although welcomed by the international climate action community, the Agreement was also widely criticised for its failure to specify implementation pathways or draw attention to structural lock-ins in existing political and economic systems.

A subsequent IPCC special report released in 2018 sought to increase further the levels of urgency, emphasising the importance of staying within the 1.5ºC limit and calling for a stronger global response to the threat of climate change, integrated with ongoing efforts towards sustainable development and eradication of poverty.[41] The Climate Emergency global initiative calls all elected leaders, at all scales, to "declare a climate emergency and initiate a society-wide mobilisation".[42] ECOLISE was among a number of organisations to respond to this global call for climate emergency in the run-up to CoP24, and issued its own statement urging further mobilisation at community level to address climate change, along with support for community-led action rather than business as usual on the part of governments. In launching the call on behalf of the network at CoP 24 itself, ECOLISE president Robert Hall said:

> *"Many thousands of communities across the globe, from community energy cooperatives to community-supported farms, social enterprises and zero-waste initiatives, are effectively and creatively responding to the global climate emergency. Now we need government leaders to do the same. We call on them to take decisions here at CoP24, in Poland, that produce real results. We need recognition of the catastrophic negative consequences of business as usual. We need decisions that will deliver for the world's communities and citizens. We also call on leaders to recognise, enable and support the bold, creative action already being taken by communities. As a follow-up to the Talanoa dialogue process, we call on governments to give voice to communities by declaring an International Day for Sustainable Communities."*[43]

2.1.3. Community-led Initiatives and Sustainability Policy

Community-led initiatives (CLIs) arise whenever people self-organise in the places where they live to take action on issues that concern them. These issues may range from local to global in scope, and often bridge these levels of scale. They may, for example, address local sustainability issues directly and at the same

time consider them in global context, or pay attention both to the direct local impacts of climate change and its global causes and solutions. As well as being effective and important in their own right, they often inspire other people, within their home communities and elsewhere, to question and transform their ways of thinking, acting and being in the world.

Understanding community-led action on climate change and sustainability is also important from a scientific perspective. CLIs are important agents in the shifts in interlinked social and technical configurations in key societal domains such as energy, water and transport that are necessary for sustainability.[46] Improved understanding of CLIs - what they do, their impacts, and the factors that enable and constrain their effectiveness - can help inform wider questions of appropriate technological choices and governance methods for society-wide transitions to sustainability.

CLIs are also important to the science and practice of social-ecological resilience. Community-level innovations can increase adaptability and resilience, in ways that both directly affect local-level prospects for navigating social, environmental and economic changes and affecting the prospects for wider transformation.[47]

2.2 The Anthropocene

Increasing numbers of scholars now recognise the present time as a distinct geological epoch, the Anthropocene, in which human impacts significantly and unavoidably affect ecological conditions all over the world.[44] The Anthropocene raises new, complex and often unprecedented challenges, of many kinds: ecological, cultural, socio-political, socio-technical and economic. In light of this, scientists from many different disciplines are now calling for a shift in the premise of global governance to one of planetary stewardship.[45]

CLIs represent a pre-emptive response, at local levels, to this call for planetary stewardship. Arising and existing across Europe and focusing on a huge range of local and global issues, they take many different forms (Chapter 3 introduces several key movements). Building and mobilising community through diverse partnerships and innovative actions, their work is a vital complement to high-level political action on climate change and sustainability. Through their work towards creating low carbon alternatives to existing lifestyles, local economies and other societal structures, directly reducing emissions of greenhouse gasses and fostering independence from the fossil fuel economy, they can make significant contributions to effective, inclusive and pluralistic implementation of the Paris Agreement (Chapter 6.1). Their work often addresses themes relevant to the Sustainable Development Goals (Chapter 6.2), and can provide innovative ways to implement the goals at local level. Their work also challenges, in important ways, some of the assumptions behind both the Paris Agreement and SDGs: particularly in highlighting the benefits of alternative transition trajectories involving fundamental changes in political and economic structures and towards more inclusive, equitable and democratic alternatives.

2.2.1 Anthropocene as Political Geology

An increasing volume of evidence shows that human activity now has observable and functionally significant effects, at global scales, on a wide range of biophysical and geophysical factors, including soil composition, mineral deposition, concentrations of atmospheric gases, species extinction rates, biogeography and structure of ecological communities.[48] Some analysts even consider human impacts now

to outweigh non-human factors in their influence on the basic conditions for life, a shift sufficiently profound to mark the transition from the Holocene to a new geological era, the Anthropocene.[44]

Both the validity of the Anthropocene concept and the timing of its onset are highly controversial topics among geologists. Proposed dates range from (possibly human-induced) changes in vegetation cover and disappearance from the fossil record of various large animals at the end of the Pleistocene, the Neolithic Revolution around 10,000BC, through the onset of the industrial age and widespread use of fossil fuels since the late 18th Century to the first tests of nuclear weapons in 1945. The choice is not merely one of scientific interpretation of the relative geological significance of various changes, but a deeply political one reflecting different understandings as to the nature and significance of relationships between human populations and their environments under different social and technological conditions.[49] [50]

These debates also affect proposals as to appropriate responses to new, complex and often unprecedented challenges characteristic of the Anthropocene: socio-political, economic, cultural, ecological and socio-technical. Scientists from many different disciplines are now calling for a shift in the premise of global governance to one of planetary stewardship.[45] However, social scientists have cautioned against the introduction of generalising narratives and stressed the need to allow space for multiple interpretations of the Anthropocene.[51]

2.2.2 Political Economy of the Anthropocene

Some writers have criticised standard narratives on the social implications of the Anthropocene as overgeneralised and historically naive: in particular, that they give insufficient attention to the specific historical role of capitalism in bringing about the present condition of planetary crisis.[52] Jason Moore sees the Anthropocene as the product of processes that accelerated sharply after the Industrial Revolution, but had their roots in the earlier history of capitalism's global expansion since the age of Columbus.[53] He considers this period to be conceptually marked by self-differentiation from nature, which for the first time made nature available as a resource for exploitation and commodification, and suggests the 500-year period culminating in the recognition of the Anthropocene be labelled the 'Capitalocene'.[54]

Building on this, Armerio and De Angelis point out that the Anthropocene's physical effects are not confined to geology, but are also evident in the very bodies of its human subjects, particularly those exposed to the effects of its toxic wastes. They consider various grassroots mobilisations for environmental justice on the part of such victims as examples of a new revolutionary movement characteristic of the Anthropocene. For example, protests by people affected by toxic waste dumping in Campania, Italy culminated in the constitution and mobilisation of communities actively engaged not only in dissent, but in creation and enactment of new forms of civic engagement via public assemblies, ultimately leading to the election to the municipal authority of a radical leftist coalition committed to grassroots democracy.[55]

Delanty and Mota also stress that the Anthropocene is far more than a geological phenomenon, but is a fundamental reconfiguration in understanding of the relationship between the human and natural worlds requiring new concepts of history, agency, knowledge and governance, including opening the political space for implementation of various post-carbon technologies.[56] Community-led initiatives, in our view, can be seen as enacting these insights, by drawing attention to the status of the era of widespread use of fossil fuel energy, and the worldviews, forms of knowledge and approaches to governance that characterise it, as historical and cultural anomalies, overcoming which requires proactive efforts located at or beyond the fringes of contemporary society.[57] [58] [59] [60]

2.2.3 Community-led Initiatives and the Anthropocene

Various studies and analyses stress the role of bottom-up action at community scale in understanding and responding to the unique challenges represented by the onset of the Anthropocene.[61] According to one analysis, numerous existing "community economies" can collectively be viewed as constituting an emerging grassroots Anthropocene economics taking account of non-human as well as human needs. Their own forms of innovation and experimentation and contributions to those of academic researchers combine to create 'hybrid research collectives' dedicated to eco-social regeneration through action learning and action research.[62]

A study conducted within the Future Earth programme identified over one hundred "Seeds of a Good Anthropocene" in the form of transformative community-scale projects worldwide. Located on all continents and covering a range of different areas of activity, they have in common that they seek to reconfigure relationships between humans and nature in order to express and enact participants' desired visions of the future. Recognising that many such visions and associated actions will come into play during the transition to an ecologically viable and socially desirable Anthropocene society, the project seeks to understand the diversity of such responses and how they might interact synergistically to generate positive change at larger scales.[63]

Recognising that the aims of the Transition movement (Chapter 3.1), particularly as grounded in the philosophy and practice of permaculture (Chapter 3.3), amount to a material reconfiguration of local settings in order to take adequate account of human embeddedness within wider ecological processes and hence interdependence with nature, Martindale has suggested that Transition initiatives could adopt local-scale geo-engineering as a component of practical action towards an Anthropocene society. Unlike proposed processes for planetary-scale geo-engineering, these can ensure local retention of benefits and visibility of feedbacks, and allow full and democratic involvement of affected local people in their design, implementation, monitoring and ongoing regulation.[64]

Pointing out the historical associations between major shifts in broad social-ecological and socio-technical configurations and predominant cultural understandings of health and healthcare regimes, Zywert has suggested that currently dominant hi-tech and resource-intensive approaches to healthcare are likely to prove incompatible with the circumstances and demands of the Anthropocene. Potential alternatives that could prefigure new approaches to health consistent with Anthropocene reality can be found outside the formal healthcare system, in social movements (including Transition, ecovillages and Degrowth) and surviving traditional approaches that take holistic views of health and provide integrated, community-centred forms of understanding and action, embedded in understandings of local and global social-ecological interdependencies. Nurturing such alternatives in order to prepare them to replace existing regimes once the latter become inviable appears a more viable long-term strategy that attempting to perpetuate the status quo.[65]

2.3 Sustainability Beyond Growth

A key insight in sustainability politics concerns the distinction between 'environmentalist' thought, which seeks to achieve sustainability within existing social, political and economic structures, and 'ecologism', which maintains that sustainability can only be achieved through radical transformations of existing systems. Theoretical and empirical evidence increasingly discredits the former and supports the latter

position, as fundamental incompatibilities between existing systems and the needs for sustainability become increasingly apparent.[66]

Central to this replacement of environmentalist by ecologist thinking is the body of scholarship, developed since the *Limits to Growth* report, that reveals a basic incompatibility between continued economic growth - specifically, growth in GDP – and sustainability.[67] [68] The most authoritative and comprehensive of these post-growth critiques, by Tim Jackson, points out that beyond a certain level continued GDP growth ceases to translate into improvements in any accepted indicators of social welfare, but remains strongly coupled with increasing resource depletion, pollution and other forms of environmental impact. Jackson identifies movements of community-led initiatives working at local scale to create new post-growth economic alternatives as the basis for the necessary transition beyond growth, and argues for various major changes in macro-economic policy that would support this.[69]

2.3.1 Degrowth

A key link between post-growth scholarship and practical action by community-led initiatives is Degrowth, which originated as an intellectual debate in 1970s France and experienced a revival from the late 1990s on with a wave of practical action and accompanying critical scholarship centred around the city of Lyon in Southwest France. During the first decade of the twentieth century, the concept was adopted by environmental and anti-capitalist movements in Italy, Catalonia and elsewhere in Spain.[70] It has since grown into an increasingly international movement, leading by 2018 to major international conferences in Malmö, Sweden and Mexico City and a Post-growth conference at the European Parliament.

François Schneider and colleagues offer this definition of Degrowth:

> *"Sustainable degrowth may be defined as an equitable downscaling of production and consumption that increases human wellbeing and enhances ecological conditions at the local and global level, in the short and long term."* [71]

The authors note that the term 'sustainable' is not used to imply that the process of degrowth should be sustained indefinitely, rather that it seeks an end state that is environmentally and socially sustainable. Many theorists also point out that Degrowth is not simply about the cessation of growth, or reduction in GDP, though both of these are likely consequences.

According to Giorgos Kallis, Federico Demaria, and Giacomo D'Alisa:

> *"Degrowth signifies a society with a smaller metabolism, but more importantly, a society with a metabolism which has a different structure and serves new functions."* [72]

Additionally:

> *"In a degrowth society everything will be different: different activities, different forms and uses of energy, different relations, different gender roles, different allocations of time between paid and non-paid work, different relations with the non-human world."*[72]

Schneider and colleagues identify five distinct philosophical, practical, political and/or intellectual sources for degrowth:[71]

- The culturalist source - anthropologists and others criticising the imposition of the developmental model and trajectory experienced by Europe and North America onto the rest of the world.

- The democratic source - promoting a broadening of debate over the nature of economic and political systems, breaking the hold of vested short-term economic interests over politics, technology, education and information.
- The ecological source - respect for and defense of ecosystems and living beings.
- The existential source - emphasising the search for meaning through the range of lifestyle possibilities opened up by a degrowth agenda, including through approaches such as spirituality, non-violence, art, community and voluntary simplicity.
- The bioeconomic source - also known as ecological economics, based on biophysical limits on provision of resources and metabolism of wastes.

A key observation in degrowth debates concerns the need to open up spaces for democratic debate and action about the desirable aims of society and ways to achieve these, which have been undermined by an unquestioned mainstream political consensus in favour of growth.[73] [74] Degrowth as a political philosophy thus highlights the need for revision of the institutions, practices and assumptions of liberal democracy as they currently exist, and creation of new political structures and philosophies that are neither the product of nor dependent on the growth paradigm and allow decentralised, inclusive and pluralistic processes of democratic deliberation.[75]

2.3.2 Community-led Initiatives as Practical Action for Post-Growth

While most strongly developed as a form of critical scholarship, Degrowth exists in close partnership with, and in order to support, civil society movements for social and environmental change. An effective post-growth agenda needs to achieve reductions in the levels of material and energetic throughputs necessary for acceptable quality of life, through simplification of economic and social processes of the types pioneered by many community-led initiatives and enabled by macro-scale changes in social and regulatory contexts.[76]

Giacomo D'Alisa and colleagues describe Degrowth as a form of engaged scholarship that provides diverse social movements with an interpretative frame or set of ideas that help make sense of specific local actions and link them to wider social, political and philosophical themes. They draw attention to the diversity and fluidity of civil society action, both in terms of aspirations (ranging from conservative to transformative) and strategies. Strategically, they particularly distinguish a continuum linking 'civil' actors seeking to work within existing frameworks of organisation and action, and mobilise or leverage relatively high levels of social capital and legitimacy within these, and 'uncivil' actors openly challenging and operating outside or in opposition to prevalent societal norms. They locate actors operating within the degrowth frame at all points along this continuum, and suggest that the co-existence of diverse and compatible perspectives and approaches, each with its own set of limitations and risks, is a possible source of synergies that can enhance the collective potential for transformative action. Specific movements include Transition, ecovillages and cohousing projects, along with protests against centralised development initiatives in both the Global North and Global South that seek to perpetuate the growth imperative and associated patterns of social metabolism (flows of energy and materials).[74] [77] Chapter 3 describes some key such movements of community-led initiatives.

3. Overview of Community-led Action on Sustainability and Climate Change in Europe

This chapter describes some of the major networks and movements of community-led initiatives active in Europe. These movements are not discrete, but have a great deal of overlap in ideas, activities, people and organisations involved. They are increasingly collaborating at all levels from local up to international, and reaching out across sectors to create partnerships with local government, businesses and other stakeholders committed to a more sustainable, inclusive, democratic and fair society.

One of the major movements of community-led action in Europe is that of permaculture, which is a design system for creating sustainable systems (see 3.3 below). **Photo: Permaculture Association**

3.1 Transition

Transition is a movement of local initiatives working towards greater resilience in their home communities in response to environmental, social, economic and other challenges. It was initially framed as a structured local response to peak oil, climate change and, especially since the 2008 financial crisis, economic

instability. As it has spread and been adopted in diverse places around the world, it encompasses an increasing range of issues, often the local manifestations of global problems.

3.1.1 History of the Transition Movement

Transition originated in 2004 as a study project by students on a two-year permaculture design course at Kinsale Further Education College in Ireland led by permaculture teacher Rob Hopkins.[58] Shortly afterwards Hopkins relocated to Totnes in southwest England, where he co-founded Transition Town Totnes in September 2006. Inspired by this work, communities elsewhere began to take up the Transition model, first across the UK and Ireland, then in various other countries across the world.[78]

In 2007, Transition Network was founded as a coordination and support body for the growing movement. Transition Network developed and offers its own programme of Transition Training, compiles and shares information via its website and other media, and facilitates meeting and discussion processes via online resources and events including conferences and workshops. It also undertakes and supports conceptual and strategic discussion about the nature of Transition and shape and direction of the movement through various processes of reflection, planning and redesign, both internal and in collaboration with other key groups and organisations in the movement.

As Transition initiatives began in other countries, many formed national Transition hubs to coordinate their work nationally. Transition Network increasingly shares coordination, governance and other roles with the national hubs network.[79] From 2013, Transition Network and various representatives of national hubs played key roles in the discussion and planning processes that led to the formation of ECOLISE, a pan-European network of community-led sustainability initiatives. When ECOLISE was formally constituted in 2014, its founder members included Transition Network and a number of national Transition hubs.

3.1.2 Principles of Transition

The Transition Network website describes the following values and principles underlying Transition:[80]

Head, Heart & Hands

Doing Transition successfully is about finding a balance between these:

- **The Head:** we act on the basis of the best information and evidence available and apply our collective intelligence to find better ways of living.
- **The Heart:** we work with compassion, valuing and paying attention to the emotional, psychological, relational and social aspects of the work we do.
- **The Hands:** we turn our vision and ideas into a tangible reality, initiating practical projects and starting to build a new, healthy economy in the place we live.

Principles

Transition is an approach rooted in values and principles. These are described slightly differently in different parts of the movement, but broadly:

- We respect resource limits and create resilience – the urgent need to reduce carbon dioxide emissions, greatly reduce our reliance on fossil fuels and make wise use of precious resources is at the forefront of everything we do.

- We promote inclusivity and social justice – the most disadvantaged and powerless people in our societies are likely to be worst affected by rising fuel and food prices, resource shortages and extreme weather events. We want to increase the chances of all groups in society to live well, healthily and with sustainable livelihoods.
- We adopt subsidiarity (self-organisation and decision making at the appropriate level) – the intention of the Transition model is not to centralise or control decision making, but rather to work with everyone so that it is practiced at the most appropriate, practical and empowering level.
- We pay attention to balance – in responding to urgent, global challenges, individuals and groups can end up feeling stressed, closed or driven rather than open, connected and creative. We create space for reflection, celebration and rest to balance the times when we're busily getting things done. We explore different ways of working that engage our heads, hands and hearts and enable us to develop collaborative and trusting relationships.
- We are part of an experimental, learning network – Transition is a real-life, real-time global social experiment. Being part of a network means we can create change more quickly and more effectively, drawing on each other's experiences and insights. We want to acknowledge and learn from failure as well as success – if we're going to be bold and find new ways of living and working, we won't always get it right first time. We will be open about our processes and will actively seek and respond positively to feedback.
- We freely share ideas and power – Transition is a grassroots movement, where ideas can be taken up rapidly, widely and effectively because each community takes ownership of the process themselves. Transition looks different in different places and we want to encourage rather than unhelpfully constrain that diversity.
- We collaborate and look for synergies – the Transition approach is to work together as a community, unleashing our collective genius to have a greater impact together than we can as individuals. We will look for opportunities to build creative and powerful partnerships across and beyond the Transition movement and develop a collaborative culture, finding links between projects, creating open decision-making processes and designing events and activities that help people make connections.
- We foster positive visioning and creativity – our primary focus is not on being against things, but on developing and promoting positive possibilities. We believe in using creative ways to engage and involve people, encouraging them to imagine the future they want to inhabit. The generation of new stories is central to this visioning work, as is having fun and celebrating success.

3.1.3 Diffusion and Growth of the Transition Movement

Precise data on the numbers, locations and impacts of Transition initiatives are not available due to the rapid growth of the movement, the lack of clear boundaries concerning what constitutes a Transition initiative and who is involved, inconsistency in the extent to which local initiatives connect with coordinating organisations such as Transition Network and national hubs, and the patchy distribution of formal research effort. Transition Network maintains a global register of initiatives on its website, which in early 2018 had around 1000 entries.[81] This list is based on self-registration, and almost certainly includes fewer than the total number of initiatives as many do not register this way. The Transition Network website lists national hubs in 25 countries: USA, Sweden, Spain, Slovenia, Scotland, Romania,

Portugal, Norway, Mexico, Netherlands, Luxembourg, Latvia, Japan, Israel, Italy, Ireland, Hungary, Germany, France, Denmark, Croatia, Chile, Brazil, Francophone Belgium and Argentina.[82]

The first academic survey of the Transition Movement reported that in February 2009 there were 94 initiatives in the UK and around 40 elsewhere, principally in the USA, Australia and New Zealand.[83] Data provided directly by Transition Network showed that as of July 2009 there were 186 formally registered initiatives (up from 106 in October 2008), plus over 800 'mullers' (nascent Transition initiatives that had not yet been granted 'official' status by Transition Network, a process that is now defunct). The majority of initiatives in both categories were in the UK and Ireland, with significant numbers in other industrialised Anglophone countries (USA, Australia and New Zealand), with smaller numbers in Canada, continental Europe, Asia, Latin America and South Africa (the only African country represented at the time).[78] An independent survey conducted in mid-2012 identified contact points for 1179 Transition initiatives, not all registered on the Transition Network website, in 23 countries.[84]

Table 3.1. Numbers of Transition Initiatives Over Time

Date	Number of Initiatives	Number of Countries	Source
Oct 2008	106 'official'		Data provided by Transition Network, reported in[78]
Feb 2009	94 in UK and Ireland, 40 elsewhere		Data provided by Transition Network, reported in[83]
July 2009	186 'official' (plus 800+ 'mullers')		Data provided by Transition Network, reported in[78]
mid-2012	1179 with traceable contact point	23	Data scouring by researchers at Reading University[84]
Sept 2013	1130	43	Transition Network website, reported in[85]

Growth of the Transition movement has been uneven in both space and time. Perhaps unsurprisingly given its origins in Ireland and England and the preponderance of English-language literature and learning materials, initial growth was most marked in these two countries, followed by other parts of the Anglophone world. Establishment of national hubs in non-Anglophone countries capable of bridging linguistic divides, establishment of an international and multilingual network of trainers qualified to deliver Transition training and translation of key documents, including The Transition Handbook, into other languages, have all helped international diffusion.

Patterns of diffusion are also non-uniform within countries or regions, and locally. A global survey conducted in 2012 concluded that less than half of responding Transition initiatives are representative of diversity within their community.[84] Geographical distributions of local Transition initiatives in UK (England/Wales), Germany, Italy and France, which collectively included 48 per cent of known Transition initiatives worldwide in 2012, show a marked clustering, with clear hotspots and 'cold spots' in each country.[86] In England, this clustering effect became the basis of efforts on the part of Transition Network to support creation of regional hubs.

Patterns of diffusion of Transition differ from country to country. Comparative and country case study research suggest that common diffusion mechanisms and processes can be identified in different places. However, outcomes of these processes are all highly sensitive to differences of context, so the patterns of diffusion that arise vary from country to country, and from place to place, according to specific details. A detailed examination of the spread of Transition in the USA shows it to depend on all three major channels of diffusion identified in the social movements literature: relational (based on personal contact and relationship-building among teachers, seekers and brokers of knowledge within and across localities), non-relational (based on written and other media and learning materials that allow inspiration and guidance in the absence of personal contact) and mediated (based on specific forms of instruction, support and guidance such as Transition Training and the various books and other how-to media created by Transition Network).[87] Detailed studies from Britain and Italy confirm this finding, and show that country-specific geographical patterns of diffusion recur across social movement: diffusion of Transition in Italy for example, shows a similar pattern to that of Solidarity Purchasing Groups in that country, different from that of Transition in Britain.[88]

Aggregated data from UK, France, Italy and Germany show a steady decline in the annual rate of growth (i.e. establishment of new local initiatives), from nearly 180 percent in 2007 to around ten percent in 2014.[86] Recent consolidation of data on UK initiatives held by Transition Network suggested their number to have declined from around 430 that at some point registered with Transition Network to 260 that maintained an active contact point by late 2017. Some theorists have pointed out that this fits the adaptive cycle pattern of change in complex systems documented in resilience theory, which includes regular phases of decline followed by reorganisation and renewal.[89]

Disappearance or decline of Transition initiatives can reflect different trajectories. The 2012 survey by Reading University showed a marked and predictable tendency for inactive initiatives to report lower levels of success than active initiatives.[84] However, many Transition initiatives operate within an ecology of local grassroots action that mostly takes place outside the initiative itself.[90]

3.2 Ecovillages

Ecovillages are (usually) intentional communities that operate on a shared set of ecological, social and/or spiritual values, with sustainability as a common concern. They consciously seek to create and enact working models of sustainable living combined with social wellbeing and (in many cases) spiritual growth. As a movement, ecovillages self-organise as the Global Ecovillage Network, with regional networks around the world and national networks in numerous countries.

3.2.1 Definitions of Ecovillage

The first use of the term 'ecovillage' is thought to be in a 1991 report by Diane and Robert Gilman commissioned by Hildur and Ross Jackson of the Gaia Trust documenting leading examples of sustainable human settlements from around the world. They defined an ecovillage as:

> *"A human scale, full-featured settlement, in which human activities are harmlessly integrated into the natural world, in a way that is supportive of healthy human development and can be successfully continued into the indefinite future."*[91]

These key aspects can be summarised as follows (adapted from Bang, 2005):[92]

- Human scale (between 50 and 500 people)
- Holistic settlement, including food production, manufacture, leisure, social life and commerce (not necessarily completely self-sufficient or isolated from wider society)
- Harmless integration of human activities into the natural world (cyclical, rather than linear relationship with nature)
- Supportive of healthy human development (balanced and integrated approach to fulfilling human needs: physical, emotional, mental and spiritual)
- Sustainable - able to continue indefinitely into the future

Hildur Jackson suggested that, while useful because it emphasises the importance of local and community action, this definition understates important social and spiritual aspects, without which it could lend itself to an eco-fascist interpretation. She offered a more esoteric characterisation, in which the four elements of earth, fire, air and water respectively represent the key dimensions of ecology, social structure, culture/spirituality and infrastructure.[93] She and Karen Svensson describe ecovillages as follows:

> *"Ecovillages embody a way of living. They are grounded in the deep understanding that all things and all creatures are interconnected, and that our thoughts and actions have an impact on the environment ... The deep motivation ... is to reverse the gradual disintegration of supportive socio-cultural structures and the upsurge of destructive environmental practices on our planet."*[94]

The Global Ecovillage Network website offers the following current definition:

> *"An ecovillage is an intentional or traditional community using local participatory processes to holistically integrate ecological, economic, social, and cultural dimensions of sustainability in order to regenerate social and natural environments."*[95]

3.2.2 History of the Ecovillage Movement

Ecovillages can be seen as a modern-day manifestation of a history of counter-cultural intentional communities dating back hundreds or even thousands of years.[96] [97] Their concerns with environmental sustainability build on longer-standing movements such as bioregionalism, land stewardship and communitarianism.[6]

The ecovillage movement in its present-day form emerged out of scoping and networking initiated by the Gaia Trust from the late 1980s onwards. Following release of the Gilmans' *Eco-villages and sustainable communities* report in the summer of 1991, Ross and Hildur Jackson convened meetings of ecovillage residents at their nascent ecovillage at Fjordvang in Western Denmark, in 1991 and 1994, and in 1993 formed the Danish Ecovillage Network, the first such national network. Participants in the 1994 meeting agreed to form a new network, which hosted a major conference at Findhorn Ecovillage in Scotland in 1995.[98] Delegates at the Findhorn conference agreed to name the new network the Global Ecovillage Network (GEN).[99] GEN has since grown to encompass thousands of projects around the world, with regional networks in Africa, Europe, Latin America, North America, and Oceania/Asia.

A research report by the TRANSIT project summarises the relationship between GEN and the wider ecovillage movement as follows:

> *"While GEN was founded as a formal, international network with regional and thematic subnetworks, the ecovillage movement has always been a bottom-up movement, carried by a variety of single ecovillages. On*

the one hand, GEN is active in education, networking and information dissemination with political organisations like the EU and UNESCO. On the other hand, GEN provides a platform for support and exchange for the local ecovillages and welcomes not only new founded villages of the environmental movement but also traditional villages."[100]

3.2.3 Scope of the Ecovillage Concept

As well as intentional communities in both Global North and South, the Ecovillage movement also includes established communities and traditional villages in the Global South, where village living and subsistence-focused local economies are not the distant memories they are for many in the Global North. In some Global South cases, ecovillages have become alternative models for development on large scales. A major example is the 'thousand villages' project in Senegal, part of the Senegalese government's strategic development policy.[101] [102]

Despite the rural connotations that the term might infer, ecovillages have also been created in urban environments such as Inner City Los Angeles.[60] Some urban sustainable living projects such as Lilac Co-Housing in Northern England,[103] while not ecovillages as such, can be seen to fit with the most widely accepted definitions.[104] Similarly, urban permaculture has been described as a form of "distributed ecovillage",[105] while some writers see the more urban-focused Transition movement as a relative mainstreaming of ecovillage philosophy and practices.[106] [107] Beyond Europe, the TRANSIT report also highlights the strength of the ecovillage movement in Latin America, Africa and Asia, and the creation by the Senegalese government of a ministry for ecovillages that supports traditional villages to become ecovillages.[100]

3.2.4 Numbers of Ecovillages in Europe

According to the TRANSIT research report on ecovillages, in 2017 GEN listed a total of 1000 ecovillages worldwide, 130 of these in Europe, while the Eurotopia directory of intentional communities listed 430 in Europe, of which an indeterminate number are ecovillages.[100]

3.2.5 Ecovillages and Sustainability

A 2018 study reviewed 27 separate research projects covering more than 60 ecovillages in order to identify ten criteria and 119 indicators (actions) in different categories and dimensions (social, ecological, economic and cultural). On this basis, it proposes a framework for all communities that would like to identify and develop as Ecovillages, based on ten criteria:[108]

1. Protection and conservation of the environment
2. Provision of appropriate and sustainable habitats (climate design)
3. Social, individual and spiritual capital
4. Healthy lifestyle, both physically and spiritually
5. Mechanisms for saving energy and resources
6. Self-reliance and support of the local economy
7. Water and wastewater management

8. Waste management
9. Human development and capacity building
10. Foresight

Ecovillages are also working actively towards the Sustainable Development Goals. A series of impact assessments conducted by GEN in 29 showcase ecovillages on five continents showed that the vast majority are already contributing in concrete ways to achieving the SDGs. In relation to ecological impacts, 97% of showcase ecovillages are actively working to restore degraded ecosystems (SDG15), 90% sequester carbon in soil and/or biomass (SDG13), and 97% work to restore or replenish water sources and cycles (SDG6). In terms of social impacts, all ecovillages provide education in sustainability-related fields (SDG4), women occupy at least 40% of decision-making roles in 90% of cases (SDG5), all nurture local traditions relevant to sustainable methods of building and food production (SDG11 on sustainable communities), 90% reuse or recycle over half their waste and 85% compost all food waste (SDG12 on responsible production and consumption), 80% have established conflict resolution procedures and 100% provide training in decision-making and mutual empowerment (SDG16 on responsible institutions, peace and justice), and 95% participate in campaigns to protect the rights of humans and nature (SDG17 on partnership).[23]

3.2.6 Ecovillages and Wellbeing

Ecovillager Robert Hall has identified twenty key factors that allow ecovillages to provide high levels of wellbeing for residents while maintaining use of natural resources at levels far lower than in the population at large and therefore much closer to sustainable limits. These are: pooled economy, shared work, work-life balance, inclusive decision making, conflict resolution, limited hierarchy, dimensioned communal group, celebration, new values and common worldview, deeper personal relationships and openness, physical contact, child-centred perspective, self-development practices, inclusiveness, emphasis on arts and culture, healthy food, physical activity, proximity to nature, environmental activism and ecologically responsible behaviours. Ecovillages thus represent largely successful experiments in promoting sustainable wellbeing that could support and inform efforts by national governments to foreground wellbeing as a policy goal.[109]

A university study compared subjective wellbeing of 84 residents of 30 ecovillages (and other intentional communities) in North America with those of Burlington, Vermont, a city in the USA reputed to offer residents a very high quality of life. Results indicated slightly higher perceived quality of life among residents of intentional communities, despite markedly lower average levels of personal income and ownership of material goods. Quality of life in intentional communities correlated far more weakly with indicators of material affluence such as income, access to healthcare and levels of education, and more strongly with quality of social relationships, equitable allocation of workloads and access to collective resources. This suggests that intentional communities are better able to translate social capital, and to a lesser degree human and natural capital, into residents' wellbeing, and therefore less reliant on built capital. This allows residents to enjoy high quality of life on the basis of far lower levels of material throughput.[110]

3.2.7 Ecovillages, Learning and Research

Common to all forms of ecovillage, and implicit in the GEN definition of ecovillages quoted above, is a sense of ongoing exploration and learning. Ecovillage residents Michael Würfel[111] and Diana Leafe Christian,[112] for example, explicitly label their home communities as works in progress. They also equate means with ends: all ecovillages are attempting to work towards building alternative social, cultural, ecological, economic and political structures that serve as living examples of Buckminster Fuller's undertaking to create new possibilities that make existing ways of living obsolete.[112] They are not pretending to have achieved this, and the possibility always remains that the goal will shift as circumstances change and knowledge progresses.[101]

Ecovillages and their networks and networking organisations are actively involved in education and research, both formal and informal. A group of ecovillage-based educators known as GEESE (Global Ecovillage Educators for a Sustainable Earth), in meetings and workshops taking place from 1998, developed the Ecovillage Design Education programme, formally launched at the GEN 10th anniversary conference in 2005, and set up Gaia Education as a custom vehicle to deliver EDE and other trainings.

Ecovillages are 'researched' in multiple ways (also see Chapter 1.3). First, ecovillages themselves often practice some kind of internal reflection and evaluation that may be wholly or partly documented and made accessible. Members also publish their subjective experiences in journals and online platforms, in lectures and in the media. Ecovillages and/or GEN are involved in formal, sometimes funded, research projects. Ecovillages are increasingly approached by academic researchers who appreciate their value as 'living laboratories' in many different areas: as models for sustainable living, social and community innovations or special technical examples like compost toilets or straw bale house building. Researchers come from very diverse disciplines and from all over the world to research ecovillages. However no systematic academic field and educational programme involving universities currently exists.

3.3 Permaculture

The permaculture movement applies and develops the theory and practice of permaculture, a design system for sustainable and resilient human habitats created in Australia in the 1970s and since adopted by practitioners in most countries in the world.

3.3.1 Definition and Scope of Permaculture

Permaculture is a design methodology for sustainable human habitats that takes inspiration from the form and dynamics of natural systems.[113] [114] [115] It was originally conceived in the 1970s by Australian field ecologists David Holmgren and Bill Mollison as a contraction of the term 'permanent agriculture'.[116] [117] Its scope of common usage later expanded to encompass the full range of factors affecting the ecology of human settlement, society, economy and culture, and it is now more commonly considered shorthand for 'permanent culture'.

Permaculture's basic philosophy is one of working with rather than against nature, designing human habitats and organisations in ways that deliberately seek to emulate features that contribute to resilience, sustainability and productivity in natural systems. It thus has much in common with other approaches that take inspiration from nature in the conscious design of human systems, including biomimicry,[118] ecological engineering,[119] and adaptive management (which in turn has many features in common with indigenous

and traditional environmental management systems).[120] Perhaps the most important difference from these is that permaculture is explicitly ethically rooted, locating itself at the intersection of three mutually interdependent ethics: Earth Care, People Care and Fair Shares.

In its contemporary usage, the term 'permaculture' encompasses four distinct yet interrelated meanings:[121]

- A design methodology
- A bundle of methods and techniques
- A social movement
- A social philosophy

As a social philosophy, it is rooted in its three core ethics and rests on the proposition that appropriate goals for social change lie at the intersection of these ethics. As a design methodology, it seeks to apply lessons derived from careful ongoing observation of natural systems in the deliberate design of human organisations (material and/or abstract) that simultaneously fulfill the three ethics in sustainable ways. As a social movement, permaculture comprises a global community of dedicated social change practitioners, united by commitment to its social philosophy along with knowledge and application of its design approach and associated bundles of tools and techniques.

Permaculture has applications in a wide range of fields, both social and technical.[122] It was the original basis of the Transition movement[123] and remains a pervasive influence on Transition methodology.[124] It is also a key tool and methodology in ecovillages.

3.3.2 Origin and Diffusion of Permaculture

Permaculture originated in the work of Australian field ecologists David Holmgren and Bill Mollison in the 1970s, with the publication of the books *Permaculture One*[116] and *Permaculture Two*,[117] and since spread largely through the medium of popular education. Mollison travelled the world teaching and lecturing, issuing qualifications to those attending his courses and thus creating networks of recognised permaculture designers and teachers in Australia and several other countries. A global survey conducted by the Permaculture Association (Britain) in 2016 obtained responses from permaculture practitioners, projects and/or organisations in 141 countries worldwide.

The first International Permaculture Convergence, in Australia in 1984, formalised this procedure somewhat, adopting the design certificate as a basic qualification and diploma as a more advanced title.[125] This two-tier system has been widely adopted by national associations, many of which issue certificates and keep registers of recognised teachers and holders of design certificates and diplomas. Elsewhere, particularly when adopted by existing farmers in traditional smallholder-dominated local and regional economies, permaculture has spread largely through informal and aformal processes of peer-to-peer learning among farmers. In such cases, which include networks in Nepal, Malawi, Zimbabwe, Guatemala and elsewhere, the number of active practitioners far exceeds those having taken a course or been awarded a qualification. Among educated and relatively affluent populations in particular, the written work of Mollison and others, along with magazines and internet articles and videos, are important diffusion media and form some people's first exposure to permaculture thinking.

Michel Thill suggests five reasons why Permaculture has become a global movement:[126]

- It responds to a need of the time

- It was made openly accessible
- It is highly practical
- It applies appropriate technology and common sense
- It embraces change and new ideas

3.3.3 Permaculture and Research

Permaculture is a naturally experimental endeavor, in ways that imply close potential relationships with formal research. Its interventions at all levels are exploratory: each specific instance of design is unique. Even when it involves familiar techniques, these are applied in context-specific ways and combinations. Accordingly, permaculture design builds in ongoing processes of self-evaluation and re-adjustment, often modeled on the action learning cycle of intervention, observation, reflection and planning. Each application of permaculture can therefore be considered an exercise, however informal and small scale, in action research.[21]

The affinity with formal research processes has been pointed out in Environmental Anthropology, a field with strong traditions of applied and engaged research, with Holmgren's permaculture principles providing a conceptual link.[12] [7] [6] However, a combination of widespread distrust towards the academy among permaculture practitioners, and permaculture's limited visibility, understanding and/or credibility among academics, largely isolated it from formal research for most of its history.[21] Efforts led by the British Permaculture Association, roughly over the past decade, have sought to rectify this, both by encouraging better documentation and reporting by permaculture practitioners and by engaging professional researchers more closely with permaculture practice.[12][8] Among other things, this has led to creation of the Permaculture International Research Network involving several hundred researchers, practitioners, practitioner-researchers and researcher-practitioners in over 60 countries worldwide. Permaculture researcher-practitioners have presented these developments as the emergence of a new feature of the permaculture movement: the capacity to undertake its own documentation, reporting and critical self-analysis.[20]

3.4 Community Energy

The term community energy is applied to a wide range of initiatives, encompassing various different technologies, multiple types of organisation and varying degrees and forms of community involvement. Examples of community energy initiatives exist associated with ecovillages, apartment buildings, social support organisations, cooperatives, Transition Initiatives, informal associations, schools and even local governments. Various terms may be used more or less interchangeably with ‘community energy’, for example ‘community renewable energy’, ‘renewable energy communities’, ‘community-based renewable energy initiatives’ or even ‘civic energy communities’.

3.4.1 Nature, Diversity and Scope of Community Energy

Recent studies have attempted to improve understanding of what characterises a community energy initiative. According to Brummer and colleagues, communities decide to engage in energy-related

activities for diverse and often multiple reasons.[129] This results in a wide variety of activities and projects, which contributes to the plurality of the term/s.

The motivation for setting up a community energy initiative could be financial, a wish for greater levels of self-determination and independence (perhaps relating to an interest in energy sovereignty) or concerns over climate change and other environmental impacts of conventional energy production. However, engaging in community energy projects can have effects not anticipated by their founders. Energy communities may be playing an increasingly important role for society by raising awareness about renewable energy, contributing to wider participation in the energy transition or raising levels of social capital, self-understanding and capacity for collective action within a community.

Community energy initiatives are often presented as more ecological and democratic alternatives to traditional centralised energy systems. However, there are conflicting arguments as to whether energy communities are sufficiently engaged with social issues such as energy poverty. In addition, there are still significant technological, legal, economic and financial barriers to the further development of these initiatives.[130]

Community energy initiatives are closely connected with decentralised renewable energy generation. Whatever the renewable energy source used, these forms of energy generation can be set up by local communities rather than by large utility companies.[129] This is the source of the transformative potential of community energy initiatives, since they not only challenge but may fundamentally alter structural and functional features of the energy system. In many countries (such as Germany, where there are a significant number of community energy initiatives), support schemes play a crucial role in determining whether community energy will be economically feasible.

3.4.2 Scope and Potential of Community Energy in Europe

RESCoop.eu is a European federation of renewable energy cooperatives. It seeks to promote energy democracy and citizen empowerment in debates on European energy futures, via four defined objectives:

- To represent the voice of citizens and renewable energy cooperatives to European policy makers
- To support the creation of new renewable energy cooperatives and provide them with useful tools and contacts
- To provide services for European renewable energy cooperatives
- To promote the renewable energy cooperative business model throughout Europe

It sees cooperatives more as a way of working than a specific legal form. Accordingly, RESCoops typically follow the seven cooperative principles even if not formally constituted as cooperatives.

As of early 2019, RESCoop claimed on its website to represent 1500 member co-ops involving over 1,000,000 citizens.[131] Most RESCoop.eu members are in Western and Northern EU member states, although it also has members from Croatia and Greece, and from 12 member states in total. RESCoop.eu has ten national or regional associations as members: Germany, UK (two associations), Netherlands, Flanders, Walloons, Spain, France, Czech Republic and Italy.[132]

According to figures provided by RESCoop in 2017:

- 3,000 RESCoops are active in Europe, around half of these being represented in RESCoop.eu

- RESCoop members have jointly invested two billion euros in installing renewable energy generation capacity
- They have a joint production capacity of about 1,250 MW, producing 1,500 GWh per year
- They account for 1,100 employees and have a total annual turnover of 750 million euros

A report on energy citizens from CE Delft, based on 2015 data, estimates that by 2050, 83 percent of homes in the EU (around 187 million households) could potentially become energy citizens and contribute to renewable energy production, demand response and/or energy storage. Roughly fifty percent of households (around 113 million) may have the potential to produce energy; even more could provide demand flexibility through use of electric vehicles, smart e-boilers or stationary batteries. By 2050, 115 million EU households will have electric vehicles, 70 million may have smart electric boilers, 60 million may have rooftop solar PV and 42 million may have stationary batteries. Another 64 million households could participate in renewable energy production through energy collectives.[133]

3.5 Social Solidarity Economy

The solidarity economy is a growing international movement dedicated to creation of new economic structures and organisations based on principles of cooperation, solidarity, social responsibility and mutual aid. It lacks any coherent programme or standard definition, and varies widely in nature from place to place around the world. It strongly overlaps with interests and action in areas of business, economics and livelihood in community-led movements such as permaculture, Transition and ecovillages.

3.5.1 Defining Social Solidarity Economy

According to an EU-funded report by SUSY, a network of national solidarity economy organisations in 23 EU countries:[134]

> *"The solidarity economy ... pursues the transformation of the neoliberal capitalist economic system from one that gives primacy to maximizing private profit and blind growth, to one that puts people and planet at its core. As an alternative economic system, the solidarity economy thus includes all three sectors – private, public and the third sector. The solidarity economy seeks to re-orient and harness the state, policies, trade, production, distribution, consumption, investment, money and finance, and ownership structures towards serving the welfare of people and the environment."*

Most writers on the solidarity economy concur that it consists of deliberate attempts to create self-organised alternatives to dominant economic structures. Solidarity economy initiatives emphasise values of cooperation, inclusion and mutual support and make explicit the political dimensions of economic interchange by drawing attention to the social dimensions of economic activity.

Ould Ahmed notes that solidarity economy is less a fixed concept than a paradigm for practice, characterised by six main features:[135]

- Recognition of the importance of factors typically excluded from conventional economic analysis (environmental, social etc.)
- Emphasis on cooperative and associative rather than competitive and individualistic logics
- Promotion of worker self-management, often in cooperatives and associations

- Integration of marginal and subaltern people and groups, especially the poor and unemployed
- Political as well as economic equality
- Democratic autonomy on the part of individuals, in other words solidarity through voluntary association based on individual free will

These six characteristics in turn derive from two interdependent principles: reciprocity and democratic action. The combination of these principles brings economic interactions and decisions about their governance into the sphere of public debate in ways that ensure accountability, visibility and inclusion.[135] [136]

With a closer focus on solidarity enterprises and other organisations, Markus Auinger identifies three crucial principles:[137]

- The democracy principle: equal decision-making power for each person within the organisation, supported by wide sharing of data and background information
- The identity principle, or removal of the distinction between capital and labour through worker ownership
- The solidarity principle, of equitable and mutually supportive relationships both within the organisation and with wider society

According to a think piece for UNRISD (the United Nations Research Institute for Social Development) by Emily Kawano, the solidarity economy overlaps with the more radical end of the social economy. Part of the social economy fulfils a stabilising role for capitalism by delivering vital functions in care and social provision not catered for by profit-led enterprise, thus reducing exclusion and minimising possibilities for social unrest. The other seeks fundamental reform of the economic system in order to prioritise social over fiscal goals and environmental and social ethics over market logic, in line with the more transformative agenda underlying solidarity economics.[138] The term 'Social Solidarity Economy' encompasses this area of overlap, and refers to the combination of the solidarity economy and that part of the social economy that seeks to be transformative rather than conservative of the existing economic system.

The Réseau Intercontinental de Promotion de l'Economie Sociale Solidaire (RIPESS) promotes, undertakes and coordinates action, advocacy and scholarship in support of the social solidarity economy as a federation of continental networks in Latin America and the Caribbean, North America, Europe, Africa, Asia and Oceania.[139] The RIPESS charter states a number of key values: humanism; solidarity, mutualism, cooperation and reciprocity; social, political and economic democracy; universal equity and justice for all, including in relation to gender, race, ethnicity, class, age and sexuality; sustainable development; pluralism, inclusivity, diversity and creativity; and localism or subsidiarity, meaning decision-making and management on as local a level as makes sense.[140]

3.5.2 Activities of Solidarity Enterprises

The 2015 SUSY Report conducted case studies of 55 solidarity enterprises in 23 EU member states and nine other countries in Latin America, Africa and Asia. The surveyed enterprises covered a range of sectors, including production, service provision, cultural activities and campaigning. Specific areas of work include: agriculture and/or organic food production (34 of 55 businesses surveyed), fair trade (16), critical consumption (15), sustainable lifestyles (14), reuse, recycling and redistribution (11), provision of eco-friendly goods and services (9), sports and recreation (6), international development cooperation (5),

responsible tourism (5), local welfare services (5), ethical finance (4), energy conservation (3), maintenance and repair (3), renewable energy and green technologies (3), non-monetary exchange systems (3), and open/free information technologies (2). Many enterprises cut across these categories, either because they combine multiple activities or because their emphasis is on integration and/or organisation. In terms of activities, 42% were involved trade and services, 29% in production and processing, 17% in consumption and 12% in distribution. The vast majority of organisations surveyed achieved high levels of beneficial environmental and/or social impact (respectively, 44 and 45 of 55 organisations), with most also showing high impacts in terms of participation/self-management (33 organisations) and working in networks (36), and a smaller number in communication and advocacy (17).[134]

3.5.3 Diversity of the Social Solidarity Economy

The social solidarity economy is not a uniform phenomenon, but encompasses a range of autonomous local responses to experienced deficiencies in dominant economic structures and processes enacted by governments, often guided by International Financial Institutions. According to a review by Ould Ahmed, the movement first arose as separate developments in France and Latin America during the 1980s, later spreading to the UK, North America, Asia and Africa following the World Social Forum in Porto Alegre in 2001.[135] The movement has identifiable predecessors and influences going back to at least the 19th century, including worker self-management initiatives across the industrialised world; popular economy and landless movements in Latin America; proximity services seeking to address common social problems in many Western European countries; the fair trade movement in its 'south-south' and 'north-north' as well as 'south-north' forms; and various initiatives in solidarity finance, community currencies and ethical banking.[141]

Local, national and international solidarity economies and associated enterprises are highly varied in form, reflecting the diversity of economic and political conditions experienced around the world and the priorities that motivate local action.[136] In the Global South, particularly Latin America, these responses have tended to be survival strategies on the part of those excluded from the formal economy under authoritarian regimes and/or those dedicated to market-led models of national development. In Europe and other industrialised settings they have tended to be reactions against systemic patterns of social marginalisation and commodification of care. What they have in common is an explicit repoliticisation of the economic sphere in ways that emphasise values of sharing, mutual support, inclusion and democracy and attention to the qualities of interrelationship that support these. They thus represent a joint call for democratisation of both economics and politics to reflect collectively articulated notions of the common good.

In Europe, the 2015 SUSY survey showed the solidarity economy to have different emphases in different countries and regions. Northern and Eastern European countries showed a stronger emphasis on the more conventional social economy, and in many cases have a longer history of legal regulation. More autonomous and self-directed forms of organisation more in keeping with the concept of social solidarity economy tend to be more prevalent in Mediterranean countries, particularly France, Italy and Spain. Both contrast somewhat with the situation in most Latin American countries, where the specific notion of an economy explicitly geared towards solidarity originated in the 1970s and from the start emphasised social inclusion, more recently converging towards the European model through the adoption of legally recognised organisational forms such as cooperatives, mutuals and associations. Across 55 enterprises surveyed, most were cooperatives (15), associations, NGOs or foundations (13), social enterprises (9) and

private enterprises (5); among the others, ten were districts or networks under various legal forms and two were informal groupings with no defined legal form.[134]

3.5.4 Scale of the Social Solidarity Economy

Brazilian solidarity economy practitioner Euclides Andre Mance reports that in Brazil in 2007, the solidarity economy encompassed, wholly or partially, 1.2 million workers, with 1,250 solidarity enterprises having appeared in the previous five years.[142] He emphasises the emergence of networks and the creation by these networks of enabling mechanisms, such as solidarity finance, that enable organisations to interact primarily within the solidarity economy and hence move towards establishment a viable practical alternative to the capitalist economy. In some cases, such networks are actively supported within national government via formal institutional arrangements, notably creation of a Ministry for Community Economy in Venezuela and a State Secretary for Solidarity Economy within the Ministry of Labour in Brazil.[137] Solidarity economy principles have thus become embedded within state strategies for job creation and economic welfare.

The 55 enterprises surveyed in the SUSY report directly or indirectly employed around 1500 people, with a total of 13,000 people involved as employees or in other roles. The authors caution that these figures both underestimate the total numbers of beneficiaries (some of which are opaque to the survey methods used in the study) and take no account of the SSE's ability to expand in response to social needs. Financial data are also potentially misleading: a total annual turnover of €92 million across the 55 enterprises is skewed by a small number of very large organisations. The authors suggest a median figure of around €300,000 to be a better reflection of the typical size of such operations. Across the EU, the SUSY report suggests that in 2015 the solidarity economy employed 15 million people, up from 11 million in 2002-3 and representing 6.5 percent of the total labour force. This excludes increasing numbers of people involved in rapidly growing movements in solidarity purchasing and solidarity consumption, and community-supported agriculture.[134]

3.6 Community-led Initiatives and Government

Community-led initiatives (CLIs) increasingly collaborate with formal decision-making institutions at multiple scales.

3.6.1 Collaborations at Municipal Level

In recent decades local governments have proactively faced the sustainability challenge by adopting policy innovations.[143] Their role is crucial since, at least in cities and developing countries, they are responsible for the majority of public spending.[144] Many are part of the ICLEI network of local governments for sustainability, whose website reports members from 1,500 municipal authorities worldwide representing 25 per cent of the global population.[145] Municipalities are affected by numerous factors that can act as barriers or enablers. Besides access to resources (financial, human and others) and information, issues like leadership, institutional context and competing planning agendas are also highly important.[146]

Drawing on the direct experiences of community-led initiatives, activists associated with the Transition movement report:

> *"[M]any examples of engaged communities working for positive change who feel unsupported, even blocked, by local governments. We also see many municipalities with positive goals and a determination to act who are struggling to build genuinely collaborative relationships with local citizens."*[147]

The EU-Funded BASE research project (Bottom-Up Climate Adaptation Strategies Towards a Sustainable Europe) studied 23 European cases of climate change adaptation (including Tamera Ecovillage in Portugal, also a case study in the European platform Climate-Adapt[148]), in order to assess interactions of top-down policies and processes, and bottom-up responses and initiatives.[149] The key finding was that participatory approaches and other forms of stakeholder engagement, such as institutional changes, networks or formal collaborations, are key to overcoming barriers to community-led action.[150] These findings reflect a more general rise in policy and research interest in collaborative and participatory governance in multi-level systems, despite a scarcity of empirical evidence.[151] A report prepared by the European Environment Agency notes that meaningful stakeholder engagement and public participation are necessary, but remain rare.[152] The report calls for new forms of collaboration, along with governance innovations, and concludes that innovative partnerships with civil society actors are needed as a source of new approaches to adaptation. Similarly, a World Bank report emphasises the importance to resilience of civic dialogue, flexible funding allocation, and the incentivisation, scaling up and institutionalisation of community-led action.[153]

A decisive step in collaboration between local governments and grassroots movements may be community co-production of public services, perhaps facilitated by local government staff with specific roles in brokering the necessary collaborations.[154] In the field of community energy, three factors identified as essential for initiating and nourishing such collaborations are trust, motivation and continuity.[155] Collaboration between local governments and communities also raises various ambiguities and potential conflicts.[156] [157] On one hand, being institutionally and politically independent and so potentially freer from structural constraints is a key strength of community-led initiatives. On the other, self-organised action at community scale can create practical and ideological conflicts with policy. Depending on context, interactions with municipal authorities can thus act as either enablers or constraints.

Interactions between local governments and community-led initiatives in the context of the Transition movement (Chapter 3.1) include a range of examples. Independents for Frome, for example, is a case of citizens taking over the municipality administration by supporting independent candidates standing for elections. At the other end of the spectrum are examples of town councils that completely appropriate the Transition action.[158] In some cases, municipalities have put in place programmes to support and enable, or even initiate, community-level action.[159] [459] Successive iterations of the Transition model all emphasise the importance of working with local government.[160]

Findings of several major European research projects confirm this ambiguity, and point to a need for improved understanding of both their potential and the tensions involved.[161] With the aim of facing these challenges and creating synergies, Transition Network in partnership with the network of Transition Hubs initiated the Municipalities in Transition project (MiT) in 2017. The main objective is to create a clear framework for how Transition groups and municipalities can create sustainable change together. MiT first mapped existing experiences of such collaborations via a survey, which received 71 responses from 16 countries, and moved on to conduct in-depth pilots with selected case studies in Italy, Portugal,

Hungary, Brazil and Spain. It has also established an international community of practice on community-municipal collaborations, who are participating in regular online learning events.[459]

3.6.2 Collaborations at Regional Level

Regions, including bioregions, have been identified as key scales of action for transformative change in both theoretical studies and empirical research.[162] Solidarity economy initiatives, for example, become a powerful force for transformative change towards economic resilience when networks of mutually supportive cooperative enterprises reach a critical mass at regional scales.[163]

Some movement-specific networks of CLIs already organise at regional level: for example, the Transition Network website lists regional hubs in Istanbul and Paris.[82] Some regional hubs are cross-movement: for example, the North East Permaculture Network links Transition as well as permaculture groups across North East England.[164] Some regional networks are more organic and self-organised: for example, while Bristol in South West England was the first city to register a transition initiative with Transition Network, Transition Bristol itself remained a small entity, part of a wider matrix of intersecting local projects and city-wide initiatives in domains such as energy, food and a city-wide community currency in the form of the Bristol Pound.[90] [165] A 2017 survey of ECOLISE members led to the establishment of the Sustainable Communities Programme as a key initiative, based on creating networks of collaboration and support among multi-stakeholder pilot initiatives at regional scale.

The ARTS research project took as its focus of inquiry five European city-regions (Brighton in the UK, Budapest in Hungary, Dresden in Germany, Flanders in Belgium and Stockholm in Sweden) in which collaborations among community-led initiatives (all active in different domains such as biodiversity, mobility, energy), regional government and business create optimum conditions for transformational change to sustainability. The project analysed multi-stakeholder engagement spaces according to the capacity for co-creating new knowledge for action, making sense of contemporary transitions, and exploring how sustainable solutions impact transitions, through the use of dynamic and participatory methods stimulating a wide public debate.[166]

In the Brussels city-region, ECOLISE member 21 Solutions plays a key role in the *Inspirons le Quartier* project, in which Brussels Environment provides central support for *Quartiers durables citoyens*: autonomous citizens initiatives operating at neighbourhood scale.[167] In October 2018, the project listed 43 participating neighbourhood initiatives across Brussels, including some Transition initiatives.[168] 21 Solutions is also a key partner in Vilco, another Brussels-wide project. Vilco brings together public bodies, community groups, support organisations and researchers to co-create local approaches to sustainable development based on strengthening civic engagement. Local authorities include four municipalities and the regional agency Brussels Environment. Community groups involved are either Transition initiatives or Participative Sustainable Neighbourhoods, groups that since 2004 have received funding and other support from Brussels Environment for small-scale neighbourhood regeneration projects. Public bodies and community groups come together in Living Labs, experimental spaces where they co-create solutions, facilitated by support organisations according to basic values of neutrality, safety, equality and empowerment. Through successive phases of diagnosis, action and evaluation, the project proceeds according to several methodological principles: diversity and equality, starting from lived experience, demystification of public institutions, utility and replicability of tools, use of visual representation, experimentation, creating spaces for interaction and collaboration, and ongoing reflection to allow adaptation and continuous improvement of tools developed and used.

3.6.3 National Organisations

CLIs often self-organise at national level, within boundaries that may or may not correspond to the nation state. Some national structures are specific to particular movements, others cross different movements.

Within Europe, the Transition Network website lists national hubs in Sweden, Spain, Slovenia, Scotland, Romania, Portugal, Norway, Netherlands, Luxembourg, Latvia, Italy, Ireland, Hungary, Germany, France, Denmark, Croatia and Francophone Belgium.[82] Some of these intersect with national permaculture movements: the Latvian Permaculture Association also acts as the national transition hub, and in Luxembourg CELL (Centre for Ecological Learning Luxembourg) coordinates both Transition and permaculture nationally.

National permaculture organisations exist in most European countries, and often coordinate networking, training and/or project support functions. As with Transition, these often follow cultural and/or geographical rather than political boundaries: Irish initiatives organise across the island of Ireland, that is Northern Ireland and the Republic of Ireland; separate coordination organisations exist for Francophone and Flemish-speaking parts of Belgium and initiatives in Scotland primarily organise in national support organisations such as the Scottish Communities and Climate Action Network rather than Britain-wide or UK-wide.

GEN Europe's website lists national ecovillage networks in Austria, Bulgaria, Denmark, Estonia, Finland, France, Germany, Hungary, Poland, Italy, Israel, Netherlands, Norway, Russia, Sweden, Switzerland and Turkey, with the Iberian Ecovillage Network covering Spain and Portugal.[169] In Portugal itself, ecovillages, permaculture projects and Transition groups collaborate on the RedeConvergir map of sustainability initiatives.[170]

3.6.4 International Collaborations

International collaboration is best developed in the ecovillage movement, with GEN Europe among five regional groups associated with the global network GEN International (along with those representing Africa, Asia/Oceania, North America and Latin America).[171] Within Europe, regional networks exist for the Baltic and Balkan regions, and the Iberian Peninsula.[169]

Transition Network began life as a coordination and support organisation for the Transition movement in 2007, when it consisted of only a small number of local initiatives in South West England, and maintained this role as it grew into an international movement. Since around 2016, the network of national hubs has assumed increasing responsibility for governance of the movement, with no single organisation responsible for coordination at either European or international level.

European permaculture convergences (EuPCs) have taken place since 1992. They were initially organised by the European Permaculture Institute, which in 2012 became the European Permaculture Council. At the 2014 EuPC in Bulgaria a process began which led to the creation of the European Permaculture Network (EuPN), whose activities began in earnest at the following EuPC in 2016.[172] The EuPN exists to support networking and collaboration among permaculture organisations across Europe and link them with like-minded organisations and networks.[173] In the run-up to the 15th International Permaculture Convergence in London in 2015, the Permaculture's Next Big Step process was the first attempt to organise coordinated action at a global scale.[174] It led to creation of the Permaculture CoLab to support and explore appropriate tools for collaboration within the permaculture movement at all levels from the local up to the global.[175]

In 2014, national and international coordinating and representative organisations of the permaculture, ecovillage and Transition movements came together to establish ECOLISE (European COmmunity-Led Initiatives for a Sustainable Europe) as a common platform for networking, collaboration, learning and policy advocacy.

4. Community-led Initiatives in Europe

CLIs are found in increasing numbers and diversity all across Europe. Many of them, such as ecovillages, are part of both European and global networks (See 4.1.1 below). **Photo: Cloughjordan Ecovillage**

Community-led initiatives (CLIs) are found in increasing numbers and diversity all across Europe, some with documented histories of over 50 years. Many key movements of CLIs, such as Transition, permaculture, ecovillages, community energy, solidarity economy and various forms of community food initiative, are found across most or all of Europe. However, distribution of particular networks can be clustered and/or patchy, and CLIs may take very different forms in different countries. Despite significant recent formal research effort, and attempts on the part of some networks to document and map initiatives, the full numbers, nature, scope and impacts of CLIs in Europe are not yet documented or understood, particularly in many parts of southern and eastern Europe. It is our hope that future iterations of this report can be a central part of efforts to address this significant knowledge gap. In the meantime, this chapter provides an overview of available information at European scale plus accounts from selected countries in which we have made some headway in compiling information.

4.1 Numbers and Diversity of Community-led Initiatives in Europe

According to findings of the TESS research project, CLIs in Europe tend to be created in order to advance environmental and/or social dimensions of sustainability. In a survey of members of CLIs from six European countries (Finland, Germany, Italy, Romania, Scotland and Spain), more than ninety percent of respondents reported that the most important goal of community action for them was one of the following:[176]

- Providing opportunities for social interaction
- Using natural resources more efficiently
- Combating climate change by reducing greenhouse gas emissions
- Promoting more sustainable behaviour, lifestyles and social practices

Many CLIs are connected with specific networks, and some of these networks have particular strengths in or focus upon specific domains or activities. However, it is very common for a single initiative to operate simultaneously in multiple domains of action. Among the 63 case study initiatives investigated in TESS, nearly fifty per cent were active in the domain of food, 38 percent on waste, 28 percent on transport and 27 percent on energy.[176]

Regarding their legal status, the majority of the 63 CLIs studied within TESS were cooperatives, with different organisational forms evenly distributed among the six countries involved.[176] Nearly a quarter of TESS case study initiatives had no formal legal organisation. Governance procedures vary in their degree of formality: some CLIs deploy structured decision-making processes such as general assemblies and committees, some base decision-making on full participation and consensus.

Key networks of CLIs have many historical and present-day associations, with overlap, intersection and collaboration all common. Many can be regarded as some form or another of commoning movement, where communities of co-users or other stakeholders self-organise to create and implement appropriate governance and management mechanisms.[177] Many Transition initiatives and projects adopt methodologies from permaculture and solidarity economy, initiate community energy or CSA projects, and act as examples of Degrowth in practice. Since 2014, ecovillage, permaculture and Transition networks have formally collaborated at European level as the ECOLISE meta-network.[178] These connections within and across networks promote the translocal mobilisation of social movements called for by, for example, researcher Flor Avelino as a strategy for collective nurturing and empowerment.[179]

Taking TESS project case studies as perhaps representative of CLIs in Europe, most were created around 2010, in the early years of the financial crisis, nearly a quarter had existed for more than 14 years and another quarter were created between 2012 and 2016.[176] Some of the oldest initiatives we know of are Findhorn ecovillage in the UK, founded in 1962 and Les Jardins de Cocagne, a community food initiative in Switzerland that began in 1978.

Estimating the number of CLIs in Europe is difficult and figures vary according to source. Different networks register and report very different numbers of initiatives, and different mapping exercises produce different numbers per network and country. The ECOLISE map of Transition initiatives, ecovillages and permaculture projects (Figure 4.1) identifies 1000 initiatives in Europe but relies on data mapped elsewhere: for example, permaculture projects are well documented in Portugal and Britain, where concerted mapping efforts exist, but largely absent from the map (although known to be in

existence) elsewhere.[180] The inconsistency across different efforts is shown by the contrast between the ECOLISE map, which owing to low participation among Francophone networks includes very few French initiatives, and a map on the Colibris website that lists nearly 20,000 CLIs in France alone (Figure 4.2).

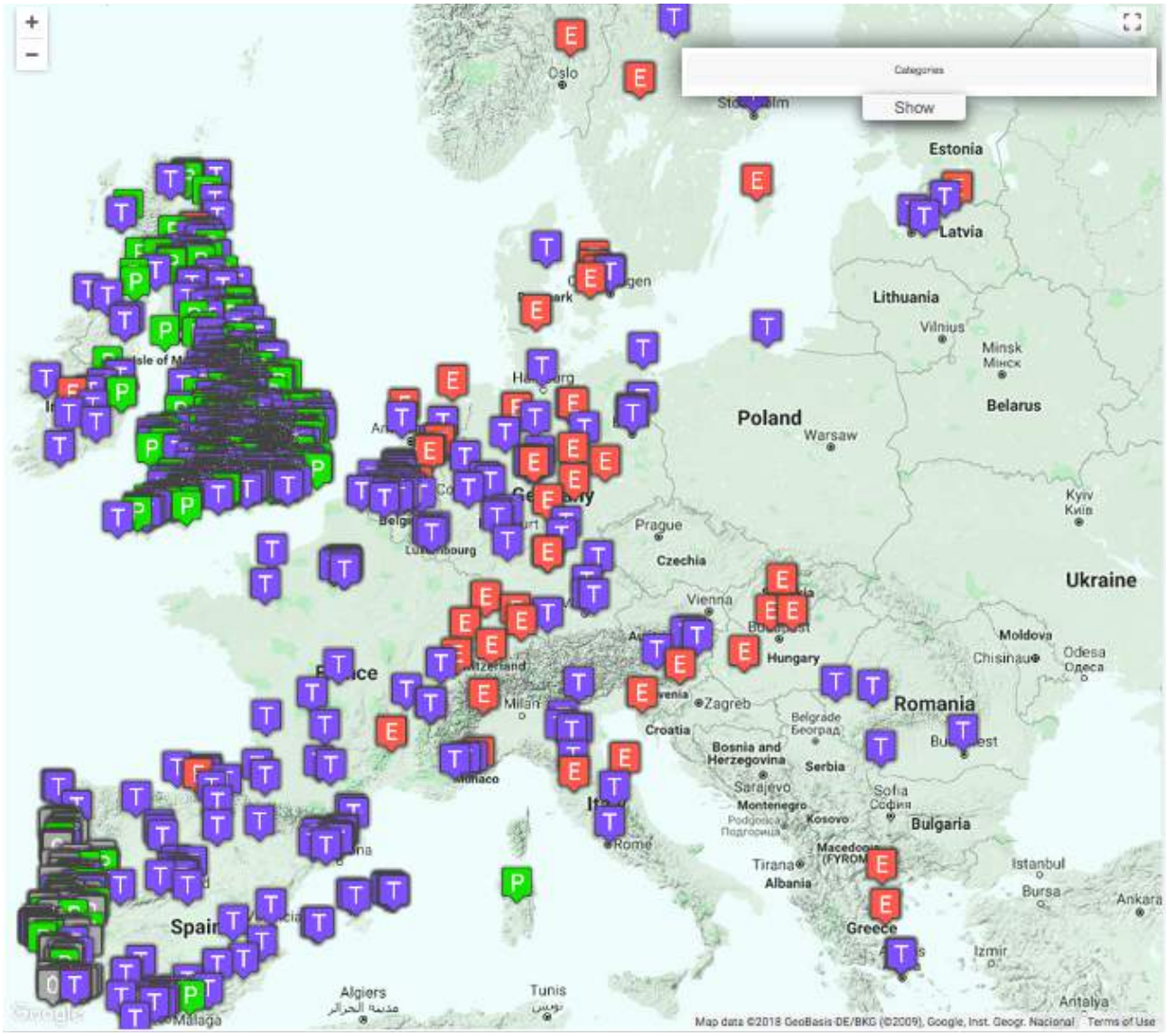

Figure 4.1. European CLIs shown on the ECOLISE website (compiling existing data the Transition, Permaculture and Ecovillage movements)[180]

Figures are available for the numbers of CLIs in various other networks. The REScoop.eu network of European energy cooperatives estimates there to be 3000 such initiatives.[131] The SUSY survey of the social solidarity economy revealed two million organisations in Europe.[134] A survey of community-supported agriculture and related forms of community food initiatives across Europe identified around 6,300 projects. Bearing in mind that many of these figures are based on partial data and may omit large numbers of initiatives, it is clear that the scope and diversity of community-led action on sustainability and climate change in Europe, while unknown, is vast.

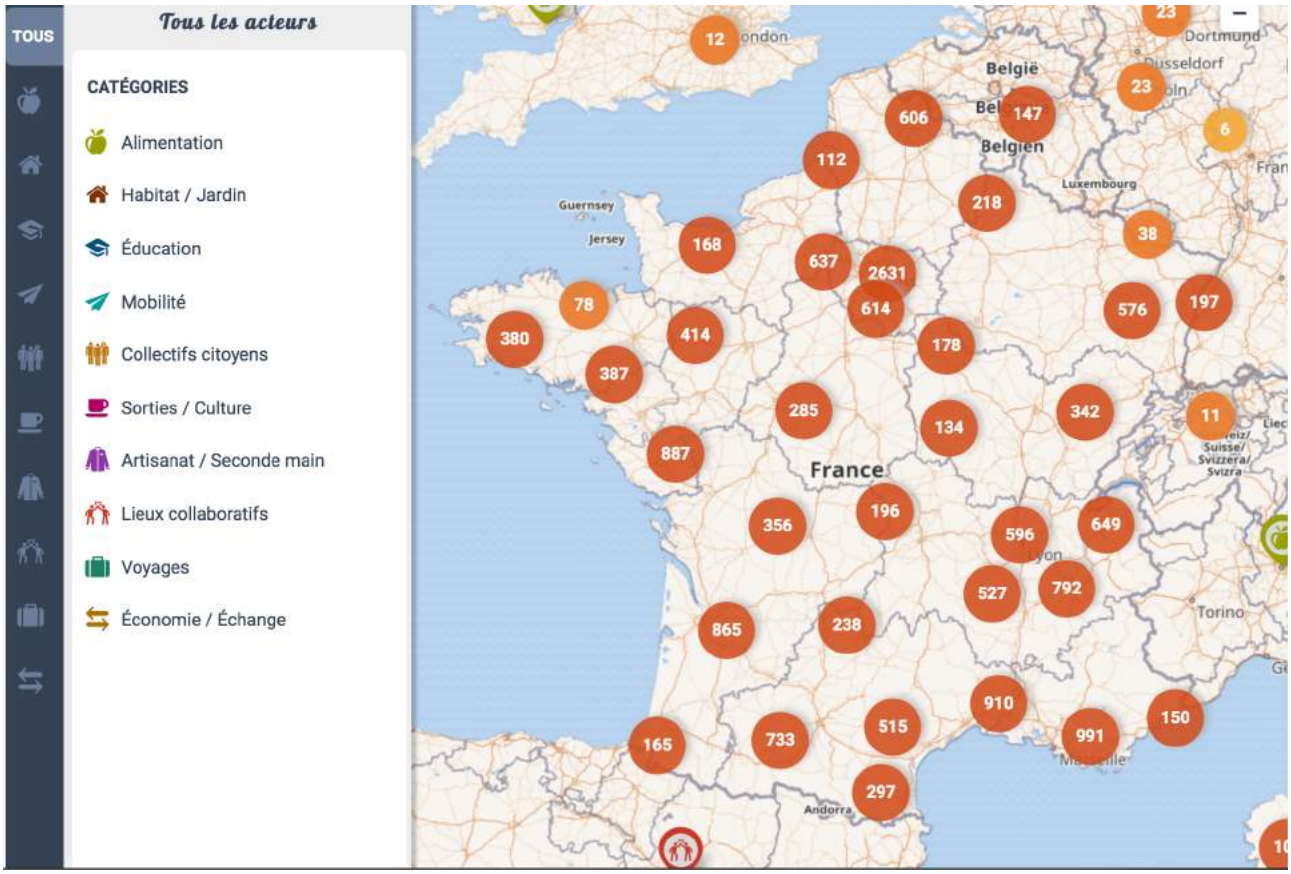

Figure 4.2. Initiatives mapped by the Colibris network (France). Source[336]

4.1.1 Ecovillages in Europe

The Global Ecovillage Network's international website lists more than 1000 local ecovillage projects and networks worldwide, around 130 of these in Europe.[100] GEN Europe's website, based on self-registration, gives a slightly lower figure of 50 established ecovillages and a further 41 projects aspiring to become ecovillages.[171] 2014 data assembled by the independent Eurotopia Directory identifies 430 such communities,[182] while the map on the ECOLISE website includes 57 ecovillages.[180] The GEN Europe website lists national networks in Austria, Bulgaria, Denmark, Estonia, Finland, France, Germany, Hungary, Poland, Italy, Israel, Netherlands, Norway, Russia, Sweden, Switzerland, Turkey and Ukraine, and regional networks in the Baltic, Balkans and Iberian Peninsula.[169]

4.1.2 Transition in Europe

The Transition Network website lists over 600 local initiatives in Europe,[81] and national hubs in Sweden, Spain, Slovenia, Scotland, Romania, Portugal, Norway, Netherlands, Luxembourg, Latvia, Israel, Italy, Ireland, Hungary, Germany, France, Denmark, Croatia and Francophone Belgium.[82] Due to the movement's historical origins in England, Transition Network currently acts as a de facto hub for England and Wales, and is in the process of establishing a separate national hub for these countries.

4.1.3 Permaculture in Europe

Permaculture is present all across Europe. Research undertaken by the Permaculture Association (Britain) during 2015 identified 105 permaculture organisations in 42 European countries. A survey conducted the same year achieved responses from organisations with strategic organising roles in 20 European countries.[183] The European Permaculture Council for Europe was founded in 2006 as a descendant of the European Permaculture Institute, which had organised European permaculture convergences (EuPC) since 1992. At the EuPC in Bulgaria in 2014 a decision was made to develop into the European Permaculture Network, which was formally launched at the 2016 EuPC in Solena and organises on sociocratic principles.[172] Many national permaculture associations in Europe are members of ECOLISE.

Accurate figures for numbers of permaculture projects are available for a small number of countries. In Britain, the LAND Network of permaculture learning and demonstration sites run by the Permaculture Association (Britain) includes 115 registered projects in England and around thirty others in Scotland and Wales.[184] These comprise only a small fraction of the projects that exist: according to Andy Goldring, chair of the Association, substantial numbers of unregistered projects exist in cities such as Leeds (ten or more) and Bristol (fifty or more), and the actual number of community-level permaculture projects in Britain is probably around 500-800.[185] Permaculture is also well established in Portugal, which is one of the countries with most projects per capita and land area according to the Worldwide Permaculture Network.[186] In Portugal, the national RedeConvergir map listed 46 registered permaculture projects in late May 2018.[187] Permakultur Danmark lists more than 250 registered permaculture projects in Denmark with the highest concentration in urban areas, with 10 local networks established or in development and 14 LAND centres and starters.[188]

4.2 Community-led Initiatives by Country

Here we present overviews of community-led action in selected European countries. In this phase, time and resource limitations have restricted us to a small number of partial country reports, presented here to complement the European-wide overview and indicate what might be possible in the future.

Our long-term aspiration is for this report to include comprehensive summaries of relevant activity in every country in Europe, developed with the active participation of national networks of community-led initiatives and their supporters and available in national languages as well as English and other major/international European languages. We hope that creation of the second Status Report can involve liaison with national ECOLISE members and other in-country partners to establish what interest, capacity and expertise are available nationally for co-producing such overviews, how they could support and synergise with the other activities and aspirations of in-country contributors and their networks, and how such national studies could be resourced. Anyone wishing to participate in this fashion is invited to contact the editorial team on research@ecolise.eu.

4.3 Community-led Initiatives in Germany

4.3.1 Transition in Germany

In May 2018, the German Transition Network website listed 150 initiatives active nationally,[189] while 32 local initiatives in Germany had voluntarily self-registered on the Transition Network website.[190]

Data collected annually from the German Transition Hub's website and reported in an academic study led by Giuseppe Feola at Reading University suggest the first local initiatives appeared in Germany in 2009, and indicate that numbers have increased steadily, but at a declining relative rate, in subsequent years:[86]

Table 4.1. Numbers of Transition initiatives in Germany by year

Year	Number of initiatives	Increase on previous year
2009	<10	
2010	19	
2011	31	63%
2012	57	61%
2013	87	53%
2014	107	23%

The data used by the Reading University team suggest that the geographical distribution of local initiatives in Germany is strongly clustered, with large numbers in and around Berlin and some other major cities and much sparser distribution across most of the rest of the country.[191]

The German Transition Network is organised as a coordination circle, working groups and through the 2014-registered non-profit association 'Verein Transition Netzwerk e.V'. Its main aims are to increase exchange among initiatives (through its website, newsletter and national network meetings), to link activities to the international Transition Network and to promote the Transition movement.[192]

4.3.2 Permaculture in Germany

The German national association Permakultur Institut was founded in 1983 and lists 55 permaculture projects on its website.[193] Since 2003 the Permaculture Academy has operated as part of the association, offering training for the Diploma in Applied Permaculture Design. The Permakultur Institut, a founder member of ECOLISE, is organised sociocratically. Its key aims are to inform the public, offer trainings, cooperate with other organisations and public institutions, and connect to European and International permaculture associations.[194]

4.3.3 Ecovillages in Germany

The German ecovillage movement has a long and rich history and includes established communities like Lebensgarten Steyerberg (founded in 1984 with a current population of 120 adults and 40 children),[230] ZEGG (founded in 1991 and currently home to 95 adults and 15 children) and Sieben Linden (founded 1997 with currently 100 adults and 14 children),[232] along with new projects like Schloss Tempelhof (founded in 2010 with 100 adults and 45 children currently resident)[233] and Nature Community (founded in 2014 and currently home to 50 adults and 15 children).[234]

The 2014 Eurotopia Directory of Communities and Ecovillages in Europe lists 180 communities, ecovillages, settlements and co-housing projects in Germany.[182] The Global Ecovillage Network website lists 45 ecovillages and projects in Germany,[195] and the Ecobasa directory includes 30 communities in Germany.[196]

Thirteen ecovillages are organised as official members of GEN-Germany.[197] The registered association 'GEN Deutschland e.V' works towards increased networking, changing the political framework and supporting existing and aspiring communities. Sociocratically organised, GEN Deutschland operates in five circles, representing the four dimensions of sustainability around which ecovillages are organised (ecology, economy, social, culture) along with administration/communication.

GEN-Germany is part of the Baltic Ecovillage Network (BEN), an association connecting projects around the Baltic Sea that is operated by a board of 11 members from its different member countries. GEN-Germany is also a full member of GEN-Europe, the European branch of the Global Ecovillage Network.

4.3.4 Community Energy in Germany

In 2016 there were an estimated 1.747 community energy companies and energy cooperatives in Germany, dominated by wind (43.21%) and photovoltaic (42.61%) energy. The majority are located in Bavaria (21%), Schleswig-Holstein (18.5%), Lower Saxony (17.2%) and North Rhine-Westphalia (14.6%).[198] 850 energy cooperatives are organised within the federation for German Co-operatives (DGRV) and the Federal Office of Energy Cooperatives gives a voice to energy cooperatives in national political debates.[199] DGRV is also a member of REScoop.eu, the European network of energy cooperatives.[132]

The growth in community energy projects in Germany is part of shift towards decentralisation supported by the Renewable Energy Act (EEG), first introduced in 2000 and offering financial incentives to small producers and investors in the form of feed-in tariffs.[200] A steady increase in community energy has been evident since 1995, and particularly marked between 2008 and 2014.[198] Reform of the Renewable Energy Act in 2014 included measures that have created difficulties and uncertainties for many energy cooperatives and other small producers.[201] [202]

4.3.5 Collaboration with Local Government

In 1992, the German federal government set up the German Advisory Council on Global Change (WBGU) as an independent, scientific advisory body.[203] WBGU acknowledges the role of ecovillages and Transition initiatives as change agents and repeatedly advocates the support of projects and initiatives:

> *"Structure-focused top-down strategies (such as regulations and incentives) should be deployed where the greatest possible effect on the reduction of resources and energy consumption can be expected (in north-*

western Europe this would be the areas of mobility or interior heating). To make use of existing potential to develop conscious, solidarity-based lifestyles, G20 countries should also support top-down approaches as well as bottom-up processes in 'ecologically minded milieus'. Although their ecological footprint is still fairly large, these milieus often have the resources required to be effective through strategic consumption or targeted divestment. In this sense, G20 governments should support 'pioneers of change' ... and the socio-ecological innovation they are proposing and propagating (e.g. actors in the collaborative economy, eco-villages and transition towns...)."[204]

4.4 Community-led Initiatives in Ireland

Ireland has many networks working towards sustainability and low carbon futures. Several of these organise across the island of Ireland, that is Northern Ireland and the Republic of Ireland. Some networks are exclusively community-led while others are supported within state structures. There are also many initiatives that are not formally associated with any network, for example the many Plastic Free and Zero Waste initiatives that have sprung up across Ireland in the last few years. The People's Energy Charter, set up in 2013 and outlined below, is an example of community-led public participation. Since 2015, local authorities across the Republic of Ireland have set up the Public Participation Network with the remit to engage citizens in local decision making, while Ireland's Citizens' Assembly may prove to be the democratic process which brings about real action toward building its low carbon future.

4.4.1 Transition in Ireland

The Transition Network website lists ten initiatives in Ireland.[81] TINI, the national umbrella organisation for Transition Ireland & Northern Ireland, is currently operating as an informal network with a Facebook page[205] and plans to redevelop the website and organisation structure.[206] Initiatives active online in 2018 include: An Lianadh (Dublin City Transition Initiative),[207] Transition Derry,[208] Transition Town Dundalk,[209] Transition Galway,[210] Transition Kerry[211] and Transition Town Kinsale.[212]

A survey carried out in 2017 endeavoured to establish who and what the TINI Network was. It found common ground across the network, with most initiatives engaged in awareness raising and food projects such as community gardens and a smaller number facilitating energy forums. Initiatives were collaborating locally with groups such as Tidy Towns and local schools, while also liaising with National bodies such as Sustainable Energy Authority Ireland and environmental networks. Many were also supported by the same funding sources, such as LEADER. Several initiatives made submissions to Local Area Development Plan Reviews and were endeavouring to engage with their local authority regarding climate action, e.g. through the Public Participation Network.[213] [214] [215]

4.4.2 Permaculture in Ireland

Permaculture Ireland is a group of like-minded individuals working together to support one another, offer events, run courses and promote permaculture across the island of Ireland. There is no central organisation, rather a distributed network of volunteers who come together to create positive change.[216]

The All Ireland Permaculture Gathering is a weekend camp that provides all those interested in the development of Permaculture in Ireland and Northern Ireland with an opportunity to network, celebrate and learn about bringing together people and ideas who share a common interest in sustainable and

ethical methods for building a better world. First held in Co. Wicklow in 2011, it has hosted between 200 and 300 people each year since. It is an active participatory gathering, co-created by a year team and camp attendees, at which people host talks and workshops, share skills and information and participate in a dynamic community event.[217] In summer 2018, the European Permaculture Convergence was held in Wicklow.[218]

4.4.3 Ecovillages in Ireland

Cloughjordan Ecovillage in County Tipperary is a neighbourhood intentional community working towards best practice in community development and rural regeneration, developed by Sustainable Projects Ireland, a registered educational charity and national NGO. The project is a mixed use development with a strong emphasis on economic, social and environmental sustainability. All decisions are made by the consensus of those involved, with matters of general policy and direction decided at monthly members' meetings. Its aim is to be a centre of excellence for awareness-raising and education in the areas of: energy conservation and production; reduction and recycling of resources; sustainable livelihoods; sustainable, local food production; broad community understanding of the converging environmental, social and economic challenges and the need to develop resilience as the key response.[195]

The Hollies is a centre for training in Practical Sustainability on about ten hectares near Enniskeane in West Cork, owned by educational charity An Baile Dulra Teoranta. It aims to create working examples of what a sustainable society might look like in the areas of housing, energy, gardening, economics and community development.[219]

Enriched Earth seeks to collaborate with Global Ecovillage Network to develop of a series of ecovillages across Ireland. As part of this work Enriched Earth is working to pioneer an educational ecovillage in North Roscommon as a prototype model of regenerative living. Enriched Earth is also seeking to develop a cluster approach to uniting smallholdings and eco-projects in local areas under a GEN Ireland umbrella.[220] Along with Cloughjordan, Enriched Earth is also working to found GEN WISE as a regional network across Wales, Ireland, Scotland and England.

4.4.4 Community Energy in Ireland

The Irish Sustainable Energy Communities (SEC) network is made up of over 200 communities around Ireland involved or interested in community energy. Some have been influencing local energy use for years, while others are thinking about it for the first time. The aim of the network is to encourage and support a national movement throughout the country. An SEC can include a range of different energy users in the community such as homeowners, sports clubs, community centres, local businesses and churches. In this way, an SEC connects sustainable energy, local economic development and public wellbeing. The network is supported by the Sustainable Energy Authority of Ireland.[221] [222] Some examples of well-developed Community Networks include: The Tipperary Energy Agency,[223] Aran Islands Energy[224] and Kerry Energy Agency.[225]

Energy Cooperatives Ireland[226] supports community based renewable energy cooperatives at every stage of their development, guiding them through the legal process of setting up a cooperative, advising them on their dealings with state agencies, introducing them to its network of cooperatives where they can learn from best practice examples, and helping them communicate their message locally and nationally.

4.4.5 Solidarity Economy in Ireland

According to a 2015 report on solidarity economy by the EU-funded IDEA project, in 2009 the Irish social economy employed a total of 98,735 people, 5.34% of the total workforce. Of these, 43,328 people were employed in cooperatives, 650 in mutual societies and 54,757 in associations. The report also mentioned that Ireland falls behind other European countries when it comes to legislative and fiscal support for the Social Economy.[227] [228]

Several other key organisations and networks support the Solidarity Economy in Ireland:

- The Wheel is a national association of community and voluntary organisations, charities and social enterprises that supports capacity building towards greater positive impacts through practical advice and training[229]
- The Irish Social Enterprise Network supports social enterprises, social entrepreneurs and social innovators seeking to initiate or grow their idea[230]
- Change X supports people to get together in their local communities to improve health, sustainability or education in response to global challenges[231]
- The National Federation of Group Water Schemes (NFGWS) is the representative and negotiating organisation for community-owned rural water services in Ireland[232]
- The Irish Cooperative Organisation Society (ICOS) serves and promotes commercial cooperative businesses and enterprise, across multiple sectors of the Irish economy[233]

4.4.6 Community Food Production in Ireland

According to the 2015 survey by URGENCI, the International Network for Community Supported Agriculture (CSA), the first CSA initiatives in Ireland began in 2009, and by 2015 included seven known initiatives providing food to 485 people. The CSA Network Ireland was founded in 2015 to connect these projects.[234]
Community Gardens Ireland (CG Ireland), was created in 2011 as an online support network for the island of Ireland. It is a voluntary, independent, inclusive group that works with all agencies and groups that promote environmental awareness and support community gardening and food growing. Their website lists almost 200 Community gardens. Their vision is that community garden spaces are created in every village, town and city in Ireland and Northern Ireland, empowering local communities and providing outdoor places where people of all ages, genders, nationalities and socio-economic backgrounds can learn about gardening, food growing and food sovereignty; the environment, biodiversity, climate change, sustainability and community resilience and the positive benefits for mental and physical health of spending time outside in nature and being sociable around food.[235]
The Bord Bia (Irish Food Board) website lists 138 farmers' markets in Ireland.[236] There is also a Country Market Network with 44 members listed on its website.[237] Cloughjordan Ecovillage also supports networking among farmers, community food activists and related organisations at its annual Feeding Ourselves event.

4.4.7 Other Forms of Community-led Action in Ireland

Many community initiatives in Ireland are not part of any network but work as standalone organisations, for example Sustainable Skibbereen.[238] Several towns, villages and communities have set up community gardens, plastic free and zero waste initiatives independently. In addition, some religious centres in Ireland have promoted sustainability for many years, including the Presentation Sisters at Nana Nagle in County Cork[239] and An Tairseach, run by the Dominican sisters in County Wicklow.[240] Some community networks, such as the Tidy Towns network that originated in a national competition in the 1950s, have assumed increased focus on sustainability and conservation in recent years.[241] Many Irish civil society organisations are part of the Stop Climate Chaos coalition, working towards a rapid and just transition to a carbon free future for Ireland.[242]

A newly redeveloped website, sustainable.ie, includes stories about and links to community led action in Ireland that addresses global sustainability goals.[243]

4.4.8 Collaboration with Government

Several formal mechanisms exist to link community action with government in Ireland. Many of the networks described above, or their projects, are funded through programmes such as LEADER and Local Agenda 21, or directly from the Government Departments of Rural and Community Development, Communications, Climate Change and the Environment or others.[214] Many networks make submissions to their Local Area Development Plan, regional or sectoral strategy reviews, and regional and national Policy documents being prepared by the Irish Government. 26 national independent environmental non-governmental organisations collaborate to represent the views of the Irish environmental sector through the Environmental Pillar, which was established as an independent national social partner by decision of the Government in 2009 and seeks to promote sustainable development according to the Rio Declaration of 1992.[244] Formal Public Partnership Networks connecting local authorities with community groups operate in all 31 local authority areas. There are also numerous examples of community-led public participation, including formation of the People's Energy Charter in 2013 to promote public participation in the development of Ireland's Energy Policies.[245]

Ireland's Citizens' Assembly

The Citizens' Assembly was an exercise in deliberative democracy, placing the citizen at the heart of important legal and policy issues facing Irish society. With the benefit of expert, impartial and factual advice the Assembly's 100 citizen members considered a given topic. Their conclusions formed the basis of a number of reports and recommendations that were submitted to the national parliament for further debate.[246] The Assembly on 'How the State can make Ireland a leader in tackling climate change' has made strong recommendations, which are currently under review by a cross party committee who are due to report back to government in January 2019. The recommendations were reached by ballot paper voting and followed two weekends of deliberation focused on the energy, transport and agriculture sectors, international best practice and existing national policies and activities. A total of 13 questions appeared on the ballot and recommendations were reached by majority vote.[247]

Ireland's National Dialogue on Climate Change

The National Dialogue on Climate Action is a Government of Ireland initiative, delivered by the Department of Communications, Climate Action and Environment, along with the Environmental Protection Agency, in engaging people in collaborative action. As part of the National Dialogue on Climate

Action, a series of regional and local meetings are being organised across Ireland to generate awareness, engagement and a motivation to act, in relation to the challenges presented by climate change. The first of these gatherings was held in June 2018 in Athlone and the second in November 2018 in Tralee.[248]

The Irish Climate Case

This legal action taken by Friends of the Irish Environment is the first case in Ireland in which citizens are seeking to hold their government accountable for its role in knowingly contributing to dangerous levels of climate change. They argue that the government's approval of the National Mitigation Plan in 2017 was in violation of Ireland's Climate Action and Low Carbon Development Act 2015 (the Climate Act 2015), the Constitution and human rights obligations, and that the Plan falls far short of the action required by the Paris Agreement on climate change.[249]

4.5 Community-led Initiatives in Portugal

4.5.1 Overview

In Portugal, an action research project entitled CATALISE (Empowerment for Local Transition and Social Innovation), running from 2014-2016, mapped and studied Portuguese community-led initiatives (CLIs) in order to understand their characteristics, drivers, enablers and potential.[250] It found that many initiatives were created at the peak of the financial crisis in 2011. The majority of projects were focused on education and community building, followed by sustainable agroforestry and farming. Nearly a quarter of initiatives have permanent partnerships with similar initiatives while thirty percent undertake such partnerships regularly and around thirty-five percent sporadically. The majority of CLIs have permanent or regular collaboration with national and local networks. Activities covered many different fields: social (involvement of diverse members and capacity building), economic (promoting self sufficiency and the commons), governance (participatory and sociocratic methods), cultural (creativity and art), territorial (local partnerships), management (team work) and environmental (recycling and composting). In the short term (five years) most CLIs aimed to achieve greater levels of financial sustainability and implement larger numbers of projects with direct benefits to and involvement of local communities.

4.5.2 Transition in Portugal

According to the official website of the national hub, the Portuguese Transition movement began in 2009 supported by the creation of an online social network called *Transição e Permacultura em Portugal* (Transition and Permaculture in Portugal). In April 2010 a national colloquium, *Transição para uma Economia e Cultura Pós-Carbono* (Transition for a Post-Carbon Economy and Culture) took place in Pombal. The first Portuguese initiatives registered on the Transition Network website that April (Parades) and May (Pombal). The national hub itself, Transição Portugal, emerged from a series of meetings between November 2010 and September 2013. It publishes a quarterly digital newsletter, runs regular Transition Trainings conducted by a team of four recognised Portuguese trainers, and has about 30 initiatives registered.[251] As of June 2018, the Transition Network website listed 20 initiatives in Portugal.[81] The national RedeConvergir website listed 34 Transition initiatives as of September 2018.[252]

A detailed study of the national Transition movement by researchers at several Portuguese universities took place within the COMPOLIS project during 2013 and 2014.[253] Based on interviewees with 39 active

participants in 14 Transition initiatives, researchers concluded that, despite rhetorical commitment to community engagement, inclusion and diversity, Transition initiatives tend to be dominated by quite a narrow range of highly educated people with previous history of involvement in environmental and/or social action. They suggest that, like the Transition movement as a whole, Portuguese initiatives would benefit from greater attention to issues of power and diversity within communities and sustained use of more fully participatory methods to achieve wider engagement in the communities in which they work.[253]

Portugal was home to two transition initiatives that originated within universities around the same time, late 2010, both persisting until 2013. UMinho in Transition was initiated by students and staff who developed a food garden at Minho University in order to promote research, cultural intervention, solidarity and sustainability.[254] TU-FCUL began at the Faculty of Sciences, University of Lisbon (FCUL) with the aim of promoting new, more systemic perspectives, topics (community-led initiatives, Integral Theory, Nature-Based Design and others), new ways of doing (such as Dragon Dreaming and Open Space) and to provide an example of active change by initiating several local projects. The initiative became a research theme on Integral Sustainability within the faculty's Climate Change Impacts and Management research group (CCIAM). This eventually led to the faculty becoming a founder member of ECOLISE in 2014.

4.5.3 Permaculture in Portugal

Permaculture is well established in Portugal, which according to the Worldwide Permaculture Network is one of the countries with the most projects per capita and unit land area.[186] The national RedeConvergir map lists 46 self-registered permaculture projects as of late May 2018, while the volunteer hosting websites Helpx and Workaway respectively listed 49 and 182 permaculture related projects in the country.[255] [256] The online social network Transition and Permaculture in Portugal was created in 2009.

Although there is no official national permaculture organisation, permaculture trainings have taken place in Portugal since the early 1990s, with a strong focus on supporting young neo-rural land managers to design their management plans and livelihoods; between January and October 2018 more than ten Permaculture Design Certificate trainings took place in the country.[257] According to research conducted within CCIAM at FCUL, projects are spread throughout Portugal and mostly located in rural areas, practitioners average around 35 years old, and around ten percent of projects derive all their income from permaculture related activities while nearly half lack any such income.[257]

Largely through CCIAM's collaborations with the national permaculture movement, Portugal has pioneered the successful integration of permaculture and scientific research. In 2016 the Lisbon University Science Faculty (FCUL) and Vale da Lama Permaculture Project co-hosted an international Permaculture Research Design course attended by over 40 people.[258] HortaFCUL, the science faculty's onsite permaculture garden, has existed for over 10 years as a permaculture Living Laboratory supporting masters and doctoral students wishing to do research on, for and as Permaculture.[259]

4.5.4 Ecovillages in Portugal

The Global Ecovillage Network (GEN) website lists 19 ecovillages in Portugal.[195] Portuguese ecovillages organise within RIE, the Red Ibérica de Ecoaldeas, which includes projects in Spain and Portugal. A summer meeting to connect like-minded people has been held annually in a different ecovillage every year since 1998. The Founding Assembly of the Iberian Ecovillage Network took place in Madrid in November 2011. Since then RIE has been working towards exchange of information and resources among

members of the network, other people and groups, as well as promoting ideas of ecovillages and sustainable living. Today RIE is a thriving network with 12 ecovillage members, five project members and 13 collaborating members, organised in a sociocratic structure. RIE has initiated an incubator program to support creation of new sustainability projects and communities.[260] RIE is also a full member of GEN-Europe, the European branch of the Global Ecovillage Network and a founding member of ECOLISE.

4.5.5 Community Energy in Portugal

Energy communities are rare in Portugal due to strong legislative barriers and lack of effective citizen action towards energy decentralisation. Currently just one decentralised community energy cooperative is operational. Coopérnico Cooperative was created in 2013 by 16 citizens concerned with sustainable development. The cooperative's vision is to move forward to a fair and responsible renewable energy model with the mission of involving as many citizens and enterprises as possible in the decentralised energy paradigm.[261] As of September 2018 the cooperative had successfully implemented 16 projects around the country, with a further two under development.[262]

4.5.6 Solidarity Economy in Portugal

The 2015 SUSY report on the Social Solidarity Economy notes its rapid growth in Portugal over the past 30 years and reports over 200,000 active supporters and several coordination initiatives, including the Portuguese Solidarity Economy Network (RedPES). Since 2010 the sector has been included in the national budget.[134]

4.5.7 Collaborations with Local Government

One finding of the CATALISE project was that only formal initiatives manage to communicate and collaborate with local government.[250] There is acknowledgement on the part of government as to the importance of community-led initiatives, but numerous obstacles to engagement: distance between high level policies and local realities, centralisation and control by local government limiting initiatives' capacity to participate in local projects, frequent delays in responding to initiatives' requests (for meetings, documents, and so on), demanding bureaucratic procedures (e.g., proposals, administration, reporting), poor communication between different public offices and difficulties accessing resources (funds, spaces).

4.6 Community-led Initiatives in Scotland

4.6.1 Scope of the Community Sector in Scotland

Community-led initiatives in Scotland predominantly organise at the level of Scotland rather than Britain and the UK. This reflects (in addition to geographical and cultural differences) significant financial and other support for community-level action on the part of the devolved Scottish administration, particularly through its Climate Challenge Fund. A number of different national networks exist, linking a wide variety of community initiatives.

The Scottish Community Alliance (SCA), officially constituted in 2010, connects 20 national and regional networks of community-based initiatives and projects under a shared vision of reinvigorating local democracy in order to create a more sustainable and inclusive society by empowering communities to take action on local issues. According to its website, its members represent organisations with well over 100,000 individual members, which employ 5,500 paid staff and 20,000 volunteers, own or manage 250,000 hectares of land and hundreds of buildings and generate a combined annual income of over £600 million.[497]

The SCA has developed a collective vision underpinned by four key principles:[498]

- Subsidiarity
- Self-determination
- Local by default
- Equality and fairness

A 2016 report by the SCA defined community groups as those that, whatever their size or formal structure, are associated with defined geographical areas (villages, towns, neighbourhoods) and led by and accountable to people who live and work there. The report identified over 30,000 such groups, making the community sector the largest part of Scotland's Third Sector (alongside 5,200 social enterprises and 23,000 regulated voluntary organisations).[498]

The Scottish Communities Climate Action Network (SCCAN), a member of both SCA and ECOLISE, emerged from a consultation process on barriers to community action on climate change, supported by the Scottish Climate Challenge Fund, during 2010 and 2012. Formed in 2012, SCCAN's purpose is to inspire, promote and support community-led climate action across Scotland.[499] Its members include well over 115 low-carbon community initiatives of diverse kinds, from community allotments to tool libraries, along with over 50 associate members working in support of these kinds of community groups and organisations. In autumn 2018, SCCAN opened up its membership offer to individuals who are supportive of community-led climate action and/or who would like to become part of or create new initiatives. As of February 2019, over 20 individuals had joined SCCAN.[500]

SCCAN's guiding vision is the result of a process of sharing of experiences and ideas by members organisations conducted in 2014. The resulting Climate Change Vision emphasises the following key principles:[501]

- Empowered democratic communities
- Vibrant local food culture
- Effective local energy
- Living locally
- Waste not
- Happy healthiness
- Practical training and education

4.6.2 Transition in Scotland

Scotland has operated its own national coordination structure or hub since 2010, when funding from the Scottish Government's Climate Challenge Fund supported operation of Transition Scotland Support. This ceased operation as a legal entity following cessation of funding in 2013-14, but maintained an active web presence and in 2018 became the national Transition hub for Scotland.[502] Transition Scotland and many Scottish Transition initiatives are also members of the broader Scottish Communities and Climate Action Network (SCCAN), which was among the ECOLISE founder members.[500] [383]

Transition Scotland's website categorises Transition initiatives in its network via a forest metaphor. Seeds are places where people are considering forming a Transition group, saplings are active but young groups in the early stages of their work that have either not yet decided whether to operate as Transition initiatives or not yet registered with the network, and trees are established and active initiatives. People active at network level are considered bees, who might live in one tree but cross-pollinate with ideas when they visit other places and work with different initiatives. The website also lists seven 'fallen trees', initiatives that were once active but have ceased to operate, and which might continue to nourish the soil with their knowledge and experience. In September 2018 it listed 13 active and mature initiatives.[503]

4.6.3 Permaculture in Scotland

Permaculture Scotland is a working group within the Permaculture Association (Britain) supporting a strategic network of permaculture practitioners in Scotland. It holds regular meetings and gatherings and coordinates Scottish activity within the LAND network of permaculture demonstration sites across Britain.[504] The SCOTland network of permaculture learning and demonstration sites across Scotland includes ten established SCOTland centres, along with eleven LAND learners (projects in the early stages of adopting permaculture intending to progress to meeting the criteria for becoming land centres).[505]

4.6.4 Community Food Production and Land Management in Scotland

The 2016 SCA Report states that there are over 200 allotment sites in Scotland, on which over 6,000 plots produce enough food for 20,000 people. It also reports over 200,000 hectares of land, home to 25,000 people, under community ownership, with an additional 100,000 hectares of woodlands owned or managed by community woodlands groups, over 200 in number.[498]

Scotland is home to an active land reform movement, exemplified by a historic community buyout by local residents of the Isle of Eigg off the west coast in 1997 by residents seeking to take local development into their own hands. Since then a situation of general unemployment and livelihood insecurity has markedly improved, the population has increased and the local community is actively involved in all major decisions. Concrete improvements include an island-wide community-owned renewable energy grid, renovation of homes, construction of new multipurpose community facilities, replacement of low density conifer monocultures with native mixed woodland, a community-owned broadband network and increasing numbers and success of locally owned businesses.[506]

4.6.5 Community Energy in Scotland

According to the 2016 SCA report, Scotland has 23 megawatts of installed renewable capacity in community ownership, which along with further projects under development will generate annual revenues of £15 million for community funds.[498] In 2018, the Local Energy Scotland website listed more than 600 energy projects in Scotland either directly under local ownership or run with community involvement.[507]

Community energy ownership has been actively supported since 2003 and the sector has seen huge growth since 2008.[508] Community Energy Scotland, originally incubated in the Scottish government's economic and community development programmes, was incorporated as an independent company and charity in 2007 in order to support communities in renewable energy development and energy saving, and has 400 member organisations.[509] National support for community energy was increased in 2011, when the Scottish Government introduced additional measures to help communities benefit from developments in renewables and set a target of 500 MW from community-owned and locally-owned renewable energy schemes by 2020.[508] This target was met in 2016.[510] It has since been followed by a target of 1GW of community and local energy by 2020.[507]

Local Energy Scotland, a consortium made up of the Energy Saving Trust, Changeworks, The Energy Agency, SCARF and The Wise Group, manages the Scottish Government's Community and Renewable Energy Scheme, which is the main funding programme for community energy in Scotland. It also provides advice and funding in all aspects of local and renewable energy, case studies and the CARES Toolkit which guides communities through the process of developing a renewable energy project.[507]

The 2017 Scottish Energy Strategy named community energy as one of its six main priorities to achieve the Scottish Government's vision for the future energy system in Scotland. It identifies as current priorities the expansion of community energy into more densely populated and urban areas, and identification of sustainable, replicable commercial models in order to allow strategic, larger scale projects.[507] However, reduced levels of financial support at UK level along with technical barriers mean the rate of community energy development in Scotland has slowed considerably since 2015.[511]

4.6.6 Barriers Faced by Community-led Initiatives in Scotland

Interviews with a range of key stakeholders conducted during the TESS project in 2015 and 2016 revealed that, despite relatively high levels of government support, community-led initiatives in Scotland experience a strong sense of disempowerment and lack of agency resulting from highly concentrated patterns of private land ownership and very weak local government representation.[512] According to a 2014 report by the Commission on Strengthening Local Democracy, Scotland is reported to have fewer elected representatives per capita than any country in Europe, and local authorities have very low levels of fiscal and decision-making authority.[513] In response to the effects of the most concentrated pattern of land ownership in Europe and neglect or obstruction on the part of absentee landlords, increasing numbers of local communities have taken advantage of the Land Reform Act of 2003 to bring land under community control and, in many cases, out of the restrictions of capitalist logic.[514]

The 2016 report by the Scottish Community Alliance highlighted significant barriers to effective community action resulting from systematic disempowerment in various areas, including decision-making processes, allocation of budgetary responsibilities, and the failure of centralised and top-down models of service provision and economic and social regeneration. The report recommends actions in three key areas: local democracy, public services, and the community sector itself:[498]

- Local democracy:
  - New units of political representation that better reflect social geography and genuinely empower communities to contribute to decisions that affect them
  - Central involvement of affected communities in planning processes
- Public services:
  - 'Local by default' commissioning of public services
  - Bespoke support for community and cooperative enterprises in order to develop local capacity to deliver public services
  - Transfer of public assets into community ownership and/or management
- Capacity building in the community sector via:
  - Sustained investment in community anchors: organisations that provide a focal point for action within their community and support to other, less well-organised groups
  - A national programme of support, encouragement and training for community leaders
  - Support for self-organising community networks, enabling them both to serve member communities better and provide a link between the community sector and national government
  - Establishment of a national infrastructure for community development

4.7 Community-led Initiatives in Sweden

4.7.1 Transition in Sweden

The national Transition hub for Sweden, Omställningsnätverket, an association educating, encouraging and supporting local change initiatives, was founded in 2013 and is a member of ECOLISE. During 2018, the Swedish Transition network was in the process of identifying existing local initiatives. At the time of writing, 47 transition groups from all over Sweden have made themselves visible by creating their own Facebook groups. The local initiative Omställning Järna is also a member of ECOLISE.

Hela Sverige (Rural Sweden) is a national civil society organisation for rural development working towards vibrant local communities, closely linked to the national Transition network. It includes 24 county networks serving 5000 local community groups and 40 member organisations.[263] Studiefrämjandet (Study Promotion) is one of Sweden's biggest educational associations and collaborates closely with the Swedish Transition network. Studiefrämjandet delivers and supports a wide range of study circles, courses, cultural arrangements and lectures with focus on increased understanding of nature, animals, environment and culture.[264]

Every year the Transition Network in Sweden organises a national conference at which board members hold their annual meeting. The 2018 conference was held in Malmö between 5-7 October with the theme *How can diversity be a tool for real transition?*[265]

In recent years a number of Folk High Schools (Folkhögskola) in Sweden have introduced courses related to Transition, including permaculture, eco-building and similar subjects. In 2017 Eskilstunafolkhögskola

started a One Year in Transition (1YT) course inspired by the equivalent course initiated by Transition Network in Totnes.[266] Färnebo Folkhögskola, north of Uppsala, also proposes a one year course Omställningspiloterna (Transition pilots), which includes modules on self-sufficiency, local economy, agroforestry, permaculture and related topics.[267] Holma Folkhögskola near Lund is unique in that all its courses are related to Transition.[268]

4.7.2 Permaculture in Sweden

The Swedish Permaculture Association Permakultur Sverige, a member of ECOLISE, lists 33 projects in Sweden and local networks in Stockholm County, Skåne and Bohuslän. The association aims to "show what permaculture is", "adapt and develop permaculture under Swedish conditions", support new and established projects and connect to the international permaculture movement.[269] Ridgedale Farm AB, a working farm and educational site for permaculture and more in Värmland, offers a wide range of trainings and services.

4.7.3 Ecovillages in Sweden

Ecovillages in Sweden are organised as the National Network Ekobyarnas Riksorganisation (ERO). The mission of ERO is “working to provide ecovillages and other forms of communities in their pursuit of a sustainable lifestyle and development, opportunities to network and finding collaborations both nationally and internationally”.[270] According to the statutes of the association, ERO is managed by a board which is required to plan and lead activities and to create an annual report on activities and financial management for presentation at the Annual General Meeting. The Stockholm-based board consists of nine members, elected for the 2017-18 period.

The Global Ecovillage Network (GEN) website lists 25 Swedish ecovillages, reflecting projects that have voluntarily self-registered.[195] ERO operates its own map of ecovillage projects, which shows a high concentration in central and southern Sweden.[271]

ERO Sweden is part of the Baltic Ecovillage Network (BEN), an association connecting projects around the Baltic Sea that is operated by a board of 11 representatives of its member countries. ERO Sweden is also a full member of GEN-Europe, the European branch of the Global Ecovillage Network.

4.7.4 Community Supported Agriculture (CSA) in Sweden

According to URGENCI, the International Network for Community Supported Agriculture, the first CSA initiative in Sweden began in 2001.[272] The national association Andelsjordbruk Sverige (CSA Sweden), launched in 2015, lists 15 CSA initiatives, mostly located in rural areas.[234]

5. Achievements and Potential of Community-led Initiatives

CLIs achieve many impacts including ecological, social and economic. Initiatives such as the El Puma social currency in Seville, Spain foster local economies. **Photo: Transition Spain**

5.1 Diffusion and Growth of Community-led Initiatives

The ARTS research project identified five mechanisms for achieving acceleration and growth of local transitions through community-led action:[15]

- Upscaling: increasing numbers of members, supporters or users of a single initiative
- Replicating: creation of a similar initiative in another location
- Partnering: creating and mobilising synergies by pooling and/or complementing resources, tangible and intangible (e.g. capacities and competences)
- Instrumentalising: accessing and deploying resources towards achieving the initiative's goals
- Embedding: integrating initiatives' novel ways of doing, organising and thinking into existing governance patterns

Initiatives studied in both ARTS and the TESS research project consistently favoured replication over upscaling.[157] According to findings from ARTS, this allows initiatives to avoid expanding beyond a certain threshold, but expand their reach by inspiring and/or facilitating replication. It appears to be common among food cooperatives and non-profit initiatives working with volunteers, less so in the field of renewable energy where economies of scale help to reduce costs.[15] Almost half of 63 TESS case study initiatives in six EU countries originated via replication of existing groups or initiatives elsewhere.[15]

5.1.1 Interactions among Movements and Initiatives

Close linkages exist among different movements of CLIs, many of which intersect and can be indistinguishable at local or regional levels.

Transition began as an offshoot of the permaculture movement, as a final project on community-based responses to peak oil by students on a two-year permaculture design course at Kinsale Further Education College in Ireland.[123] Many Transition groups were or are started by permaculture practitioners seeking to work more effectively within their community, while many people are motivated to take permaculture training by their involvement in a Transition group. In fact, many Transition initiatives run or host regular permaculture courses as part of their work, and in some places the two movements are very closely linked through common personnel, organisations or projects. For example, the Centre for Ecological Learning, Luxembourg (CELL) acts as a regional hub for both Transition and permaculture, acting as host organisation for the Luxembourg Transition Hub and delivering and coordinating permaculture trainings and projects nationally. At local level, this pattern can be seen in Bristol, South West England, which became the first Transition city when permaculture teacher Sarah Pugh set up Transition Bristol in 2007. Sarah subsequently founded Shift Bristol as a permaculture-based training organisation equipping with the people with the practical skills in sustainability, training 20 people per year and contributing to the proliferation of permaculture, food growing, transition, solidarity economy and other projects across the city.[90]

Ecovillage also have close linkages with both Transition and permaculture. Many are initiated by permaculture practitioners as a route to deeper commitment to a sustainable lifestyle.[273] Ecovillages and other intentional communities commonly apply permaculture design in their layout, building design, site management, social processes and operations. Many also host permaculture courses and related trainings, and some versions of the Ecovillage Design Education course include substantial permaculture components. Transition can be seen as form of diffusion of the ecovillage concept to urban settings.[106] Dense networks of transition and permaculture activity in urban and suburban areas can create a form of 'distributed ecovillage', interwoven with conventional infrastructure and lifestyles and creating new possibilities for transformative change.[105]

Research at initiative level shows that in many places Transition built upon, and reinvigorated, pre-existing initiatives, networks and movements. In a 2009 survey of 74 Transition groups in the UK, 19.2% of responding initiatives reported that one or more pre-existing groups were involved in their establishment.[83] Half of the 276 Transition initiatives worldwide responding to a 2012 survey reported that they had been founded on the basis of a pre-existing group.[84] Particularly in the UK, the close association between Transition's origins and permaculture meant that many of the earliest adopters were permaculture teachers. In many places, Transition and permaculture remain closely linked, both conceptually and in practice.[124] In the 2013 survey by Reading University, 82 per cent of responding initiatives included in their steering group someone who had undertaken permaculture training or had permaculture knowledge (compared to 71 per cent in which at least one steering group member had

attended a Transition training), with an average of two steering group members with some form of permaculture training and three with some form of Transition training.[84] Other common precursors to Transition initiatives include Local Agenda 21 groups[143] and the Relocalization Network in the USA.[87]

5.2 Success and Failure of Community-led Initiatives

Many different criteria for success and failure of community-led initiatives are in use, drawing on a combination of internal and external factors. Evaluation methodologies also vary, depending on what is to be evaluated, by whom and for what reason, and give different, often complementary, insights into the work and achievements of CLIs. Non-linear developmental trajectories and complex cross-scale effects mitigate against drawing simple and clear conclusions from such assessments.[282]

5.2.1 Defining 'Success'

Reviewing the literature, Feola and Nunes (2014) identify the following factors widely recognised as indicators of success of community-led initiatives (CLIs):[84]

- Within their local community:
  - The strength and quality of their social linkages
  - Their resulting contributions to building capacity and empowering social actors
- Their external impacts, in terms of their contributions to either or both of:
  - Achieving identified environmental and/or social goals
  - Creating alternative trajectories of systemic change

The TESS research project, based on a survey of CLIs across Europe and extensive case study research in several countries, defined success in relation to one or more of the following criteria (see also Figure 5.1):[274]

- Their emergence in response to clearly articulated socio-environmental needs
- Their continued existence, or survival, and consequent continued, perhaps increasing, contribution to meeting those socio-environmental needs within the community
- Their growth and/or replication, and hence increased impact upon society's socio-environmental needs
- Their use and dissemination of new technologies and business models
- Their contributions to social and/or environmental justice

Figure 5.1. Factors influencing the emergence, persistence and survival of CLIs identified in the TESS Project.[15]

Feola and Nunes' major study of success and failure of Transition initiatives showed them to define success in terms of four types of factors:

- Human: ability to attract and retain sufficient active volunteers and members
- External: ability to realise concrete practical outcomes in the community
- Organisation: ability to generate a positive and ambitious outlook, thus sustaining motivation and enthusiasm
- Resources: ability to promote participation by generating positivity, fun, conviviality and a sense of community

The researchers noted that members of Transition initiatives tend to focus on internal rather than external factors, and cautiously attributed this to perceptions, skills and/or priorities characteristic of initiatives in relatively early stages of development.[84]

5.2.2 Measuring Success

The diversity of potential criteria for success, and the varied perspectives and interests they reflect, suggests a need for similar diversity in how success is measured. Approaches to monitoring and evaluation of community-led initiatives have accordingly taken very different forms, depending on their goals.

Successful approaches targeted at self-evaluation by initiatives have generally emphasised empowerment and flexibility, seeking to provide CLIs with appropriate tools along with guidance and facilitation for their successful application.[9] Accordingly, Transition Network, in collaboration with the Low Carbon Communities Network, Transition Research Network and researchers at Oxford University, developed a set of guidelines for monitoring and evaluation that introduces community groups to a range of potentially useful tools.[8]

In a similar vein, the 'resilience compass' is a tool designed to help communities self-evaluate their own community resilience, taking into account four key dimensions:

- Healthy and engaged people
- Creating a more localised economy within ecological limits
- Cross-community links
- Building a creative, inclusive culture.[275]

CLIs' own methodologies often incorporate forms of self-evaluation. Most approaches in permaculture employ iterative design cycles whose steps include monitoring outcomes, evaluating them according to initial goals, and on that basis adjusting methods and/or strategy; the same methods can also form the basis of more formal evaluation and/or research.[21] Transition Network developed the Transition Health Check as a simple self-evaluation tool for Transition initiatives, based on seven essential ingredients of Transition shown by experience to be essential for well-functioning groups. These ingredients encompass the internal structure and dynamics of the group as well as its visible achievements in the wider community.[276]

Tools also exist for community groups to self-evaluate according to their contributions to external goals, in particular reductions in carbon emissions. Examples include the Track-it Tool developed by the TESS research project, which allows community groups to calculate emissions reductions associated with changes relating to transport, food, water and energy generation. Global Ecovillage Network has created a series of impact assessment tools for ecovillages, the latest version of which is based on the Sustainable Development Goals (see Chapter 6.2).[23]

Movement-wide evaluations have also used various methods, often in combination. A researcher-led survey of the Transition movement in 2013 combined use of subjective measures (respondents' opinions concerning appropriate measures of success and self-evaluation of their own initiatives' performance) with more objective assessments based on duration, numbers of participants, and progress towards achieving the 'Twelve steps of Transition'.[84] The TESS research project also combined subjective measures with generation and collation of quantitative data in areas such as climate change mitigation and social and economic impacts.[277]

External evaluations at initiative and project level have also often produced useful results and insights. An external team of academic evaluators conducted a successful evaluation of community growing project Incredible Edible Todmorden in England using Social Return on Investment methodology.[278] Evaluation of Transition Streets required in connection with its receipt of a government grant, conducted partly by

members of the project team and partly by external consultants, combined quantitative measures of participation, renewable energy installations, emissions savings and financial benefits[279] with qualitative data on social benefits based on the subjective impressions of participants.[280] Another external assessment conducted by public health researchers at Plymouth University and NHS Devon used a standard Health Impact Assessment methodology, and concluded that the methods used to reduce carbon footprints had wider benefits in terms of social cohesion and environmental quality, with associated positive effects on physical and mental health.[281]

5.2.3 Success and Failure of Transition Initiatives

A specific in-depth study by researchers at Reading University assessed the success and failure of Transition initiatives, and remains the most comprehensive study of its kind.[84]

A key conclusion was that, despite their connection with wider (national and international) networks, the major factors influencing specific transition initiatives are situated and place-specific. The success and failure of Transition initiatives, and most likely other community initiatives, are therefore determined largely by local contextual factors.

Their research found successful Transition initiatives generally to share certain features, in relation both to organisational structure and to geographical location:

- Organisation:
  - Transition training and/or permaculture training among steering group members
  - Organised around sub-groups, for example based on themes or projects
  - A tendency to have larger steering groups and higher time investment from steering group members, relative to less successful initiatives
  - Having good connections with and reputation among other local actors, often leading to ability to mobilise funding from external sources
- Geographic location and diversity:
  - Mostly located in villages, rural areas or towns
  - Diversity of membership correlates strongly with success for urban and city-based initiatives, but not for initiatives in other kinds of location

5.2.4 Effects of Scale

Examination of approaches to monitoring and evaluation in the Transition movement identified possible contradictions between different scales of analysis. Short-term, locally specific measures of success such as whether an initiative persists, numbers of members and other beneficiaries, and outcomes of specific projects, may not relate in any simple or predictable way to long-term and systemic factors such as climate change mitigation and community resilience.[282] Additionally, factors behind the success of local initiatives may be specific to that context, while the root causes of many global issues lie in structural factors beyond the possible scope at which community-scale action can exert direct impacts.[283]

Numerous empirical cases illustrate this point. A study of several different networks of community-led initiatives in Bonn, Germany, found a common emphasis on *salutogenesis:* creation of immediate social

and/or physical environments consistent with the values and goals of protagonists, hence providing a *sense of coherence* conducive to meaningful action.[284] Researchers have suggested that for Transition initiatives and others rooted in established communities of place - and therefore in some ways more exposed to structural constraints than residents of ecovillages and other intentional communities - their real value may lie less in concrete achievements but in their ability to inspire and contribute to transformative action at higher scales.[285] In the field of urban transition studies, for example, it has been noted that Transition initiatives are distinctive among urban sustainability actors in that they take a working assumption that collapse of incumbent social-technical regimes is inevitable (due to climate change and declining energy availability), rather than working within and seeking to perpetuate these regimes.[107] A related suggestion about ecovillages suggests that their long experience and established practice in creating salutogenetic environments is a key factor empowering individuals and groups within the ecovillage movement to more effectively promote action towards transformative political and structural change.[286] In every case, actions at different scales and in different geographical locations are complementary, but not in ways that straightforwardly illuminate relationships between immediate measures of success and potential (or even realised) contributions to wider issues.

5.3 Enablers and Constraints Affecting Community-led Initiatives

Enablers and constraints affecting community-led initiatives include general and place-specific factors, and can be either internal to the initiative or reflect external conditions. Many common patterns can be observed across different types of initiatives. Key factors include local circumstances, perceived efficacy of government action on environmental and social issues, local and translocal networking and collaboration, political conditions, and legal and institutional arrangements.

5.3.1 General Enabling Factors

Research on establishment of community-led initiatives (CLIs) has identified several key factors that stimulate their creation. Some are restricted to or more common in particular locations or countries, others recur internationally.

Figure 5.2 summarises factors enabling the emergence and persistence of CLIs identified in the TESS research project, whose international comparison of CLIs covered Germany, parts of Italy, Spain, Scotland, Finland and Romania.

Important Factors for Community-Based Initiatives'...	
...Emergence	...Development
A vacuum in the socio-political field	A diversity of aspirations
Aspirations for economic and political autonomy	An adaptive organisational structure
A shared history of community-level social organisation	Diversity of political and income-generating strategies
A supportive, or non-constraining, institutional environment	Strategic, targeted collaborations with public sector institutions

Figure 5.2. Enabling Factors for CLIs identified in the TESS Project. Source:[287] based on. [274]

<table>
<tr><th></th><th>Social</th><th>Political</th><th>Economic</th><th>Technological</th></tr>
<tr><td>Drive</td><td colspan="4">[Self-assessment: initiatives' initial and future objectives, degree of achievement]</td></tr>
<tr><td rowspan="5">Process</td><td colspan="4">Enrolment: ability to involve and to mobilise people, communities, actors, resources</td></tr>
<tr><td>(Bonding) social capital</td><td rowspan="3">Political mobilisation (a): alliances/coalitions building</td><td>Financial sustainability: surplus creation and revenue diversification</td><td>Technical complexity: skills/technologies required</td></tr>
<tr><td>Bridging social capital</td><td rowspan="2">Organisational effectiveness: organisational adequacy and flexibility</td><td rowspan="2">Knowledge effort: skills gained/acquired</td></tr>
<tr><td>Social inclusion and equity (1): consideration of local needs</td></tr>
<tr><td colspan="4">External networking</td></tr>
<tr><td>(Bridging relationships with non-members)</td><td>Degree of interaction with: 1) other CLIs, 2) Stakeholders</td><td>(Pooling of assets and resources)</td><td>(Innovation networks and diffusion)</td></tr>
<tr><td rowspan="5">Output</td><td>Social inclusion and equity (2): heterogeneity of beneficiaries</td><td>Political mobilisation (b): influence on political agendas</td><td>Ability to deliver direct/ indirect Economic benefits</td><td>Innovativeness: Experimentation/creation of new products/services</td></tr>
<tr><td colspan="2">Empowerment</td><td rowspan="2">Local economic impact: Direct/indirect contribution to the local economy</td><td>Human capital externalities: learning occasions/spillover</td></tr>
<tr><td>(1) Enhancing self- and social awareness</td><td>(2) Openness of decision-making</td><td>Social innovation: changes in practices/ lifestyles</td></tr>
<tr><td colspan="4">Internal External</td></tr>
</table>

Figure 5.3. Key drivers for establishment of community-led initiatives identified by participants. Source: [288] based on. [274]

Key factors identified in various research projects can be allocated to a number of categories:

Local Collaboration

Active collaboration with local authorities appeared to be a key factor for TESS case study initiatives in Italy, but less so in the other countries studied. For example, many Finnish CLIs actively avoided such collaboration in order to assert or maintain autonomy.[176] Overall, the TESS project concluded that while most CLIs regard collaboration with public institutions as a low priority, such collaboration is often frequent, intense and important. However, these relationships in many cases appear problematic, with 62 percent of CLIs reporting some kind of constraint arising from public policies, including legislative constraints, difficulties accessing public funding and generally unsupportive policy environments.[157]

Several studies of initiatives in the Transition movement show their establishment often depends on informal local collaboration. Half of 276 initiatives responding to a worldwide survey in 2013 reported a pre-existing local group to have in some way been involved in their creation,[84] for example Local Agenda 21 groups in Portugal[143] and the UK,[83] and the Relocalization Network in the USA.[87]

Social Links

Case study initiatives in the TESS project, particularly in Spain, Italy and Germany, emphasised the importance of social links, for example those between producers and consumers in projects where this is relevant.[176] Establishment of community renewable energy projects, for example, often relies on creation of a 'virtuous social-technical loop', where mobilisation of local social ties creates initial demand for technological change, which when realised encourages further recruitment.[289] The importance of networking among local actors, especially among CLIs and other grassroots innovations, to strengthen processes of building niches (the alternative structures - social, cultural, institutional and/or economic - within which CLIs seek to operate), has been noted for both community currencies[290] and community energy projects.[291]

Failure of Dominant Regimes

Significant motivating factors for TESS case study CLIs in Germany included perceived failure on the part of government to take effective action on preventing food waste and promoting transition to renewable energy sources.[176] In some cases, creation of CLIs is motivated by a wish to undertake actions considered socially and environmentally legitimate but formally illegal. This was the case with many TESS case study initiatives in Germany. Such 'uncivil' initiatives often complement 'civil' initiatives working within legal and institutional frameworks and more conventional societal expectations, and gain popular legitimacy through informal local collaboration. This is the case with many 'rurban' squats on the periphery of Barcelona, who offer a variety of amenities and services to local residents.[74] Many community gardens in Madrid began as technically illegal occupations of unused urban land; having become important spaces for regenerating social relationships at neighbourhood level and public reimagining of and action upon the nature of urban public space they have since been officially recognised by city authorities.[292]

Wider Networking and Collaboration

A number of key studies, along with the first hand experience of many practitioners in CLIs, indicate the value of working within wider networks.[290] The diffusion and growth of CLIs are greatly enhanced by the existence of networks for sharing knowledge, information and experience, both directly via social connections, network-level events, visits, workshops and trainings, and indirectly via passive inspiration and active circulation of enabling media.[87]

Based on case studies of 20 key networks and movements of transformative social innovation initiatives, the TRANSIT research project concluded that the scope of such initiatives to contribute to transformative change depends crucially on their capacity to form and operate within translocal and transnational networks of other such initiatives and their supporters.[293] In the permaculture, ecovillage and Transition movements, ongoing processes of social learning - formal, informal and non-formal and at all scales - are key to their successful operation as mutually enabling networks and integral parts of their operational methodologies.[294] By adopting knowledge and learning as a key strategic pillar, the ECOLISE network of European CLIs seeks to support, enable, diversify, deepen and strengthen these learning processes.

5.3.2 Policy Enablers and Constraints

Interviews conducted in the TESS project reflected the point in the previous section about the ambivalent effects of political factors. Of 63 case study initiatives studied, nearly half considered that their establishment or development had benefited from some form of supportive policy regulation, while a larger number (39) considered that policy regulations had to some degree hindered them. On this basis, and taking into account that some initiatives considered policy to have provided both opportunities and barriers, researchers suggested a fourfold categorisation of policy contexts:[176]

- Policy support without obstacles (best)
- Policy support accompanied by some obstacles
- Absence of policy support and of policy obstacles
- Absence of policy support along with existence of policy obstacles (worst)

Further questioning as to the scale of these policy effects showed that policy enablers were fairly evenly distributed across scales, with slightly larger numbers reported at local than national and EU levels. Policy barriers were far more commonly reported at local level: by 34 responding CLIs compared with only nine and four at national and EU levels respectively.[176]

Initiatives reporting policy enablers located them in four main areas (not mutually exclusive):[176]

- Access to property (land, assets, buildings)
- Economic factors: tax benefits, financial incentives, support for enterprise
- Community or social development
- Regulations concerning environment, transport and/or food

Categorisation of policy barriers also identified four main areas, again not mutually exclusive:[176]

- Rules and bureaucracy concerning state aid and/or funding
- Property, public spaces and legal regulations
- Regulations concerning organisational structure, employment and/or volunteering
- Regulations concerning environment, transport or health and hygiene

An example of an enabling policy context is that of the Vauban eco-district in Freiburg, Germany, in which a unique top-down and bottom-up participatory city planning process involving the city council, the city administration and representative citizens enabled the 'Forum Vauban' initiative to reach its goal of building an ecological neighbourhood.[295]

TESS case study research in Germany showed that in some cases temporary windows of institutional opportunity, such as a change in procedures for operating power networks in German cities, were crucial factors for the establishment and success of CLIs.[176]

5.3.3 Legal Enablers and Constraints

Both the direct experiences of CLIs and findings from formal research indicate that the organisational structures and legal forms adopted by CLIs affect in important ways their possibilities for action, relationships with wider context (particularly governmental and other formal bodies) and prospects of future growth.[15] Most need to adopt some sort of legally recognised formal structure in order to be visible to and engage with existing institutional structures. Those that decide not to constitute themselves as a legal entity often find their ability to access funding and other support restricted, as has been the case for The Living Knowledge Network of public science initiatives.[296]

Research suggests an ambiguous relationship between organisational form and success. On the one hand, adopting a recognised legal form is a means of embedding that can integrate CLIs into existing structures and strengthen their ability to change outdated ways of doing, organising and thinking, at the same time as it enhances their prospects of long-term survival. On the other, it may lead to rigid obligations to official institutions of kinds that restrict possibilities for long-term action.[15] Case study initiatives in the TESS research project report trade-offs between adhering to a legal structure and organising so as to allow more informal operational formats, with implications for outreach and inclusivity.[176]

Initiatives and movements involved in the TRANSIT research project reported various regulatory conditions, often specific to their particular context. Credit unions are affected by financial regulations, and may be restricted by measures associated with stricter public regulation of banks. Co-housing projects (and often ecovillages) are bound by legal frameworks pertaining to the construction and management of housing. Agroecology, local food and food sovereignty initiatives and networks, such as Seed Exchange in Hungary, need to follow EU and national laws concerning sale and exchange of seeds, while the Shareable network of city-based sharing initiatives is bound by rules concerning competition.[296]

5.3.4 Resource Constraints

All CLIs face ongoing challenges and dilemmas regarding how to resource their work and sustain activity without compromising their core values and ability to deliver on key aims and objectives. Most rely on a combination of monetary and non-monetary inputs, including substantial voluntary labour, each of which raises its own set of dilemmas and constraints. A key tension is the need to operate professionally and effectively without compromising inclusivity and responsiveness to community needs, for example by becoming too focused on delivery of specific income-generating activities, funded projects, or donors' requirements. Many CLIs have adopted new forms of enterprise (community-led, solidarity and/or regenerative) as vehicles for delivering key projects, or for the CLI as a whole, to help resolve these dilemmas. Resourcing thus raises a wide spectrum of possible enablers and constraints, whose exact nature will depend on the choices, aims and context of any specific CLI. Section 5.4 considers these issues in more depth.

5.4 Resourcing of Community-led Initiatives

Resourcing of community-led initiatives usually depends on a combination of monetary and non-monetary inputs, with voluntary labour key among the latter. Specific CLIs adopt a range of strategies, from minimal or low reliance on monetary resources to entrepreneurial approaches where CLIs, or key projects within them, operate as forms of social, solidarity and/or regenerative enterprises. All approaches raise pervasive dilemmas, on which different CLIs adopt different positions.

5.4.1 Financial Performance

Although operating on a not-for-profit basis, and in many cases predominantly relying on non-monetary resources, CLIs do need to cover expenses associated with their activities and ensure they are financially sustainable. In a survey of the financial performance of CLIs undertaken in the TESS project, the majority of initiatives (76.19%) reported that they had managed to cover their costs during 2014, compared with 23.81% who did not. Of those who reported they had covered their costs, more than half held a financial surplus, while a third did not.[176]

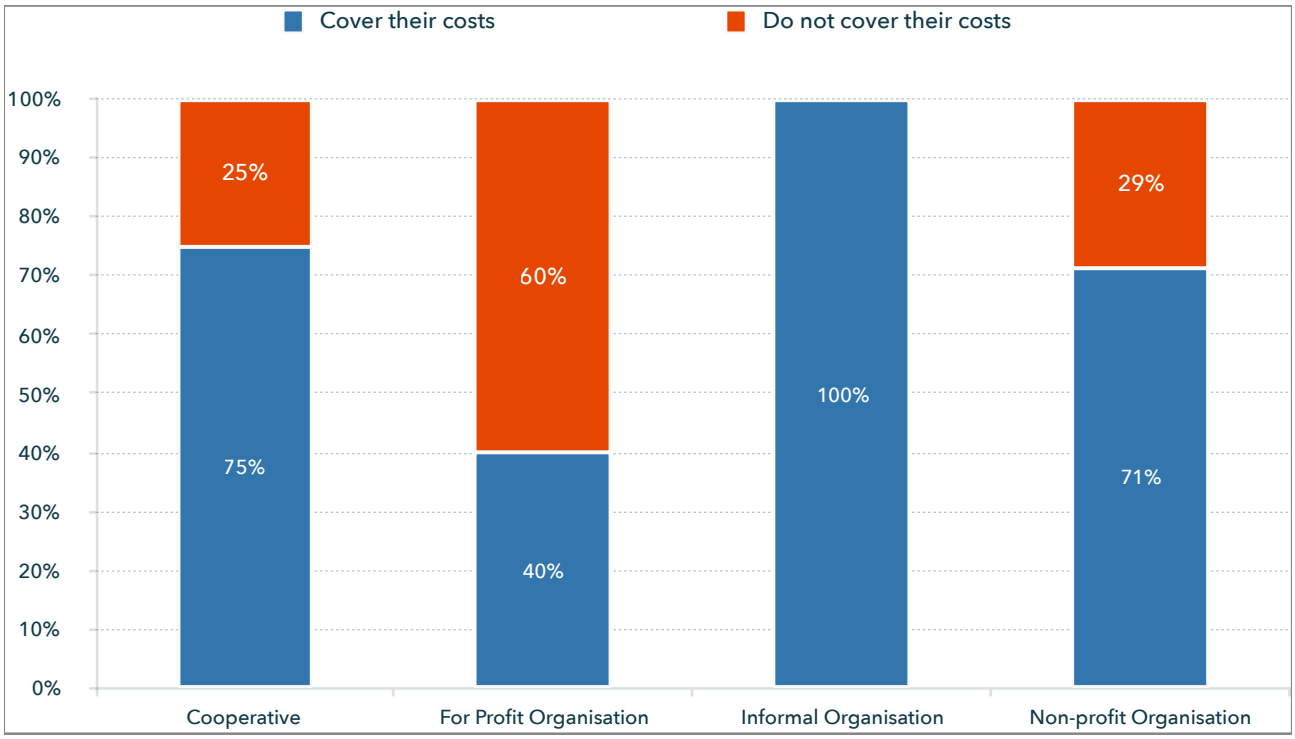

Figure 5.4. Ability of CLIs studied in the TESS Project to cover their costs. Source: [176]

5.4.2 Revenue Sources

CLIs investigated in the TESS, ARTS and PATHWAYS projects approach income generation in various ways. Most report that they experience difficulties in accessing public funding, and that their financial stability relies extensively on contributions from members, including keeping costs down through voluntary labour.[15]

According to findings from TESS:[176]

- 41.0% of case study CLIs reported that they rely on internal sources of revenue, usually in the form of fees, subscriptions and membership charges
- 31.7% reported that they charge annual fees
- 17.5% reported that they charge membership fees
- 12.7% reported that they ask for additional contributions from members
- 46% reported that they did not request any financial input from members
- 27.5% reported reliance on external sources, including cash donations, inheritances and the like, along with sale of goods and services

Of 20 networks studied in the TRANSIT research project, most reported membership fees to be a source of income. Other funding sources included private donations, project-based grants and/or subsidies, governmental and/or intergovernmental funding, sales of products and services, and revenues generated through events. For some networks, revenue generation is integrated into the work of their member initiatives (e.g. rental for co-housing projects, banking and financial services for credit unions).[296]

These research projects reported mixed findings concerning the relationship between ability to raise external funding in order to secure financial sustainability and other measures of success. Economic success was often achieved at the cost of becoming less responsive to the needs of the local community. In addition, reliance on grant funding from whatever source in many cases led to grant dependency, making projects and initiatives vulnerable to withdrawal of funding, change in funders' requirements, interference from donors or investors and the effects of policy constraints.[15] Many TESS case study initiatives reliant on financial or in-kind contributions from participants and/or community members noted that this increases their accountability, as those contributing this way wish to know the organisation is effective in accomplishing its goals.[176]

In a 2013 survey of Transition initiatives,[84] sixty percent of respondents said they actively raised funds. Those doing so used one or more of the following mechanisms: grant applications, lotteries, public or private sponsorship, fundraising events and the sale of self-produced goods. 49 initiatives reported that they received external funding from local authorities, 46 through donations and sponsorships, and 35 through fundraising events and/or sale of self-produced products. Those without external funds usually reported a reliance on voluntary donations from members.

Case study CLIs in the TESS project consistently reported a preference for income-generating projects over grant-based funding. Some reported a clash between the time and effort required for fundraising and associated administration and delivery of their core work; some Romanian initiatives resolved this by deciding not to pursue funding for projects. Others for whom project-based grant funding is an important revenue stream, especially in Scotland, Spain and Finland, experienced tensions between the high levels of technical planning necessary to deliver tangible outcomes and the ongoing engagement necessary to remain responsive to more general community needs. Some CLIs, especially in Italy, seek to avoid use of money altogether in favour of free, solidarity-based access to services, in order to maximise inclusion, particularly of economically disadvantaged people.[176]

5.4.3 Grant Funding and Coercive Isomorphism

While many CLIs rely on grant funding, or express an interest in accessing it, actual experiences of receiving funding are mixed. This is true both in terms of the experiences of individual CLIs, and at the level of funding programmes.

Reviews of several major government schemes to make grant funding available to community groups suggest that demands arising from the programmes' internal monitoring and evaluation requirements pressured participating CLIs to work in particular ways. In-depth ethnographic research with two Scottish CLIs funded by the national Climate Challenge Fund (CCF) identified three main sources of this: funding timescales (and the demands for tangible achievements within these), administrative demands, and competition for funding.[297]

Reliance on grant funding also stimulated competition among CLIs and related organisations. Consequences included a proliferation of funded groups with overlapping remits, siloed working, unnecessary duplication of effort, and in some cases secrecy and distrust among organisations and projects targeting the same funding sources. The overall result is that funding and other resources are deployed far less effectively, overall, than could be achieved via coordination and collaboration.[297]

Similarly, longitudinal research with a Transition initiative in a suburb of Edinburgh showed mixed consequences of receiving CCF funding. Although funds allowed the group to employ paid staff and step up certain activities, and greatly raised its profile, it also sapped the energy and enthusiasm of members. Central to this shift appears to be the CCF's requirement for quantitative evaluation of emissions savings, leading to an instrumental focus on carbon reduction and decline in attention to wider contextual factors, and a generally jaded feeling among both staff and volunteers.[298]

At the level of the CCF overall, this may have led to an accidental top-down imposition of both the belief that community is the appropriate locus of action on climate change, and of a particular model of community for achieving this. Because the funding and evaluation processes assumed 'community' to have particular qualities - and awarded funding to groups that matched these assumptions - models of community action emerged and spread that matched this normalised and governmentalised concept, rather than those best suited to the actual issues they sought to address.[299]

Such effects appear to be common to many forms of public funding for CLIs. Experiences over a range of funding programmes available to CLIs in Scotland, from local to international levels, show they consistently come accompanied by managerial and technical demands that favour some forms of CLI, and some activities, over others, and hence often undermine the more general activities and benefits of CLIs and many of their long-term aims.[300] Evaluation of both the CCF and another central government funding programme in England/Wales tends to confirm this: both reported that funded CLIs tended to focus on narrow technical measures rather than stimulating wider changes in perspective, understanding or behaviour in their communities.[301] [302]

Research in the TESS Project on CLIs in Berlin and elsewhere suggests that the ways involvement in funding programmes affect CLIs may be part of a more general phenomenon, known as *coercive isomorphism*, in which the demands of incumbent regimes in which CLIs operate constrain or otherwise shape their structure and activities. Resource dependence is a major factor: if CLIs wish to receive and deploy funds, they must usually adopt some sort of legal form, choosing from those already available. Maintaining any legal form implies particular administrative demands, to which the CLI must then respond, requiring certain skills, knowledge and levels of capacity, and perhaps themselves creating resource demands, for example if necessary administrative or legal support must be paid for.[303]

Pressures of all these types are experienced by ECOLISE, whose form of legal organisation is a not-for-profit association under Belgian law. They can be exaggerated by its central role in policy advocacy, which forces it to engage constructively with the political mainstream, and to a lesser degree its collaborations with universities and other large institutions in the field of knowledge and learning. The result is a constant and often creative tension between the requirements of sustaining a functioning organisation in relationship with often powerful regime actors, and the need for consistency with the aims and ethos of member networks generally committed to inclusive and non-hierarchical ways of working.[304] One mooted strategy for navigating this tension derives from the Three Horizons model: operating as a Second Horizon organisation able to mediate constructively between Third Horizon organisations representing outcomes of transformative processes and First Horizon organisations committed to business as usual.[305]

5.4.4 Entrepreneurship

For many CLIs and movements, entrepreneurship has become an increasingly important vehicle for financial sustainability. Entrepreneurship can enhance possibilities for financial autonomy and livelihood creation, at the same time as directly helping to shape local and regional economies. It also aligns movements such as permaculture, Transition and ecovillages more closely with the solidarity economy movement.

The KEEP Research Project, a collaboration between the Permaculture Association (Britain) and Kingston University Business School, undertook a preliminary survey of permaculture-inspired enterprises in the UK. It documented case studies in areas such as education, community work, software design, publishing, hospitality and mental health.[306] In terms of land-based permaculture enterprises, also in the UK the Ecological Land Co-op surveyed a number of businesses based on application of labour-intensive, regenerative methods on small land holdings (four hectares or less) and found them to combine financial sustainability not dependent on agricultural subsidies with provision of a range of environmental and social benefits, in all these respects comparing favourably with large-scale agro-industrial operations.[307]

The Reconomy project explores enterprise as a vehicle for delivery and growth of projects and initiatives in the Transition movement.[308] A report on 20 early examples of Transition-inspired social enterprise in the UK included businesses in community renewable energy, housing, transportation, finance, food production and many other areas, with a total annual turnover of GBP 3.5 million and collectively employing over 100 people.[309]

Many ecovillages operate as enterprises themselves, and/or host social, regenerative and solidarity enterprises of various kinds. This both provides them with financial sustainability as projects and communities, and helps cater for the financial and other material needs of residents.[310]

5.4.5 Volunteer Contributions

Most networks of CLIs studied in the TRANSIT research project reported a reliance on voluntary labour. Most also offer salaried roles, though in almost all cases the numbers of paid roles, and volume of paid work, are less than the number of volunteer positions and volume of voluntary work. The networks in which local initiatives operate often provide a collective resource that can generate opportunities for financially renumerated work.[296]

On the basis of figures provided by 58 participating CLIs in six countries, the TESS Project estimated that CLIs rely on an average labour input of 10 hours of paid and voluntary labour per beneficiary per month. In

most cases (64 percent), CLIs deploy less than one hour of labour per beneficiary, in nearly a quarter of responding cases the average monthly labour per beneficiary is between one and ten hours, while seven CLIs (12 percent) invested a monthly average of more than ten hours of work per beneficiary.[176]

TESS case study research revealed a number of common tensions arising from reliance on voluntary labour. CLIs in all participating countries reported an elusive balance between the intensive work needed to bring a project to a successful conclusion (and associated danger of burnout), and the risk of failing to achieve any tangible impacts when involvement is too superficial. A related dilemma, particularly noted by CLIs in Scotland and Germany, is that between relying on and giving responsibility to volunteers as opposed to the need for professional skills in key areas. This reflects a more general tension between inclusion, horizontality and empowerment on one hand, and efficiency on the other. Inclusion, supportive and empowering work environments, trust in participants' abilities and the scope to shape work demands around their interests, are all key to retaining and sustaining motivation of existing members and recruiting new people, but could prejudice an initiative's ability to make and implement key decisions at critical junctures. Many participants reported a general clash between the factors that enable initiation of a CLI and those favouring its growth beyond a small founding group of like-minded individuals to a wider membership possibly including people with different values and levels of commitment.[176]

5.5 Social and Economic Impacts of Community-led Initiatives

Anecdotal evidence and formal research both indicate strong positive social impacts of community-led initiatives. Emerging understanding of the means by which these impacts are achieved gives invaluable insights into how these benefits can be translated to wider society. Many practitioners and researchers point out that such impacts, which can include creation of long-term social capital, improvements in health and wellbeing, strengthening networks, and skills development and empowerment in local communities, are intangible in nature, resulting from relational and dynamic processes whose effects only become evident over the long term rather than simple cause and effect.[15]

5.5.1 Effects of CLIs on Social Capital

Much recent literature on CLIs shows them to be very effective in creating and mobilising social capital. CLIs tend to invest in interpersonal relationships, by promoting face-to-face meetings, activities and events as well as social relationships. The TESS research project recorded an average of seven to eight meetings per year among the 63 European CLIs studied in detail in the project. The frequency of social interactions typically ranged from 1 to 100 a year. In nearly fifteen percent of cases these reached much higher levels, some as high as 10,000, showing the effectiveness of CLIs in fostering social relationships.[176]

The Transition Streets project in Totnes, South West England, encouraged small groups of immediate neighbours to meet and share ideas and concerns about climate change. The project achieved highly cost-effective reductions in household carbon emissions through behaviour change, energy efficiency measures, and renewable energy installation.[279] Evaluation of intangible social benefits suggested these were equally important: the majority of participants reported that the opportunity to get to know their neighbours better was their main motivation, and regarded the improved quality of social relationships as the most important outcome, even though most had also realised substantial reductions in energy bills and household carbon emissions through installation of solar electricity and introduction of domestic

energy saving measures.[280] Although participants anecdotally report these social benefits to have endured, the long-term impacts are hard to assess, both in terms of direct effects on social capital and leveraging of this for quantitative climate change mitigation, sustainability or economic effects.

The potential wider effects of improvements in social capital are indicated in a university study that compared subjective wellbeing of 84 residents of 30 ecovillages (and other intentional communities) in North America with those of Burlington, Vermont, a city in the USA reputed to offer residents a very high quality of life. Results indicated slightly higher perceived quality of life among residents of intentional communities, despite markedly lower average levels of personal income and ownership of material goods. Quality of life in intentional communities correlated far more weakly with indicators of material affluence such as income, access to healthcare and levels of education, and more strongly with quality of social relationships, equitable allocation of workloads and access to collective resources. This suggests that intentional communities are better able to translate social capital, and to a lesser degree human and natural capital, into residents' wellbeing, and are therefore less reliant on built and material capital. This allows residents to enjoy high quality of life on the basis of far lower levels of material throughput.[110]

In a similar vein, Ecovillager Robert Hall has identified twenty key ways in which ecovillages generate social capital and mobilise it to serve improve wellbeing:[109]

Economy and Work:

- Pooled economy
- Shared work
- Equitable allocation of workload
- Work-life balance

Governance and Social relationships:

- Inclusive decision making
- Deeper personal relationships and openness
- Inclusiveness
- Conflict resolution
- Limited hierarchy
- Dimensioned communal groups
- Child-centred perspectives
- New values and common worldview
- Access to collective resources

Personal and Culture:

- Physical contact
- Physical activity
- Proximity to nature
- Healthy food

- Celebration
- Self-development practices
- Emphasis on arts and culture
- Environmental activism and ecologically responsible behaviours

5.5.2 Effects of Community-led Initiatives on Social Inclusion

Community-led initiatives in Europe tend to involve a diversity of participants, and explicitly seek to address social, racial, gender and other kind of inequalities. 63 European CLIs studied in the TESS research project demonstrated different levels of social inclusiveness. Most CLIs have a gender balance close to parity. The majority of beneficiaries tend to be nationals of the country where the CLI was formed, although 27 percent reported more than 25 percent of their beneficiaries to be foreign nationals.[176] Regarding the involvement of people at risk of social exclusion (including low income or with disabilities), in two thirds of case study initiatives low income people are absent or represent up to ten percent of beneficiaries, although in two cases they comprised the majority of beneficiaries. CLIs whose activities focus on waste tend to favour inclusiveness while those more focused on food and transportation tend to be more homogenous. More than ninety percent of the beneficiaries of a smaller set of 42 CLIs have medium or high incomes, while only ten percent of initiatives prioritised the inclusion of or delivery of benefits to low-income groups.[176]

Results of an international survey of the permaculture movement, conducted online in English (two sources of bias acknowledged by the researchers) showed the participation of women to be at or above parity (53%), while participation by race showed an overwhelming white majority (96%). Multivariate regression demonstrated that race, gender, and socioeconomic status shape participation in distinct ways and each interact with structural factors. The effects of gender on social roles varied with ecosystem vitality, with women scoring higher than men in countries with high levels of ecosystem vitality, the reverse where ecosystem vitality was low. The observed effect of race on levels of participation varied with national inequality, with indicators of bias against respondents of colour relative to white respondents low in countries with the least inequality, but rising as national inequality increased.[311]

5.5.3 Participation, Volunteering and Employment

The TESS Project's survey of 63 CLIs in Finland, Romania, Germany, Italy, Scotland and Spain indicated that the number of beneficiaries per CLI varied from 204 to 3,493. Larger numbers tend to be associated with initiatives covering a wider geographical territory, with an average of around 100 beneficiaries for initiatives with geographical scope below NUTS 3 (districts, sub-regions or areas of comparable size with populations between 150,000 and 800,000 people) compared with 2,000 for those covering a geographical area equivalent to or larger than a NUTS 3 unit. The number of active participants ranged from 1 to 30,000. The median number of participants was 30, and three quarters of initiatives surveyed involved fewer than 52 participants.[176]

55 of the initiatives surveyed responded to questions about their volume of volunteer time. Responses varied from 2.5 hours to over 19,500 hours per week. More than half of all responding CLIs (56%) relied on volunteers for eight percent or more of their labour input. On average, each member of a CLI was

reported to contribute a monthly average of 16 hours of voluntary labour, although the majority of CLIs reported an average of less than 10 hours of voluntary labour per member per month.

Less than a quarter of responding CLIs (12) rely mostly on paid labour, which in these cases accounts for an average of eighty percent of their labour effort, the rest being carried out by volunteers. Thirty-one initiatives reported that they have no paid employees. The median number of employees among the 32 CLIs with paid staff was eight; three quarters of these reported fewer than 16 staff. The initiative with the largest staff employed 316 people.[176]

The TESS survey also showed contributions of CLIs to creating employment to be significant, with 58.7% of responding CLIs having directly or indirectly created at least one part-time job. In total, the 63 participating CLIs reported that they had created a total of 705 jobs. Three CLIs had created over 50 jobs (320 in the case of the largest of these); ten had created 10 or more jobs.[176]

482 of the jobs created took the form of direct employment, i.e. people employed directly by the CLI itself. The other 223 were indirect: not employed within the CLI but nonetheless having arisen as a direct consequence of its activities. 45 CLIs in the sample of 63 (71.4%) reported that they had not created any indirect employment. Seven of the top ten CLIs, in terms of indirect job creation, either operated in the food domain, or crossed multiple domains. Across the whole sample, CLIs reported that they had created an average of four indirect jobs each (min 0, max 70, median 0, n=63).[176]

5.6 Economic Impacts of Community-led Initiatives

Findings of the TESS project suggest that CLIs have the following impacts:[15 176]

Tangible Impacts

- Job and enterprise creation
- Availability/accessibility/affordability of goods and services
- Raising awareness
- Educational activities
- Greenhouse gas emissions reductions
- Revitalisation of local economies and promotion of circular economy
- Creation of new local investment opportunities
- Rises in local land and house values
- Generate of tax revenues
- Incubation of new businesses
- Market-oriented innovation

Intangible Impacts

- Creation of long-term social capital
- Empowerment of local communities

- Improvements in health and wellbeing
- Strengthening networks
- Skills development
- More equitable local wealth distribution

TESS also identified various economic motivations of CLIs:[176]

- Economic regeneration
- Creating job opportunities and exploring alternative ways of working
- Financing and organising enterprises
- Exploring more resilient economies
- Exploring non-monetary forms of economic exchange such as voluntary work, gift economy and time banks
- Increasing wellbeing
- Raising social capital and community empowerment
- Improving environmental systems

The majority of TESS case study CLIs consider that their economic aims are relevant to local concerns (71%) and that these aims should benefit directly participants (76%), promote financial sustainability and organisational effectiveness (73%) and help improve the local economy (65%).[15] [176] Around fifteen percent of CLIs reported that they considered their work to have helped revitalise the local economy, nearly half (47.5%) felt they almost achieved this and a quarter reported some progress towards this goal.[176]

5.7 Ecological Impacts of Community-led Initiatives

Many CLIs and their members are strongly motivated by ecological concerns. Ecological footprint analysis provides an established methodology for assessing their success in this regard and comparing it to wider situations and trends. Such analysis shows that CLIs and their members and beneficiaries in most cases achieve tangible reductions in their individual and collective ecological impacts. A number of different studies suggest that activities relating to domestic energy use, food and transportation are the most significant contributors to these impacts. However, thorough calculation of ecological footprints is demanding and studies involving CLIs remain quite few in number, largely restricted to ecovillages and co-housing projects.

5.7.1 Ecological Footprint Analysis

Ecological footprint analysis aggregates data on consumption patterns and their environmental impacts in different domains of activity in order to arrive at a single consolidated figure indicative of the sustainability of personal lifestyles.[312] Based on the 'One Planet' model that seeks to establish the relationship between the global ecological impacts of human consumption and the capacity of the biosphere to provide materials and absorb waste, this figure is usually reported as 'global hectares' (gHa): the area of ecologically productive land that would be necessary to support the lifestyle in question. This methodology has its limitations and

can not, given diverse contexts of application, accurately cover all possible factors of relevance nor produce rigorously comparable data with absolute reliability.[313] Importantly in relation to CLIs, it does not take into account local increases in biocapacity resulting from the regenerative activities through which many CLIs both restore ecologically degraded land and increase capacities for collective action at community level to monitor and respond to ecological impacts.

A 2014 report by the World Wide Fund for Nature calculated global biocapacity at the time to be 1.7 gHa per person (and gradually increasing due to changes in land use).[314] Ecological footprints higher than this figure, if replicated over the entire human population, would therefore represent ecological overshoot. The figure therefore represents a benchmark for sustainable living, and has been employed as such in several of the studies reported here.

5.7.2 Ecological Impacts of Ecovillages and Co-housing Communities

Relatively few published studies provide rigorous data on the general ecological impacts of CLIs. Most of what exists has focused on ecovillages (sometimes also including co-housing communities). The Global Ecovillage Network (GEN) has developed an impact assessment tool for ecovillages, whose latest version is structured to reflect the Sustainable Development Goals.[23] This has provided qualitative assessments of activity towards the SDGs in 29 showcase ecovillages worldwide, but not yet progressed to providing robust quantitative data or assessment of the ecovillage movement as a whole. A review of quantitative studies of ecological impacts of ecovillages and co-housing projects found published literature to cover only 23 of more than 1000 ecovillages known by GEN to exist worldwide and be largely restricted to Europe and North America. Relevant literature took a great diversity of forms (from research articles to postgraduate theses) and varied greatly in relation to aims and methods; only six directly compared ecological footprints with those of comparable mainstream communities.[315]

The review in question covered 16 scientific publications that assessed the ecological or carbon footprints of a total of 23 ecovillages and co-housing initiatives.[315] Most initiatives presented an average Ecological Footprint (EF) around half that of the comparison figure, usually a demographically similar mainstream settlement in the same region or country. Compared with the available global biocapacity, estimated in 2014 to be 1.7gHa, five of the 23 initiatives had reported per capita ecological footprints below this global sustainability threshold. Two of these communities are located in Europe: Krishna Valley (1.5 gHa per person) in Hungary and Tir y Gafel (also known as Lammas) in West Wales (1.6 gHa per person). In terms of activities, the greatest contributions to lower ecological footprints were from domestic energy use, food and transportation.[315]

Ecological footprint analysis at Cloughjordan Ecovillage in Ireland employed participatory methods that actively involved residents in design, data collection, interpretation and communication of findings. This collaboration with university-based researchers supported the community's stated aim to be a working example of sustainable settlement and its interest in monitoring progress towards that goal. Findings from a household survey completed by 47 of the 50 households in the community at the time showed residents to have an average EF of 2.03 gHa, which according to WWF figures represents an ecological overshoot of around ten percent. The figure was slightly higher than the per capita EF forecast by five founder residents involved in the original ecovillage design (1.95 gHa), well under half the EF calculated in a study of 79 Irish villages in 2006 (4.35 gHa), and nearly a third lower than the EF in another Irish village that had achieved significant reductions via a four-year carbon reduction programme (2.93 gHa).[316]

5.7.3 Factors Enabling Lower Ecological Footprints

An important consideration in ecological footprinting studies is the relative contributions of infrastructural and behavioural factors. Comparison between Ecovillage at Ithaca in the USA and two alternative designs for the same site showed the actual ecological footprints of ecovillage residents to be at least a third lower than those predicted for more conventional designs. While a high proportion could be attributed to higher density of residential housing at Ithaca (allowing much of the land to be dedicated to regenerative purposes, whose impacts the study did not take into account), much also resulted from differences in behaviour and consumption patterns.[317] Similarly, a comparison between comparable houses in an ecovillage and conventional settlement in Sweden found a significantly lower ecological footprint in the ecovillage (2.8 gHa versus 3.7 gHa), with 95 percent of the difference resulting from behavioural measures relating to food consumption and energy use rather than house design.[318] A UK study that compared the ecological footprints of nine residents of eco-homes built to the highest existing national environmental standards with those of 22 permaculture practitioners living in a range of housing types without specific eco-credentials found those of permaculture practitioners to be on average 60 percent of those of eco-home residents (2.6 gHa compared with 4.37 gHa).[319]

The study of ecological footprints at Cloughjordan Ecovillage showed their low levels to result from both behavioural and infrastructural/technological measures, including a woodchip-powered district heating system, use of energy efficient technologies, onsite food production methods and food buying choices, and collaboration to reduce waste and private car use. High variance among households in the impacts of different behavioural measures suggested high potential for collective learning to enable further reduction of ecological footprints via sharing of relevant skills and best practices.[316] Similar findings have come from research on Danish ecovillages and co-housing communities, which tend to present high levels of social capital and effective means for its mobilisation towards increased adoption of sustainable technologies, sharing of goods and facilities, and enabling more sustainable behaviour among residents.[320] Daly's review of findings from several studies of ecovillages and co-housing cited above confirmed the recurring importance of social and behavioural measures, including car-sharing schemes, co-working spaces, food procurement and preparation, provision of shared vegetarian meals, and onsite production of food. The same study highlighted the need for further research to establish in more detail how the reductions in ecological footprint associated with these measures are in practice achieved.[315]

6. Community-led Initiatives, Sustainability and Climate Action

Social acceptance is at the core of community-led initiatives' work: the public is not just an end-user that CLIs seek to manipulate, but a full participant in and co-creator of the local sustainability pathway. **Photo: 21 Solutions**

6.1 Contributions of Community-led Initiatives to Climate Change Mitigation

Although research on emissions reductions achieved by CLIs is patchy, such data as are available show great realised and potential contributions to decarbonisation. While the figures are impressive in their own right, because CLIs operate within holistic frameworks that link climate action with wider social, environmental and economic goals, their full potential goes far beyond this. The nature of CLIs' work, and the perspectives that underlie this activity, provide new potential understandings of and trajectories towards low carbon and sustainable societies.

6.1.1 Perspectives on Low Carbon Communities

There are many different views on the nature and scope of potential contributions of community-led initiatives to climate change mitigation. Various sources have highlighted the great potential of community action as a

source of new visions, methods and knowledge for low carbon transitions.[321] [289] A report released by the German Advisory Council on Global Change in the run-up to the Paris Climate Change CoP in 2015 suggested that implementation would need to follow a dual strategy combining multilateral action on the part of states with active citizen engagement in relevant areas within an overall responsibility architecture in which the two are complementary.[322] Other research has highlighted the role of community action to come up with solutions that are locally legitimate, and in doing so to help empower communities, expanding the scope of possible action at local level.[323] Community-scale carbon reduction can be both an enabler of action and a way to raise public awareness of the need and possibility for action on sustainability more generally, but when explored to its fullest potential can become a source of conflict with wider systems not easily able to accommodate the structural changes required.[324]

This potential for conflict reflects the transformative potential of CLIs, which can provide routes out of lock-ins and path dependencies in wider systems with deep structural connections (physical, institutional and political) with fossil fuel use.[325] This allows CLIs to be, potentially, more effective than government-led programmes, particularly in stimulating changes in individual and household behaviours, offering solutions that are likely to be more locally appropriate, participatory and inclusive, as well as provide enhanced benefits, for example through local ownership of low carbon infrastructures and transition processes.[326] When activated to its full potential, community-led action for climate change mitigation is not a delivery mechanism for centralised agendas, but a broadening of debate to include a far broader range of perspectives, views and interests, many of which challenge established premises of sustainability governance.[327]

6.1.2 TESS Project Findings on Realised and Potential Emissions Reductions by Community-led Initiatives

The most wide-ranging and systematic quantitative assessment to date of the realised and potential contributions of CLIs to climate change mitigation was conducted in TESS (Towards European Societal Sustainability), an EU funded research project that finished in 2016. Based on case study research on the social, political, economic, technological and environmental impacts of 63 CLIs in six European countries (Spain, Italy, Romania, Germany, Scotland and Finland), TESS calculated carbon emissions savings compared with national baselines in each country.[277]

In accordance with protocols for accounting for greenhouse gas emissions developed elsewhere,[328] the TESS project methodology followed six principles: relevance of data, methods and assumptions; completeness of information used; consistency in methodology, data choice, criteria and assumptions; transparency of methods; accuracy of calculations; and conservatism (preference to underestimate rather than overestimate emissions savings.[277]

TESS employed the following inclusion criteria:

- European initiatives that were initiated and are managed by communities with an overall aim of serving the community
- Had been up and running for at least one year
- Operate within one or more of four specified domains (food, transport, energy, waste)
- Willing to participate in the research project and provide information

Initial mapping by snowball sampling identified 618 CLIs in the geographical areas covered by research, 320 of which fulfilled all the eligibility criteria. Of these, TESS selected 63 for in-depth case study research.[329] Each case study included a calculation of greenhouse gas (GHG) emissions, compared with a baseline figure based on national per capita average emissions in the domain/s in question. This provides an estimate of the emissions avoided by each CLI, based on average consumption levels in each country, rather than a direct calculation.[277]

The key activities of case study CLIs within the four main domains assessed were as follows (summarised in Figure 6.1 below):

- **Transport**
  - Transportation of low weight goods by methods such as bicycle courier services, rather than motorised vehicles powered by fossil fuels
  - Personal mobility via methods such as cycling, walking and vehicle sharing rather than use of private cars
- **Food**
  - Production and distribution of local organic food (e.g. fruits and vegetables), reducing emissions associated with fertiliser use, transportation and packaging
  - Supporting other organic producers (not directly within the CLI) by methods such as purchasing groups, opening markets for local organic producers and reducing emissions associated with production and transportation
  - Retrieval of useable food from retailers who would otherwise need to dispose of it, reducing food waste and hence lowering GHG emissions from decomposition in landfill and by reducing overall demand for food
  - Providing meals for the general public, mainly local, organic and vegan or vegetarian and hence with lower associated GHG emissions, particularly those resulting from meat production
- **Waste**
  - Reducing demand for new products (and hence emissions associated with their production and retail) by repairing, reusing and upcycling
  - Reducing waste by promoting recycling, with lower associated GHG emissions than production of new materials
- **Energy**
  - Provision of heat for residential and non-residential use from renewable sources
  - Provision of electricity from renewable sources including solar, wind, biogas and geothermal

Domain	Activity	Service/product provided
Transport	Transportation of goods	Sustainable transport of lightweight goods
	Provision of transport to people	Sustainable personal transport
Food	Provision of food	Provision of locally-grown organic produce
	Provision of infrastructure for local food markets	Provision of locally-grown organic produce
	Redistribution of food	Saving food from businesses and avoiding food waste at home
	Provision of meals	Provision of vegetarian and/or vegan meals
Goods and materials	Repairing, reusing, upcycling	Repair, reuse or upcycle of goods and materials
	Recycling	Recycling of materials
Energy	Provision of heat	Provision of heat from more sustainable energy sources
	Provision of electricity	Provision of electricity from more sustainable energy sources

Figure 6.1. CLIs' activities taken into account in TESS Project estimates of emissions reductions. Source:[277]

Results indicated that CLIs achieve the highest reductions in GHG emissions through heat and electricity generation, personal transportation and promoting vegan and vegetarian diets. As might be expected, emissions reductions in the energy domain depend both on the renewable energy technologies used by CLIs and on existing national energy mixes: the same renewable energy technology would have higher mitigation potential in a country with a low proportion of renewables in the national mix. Similar applies in the transportation sector; for example, the mitigation potential of electric vehicles is low if the national electricity supply has a low proportion of renewables, but this can change if renewable sources later grow in importance. In the food domain, results suggested that dietary choice is more important than provenance: providing vegan or vegetarian meals has far more impact on emissions than providing locally produced organic food. Researchers also found that many CLIs are less preoccupied with emissions reductions directly and mainly engaged with building and strengthening local communities and reconnecting with nature within urban contexts.[330]

Figures 6.2 and 6.3 summarise TESS project findings on emissions reductions realised through various activities. Figure 6.2 shows four indicators derived from results:

1. Percentage total reduction
2. Absolute total reduction
3. Total reduction per output unit
4. Reduction as a percentage of the carbon footprint of an average beneficiary

Considering Indicator 1, most activities in all domains showed significant percentage reductions in emissions compared with baseline figures, ranging from 20.8% for "Provision of Infrastructure for Local Food Markets" to 100% for "Repairing, Reusing, Upcycling".

In relation to Indicator 2, absolute total reductions, some headline figures are as follows:

- In the energy domain, average absolute reductions are 612 tCO_2e/year (84.3% below baseline), ranging from 40 to 2367 tCO_2e/year across CLIs
- In the food domain, numbers of members and beneficiaries significantly influence figures. On average, redistribution of food leads to a reduction of nearly 145 tCO_2e/year per CLI
- In the transport domain, transportation of goods leads to an average 94.7% reduction of GHG emissions compared with baseline figures, with absolute figures ranging from 1.8 to 43 tCO_2e/year for different CLIs
- In the waste domain, the average absolute emissions reduction resulting from the activity "Repairing, Reusing, Upcycling" is very high (1574 tCO_2e/year, with an average saving of 34 kg CO_2e per unit product)

				Indicator 1	Indicator 2	Indicator 3				Indicator 4
Domain	Activity	Baseline emissions (kg CO_2e/y)	Project emissions (kg CO_2e/y)	% reduction from baseline	Total reduction (kg CO_2e/y)	Total reduction (kg CO_2e) per output unit	Output unit	Number of beneficiaries	Reduction per beneficiary (tCO_2e)	Reduction as % of beneficiary's carbon footprint
Food	Provision of Food	6159.79	4007.98	25.95	2151.80	0.15	kg	161.17	0.01	0.12
	Redistribution of Food	146140.70	906.47	99.37	145234.23	0.53	kg	3804.92	0.10	1.15
	Provision of Meals	17572.31	10740.34	31.37	6831.97	0.56	meal	9.07	0.61	6.87
	Infrastructure for Local Food Markets	10901.32	9598.36	20.81	1302.96	0.18	kg	244.56	0.05	0.57
Energy	Provision of Heat	671579.54	59267.22	84.26	612312.32	0.15	kWh	523.62	1.04	11.78
	Provision of Electricity	476475.60	22236.20	90.98	454239.39	0.35	kWh	210.33	2.16	24.42
Transport	Transport of Goods	23740.18	1871.44	94.66	21868.74	0.20	km	375.00	0.08	0.95
	Transport of Persons	30590.80	5456.41	88.87	25134.38	0.10	km	24.97	1.01	11.41
Goods and materials	Repairing Reusing Upcycling	1574193.74	0.00	100.00	1574193.74	33.63	Products	353.00	0.04	0.54
	Recycling	28529.88	7520.14	77.23	21009.74	5.50	kg	191.36	0.13	1.52

Figure 6.2. Summary of average calculated emissions reductions, by activity. Source:[277]

Figure 6.3 shows the absolute emissions reductions achieved by each CLI, which mainly reflect the numbers of members and beneficiaries. According to this indicator, the activities with the highest realised contributions to emissions reductions are "Repairing, Reusing, Upcycling", "Provision of Heat" and "Provision of Electricity".

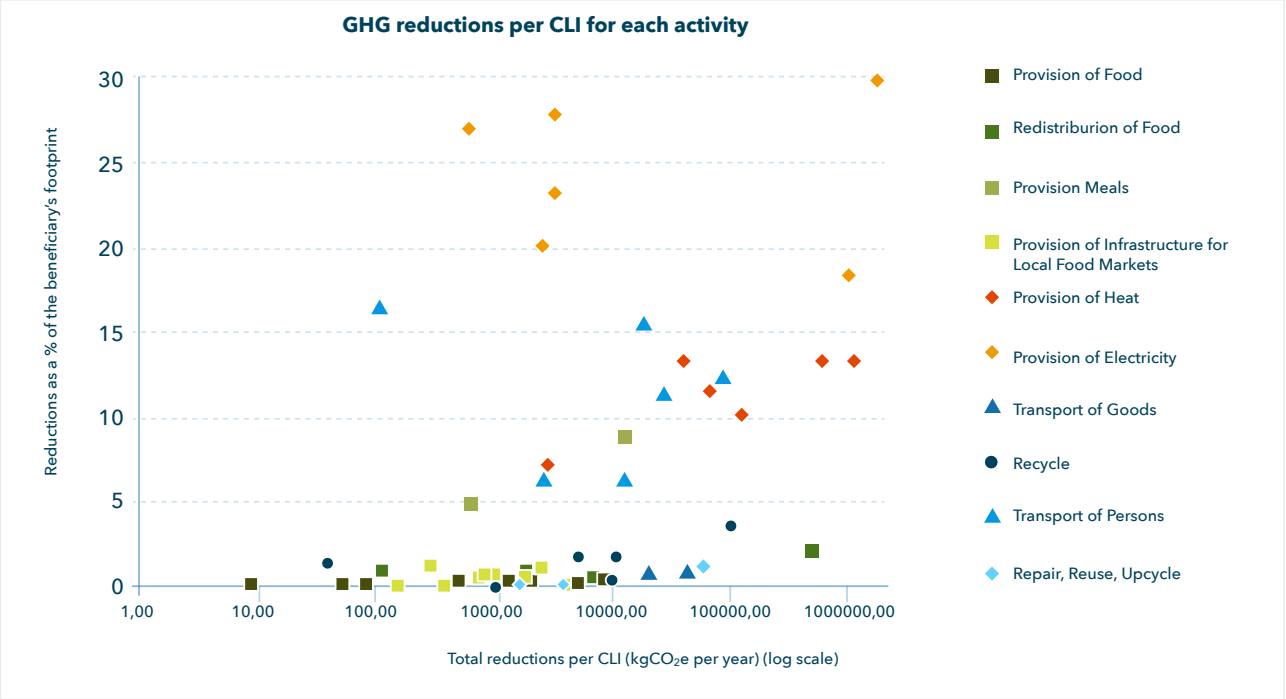

Figure 6.3. Absolute emissions reductions and reductions relative to beneficiaries' carbon footprint. Note that the absolute reductions are shown on a logarithmic scale. Source:[277]

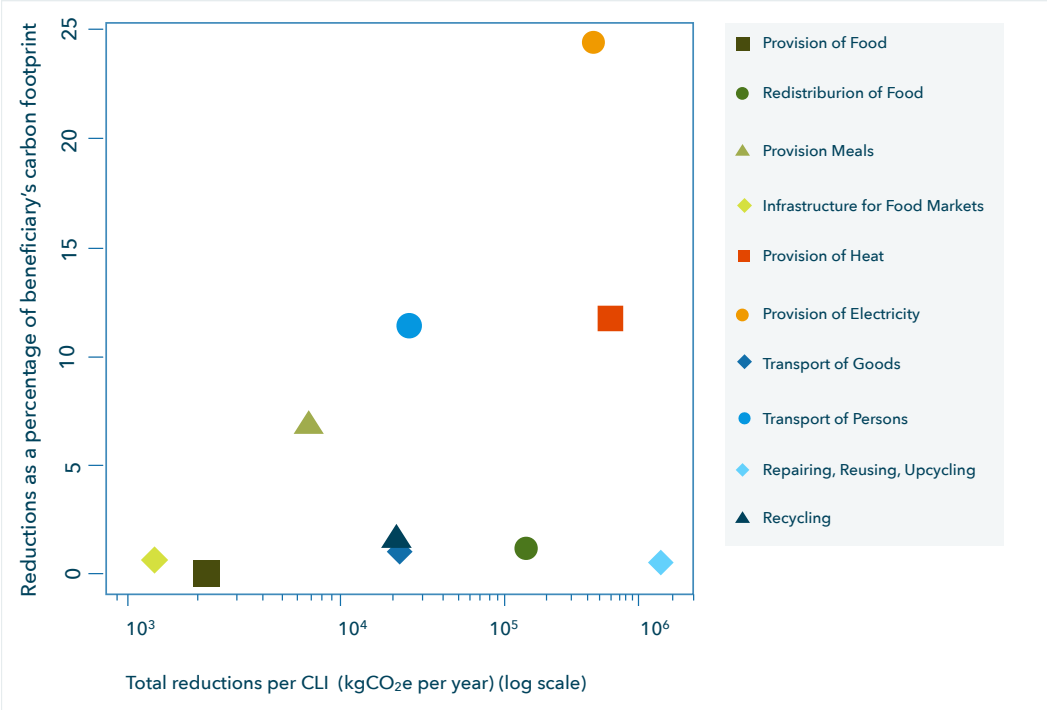

Figure 6.4. Absolute emissions reductions and reductions relative to beneficiaries' carbon footprint achieved by CLIs, by activity. Source:[330]

Figure 6.4 summarises Indicator 4, the average percentage reduction in carbon footprint, which gives perhaps the best assessment of potential impacts of different activities and domains.

Extrapolating from the aggregated data, TESS researchers calculated the following potential contributions to climate change mitigation from the activities with the highest proportionate impacts:

- Providing electricity from renewable sources can reduce beneficiaries' carbon footprints by a quarter
- Supporting more sustainable means of personal transport (e.g. cycling) also shows high potential reductions per beneficiary (around eleven percent)
- By consuming vegan and vegetarian meals, beneficiaries of CLIs can reduce their personal carbon emissions by around seven percent. Redistribution of still-edible food from supermarkets also has a large potential contribution to climate mitigation[277]

6.1.3 Other Key Studies

A 2017 study reviewed 16 scientific publications that collectively assessed the ecological and/or carbon footprint of 23 ecovillages and cohousing initiatives. Results showed that in cases where ecovillage residents' carbon footprints have been measured, these are an average of 35 percent lower than national averages. The most spectacular case was that of Sieben Linden in Germany, whose carbon footprint in 2004 was reported to be only 27 percent of the national average.[315]

A 2018 synthesis of findings from research on ecovillages around the world shows a number of activities that promote emissions reductions or carbon sequestration. These measures include preservation, regeneration and creation of natural habitats; promotion of nature-based and energy-efficient infrastructures; fostering less, small and more shared infrastructures and goods; nurturing circular economy and short water and food-waste cycles; and promotion of healthy lifestyles and sustainable commuting.[108]

A participatory study of ecological footprints of residents of Cloughjordan Ecovillage in Ireland did not calculate carbon footprints directly, but did calculate ecological footprints due to energy use. Owing to a combination of highly energy-efficient building design, use of low energy appliances and LED lighting, and use of a woodchip-powered district heating system, residents' ecological footprints associated with energy were on average less than a sixth of the national average recorded in a study of 79 Irish villages. High variance among households show behavioural measures also to have a strong influence on energy use and ecological footprints.[316]

The Transition Streets project conducted by Transition Town Totnes in England supported residents in 468 households to work together as groups of neighbours to implement practical measures to save energy, carbon emissions and money, through personal behaviour change, supported household energy efficiency measures, and, where appropriate, installation of rooftop solar PV. Participating households achieved average carbon savings of 1.3 tonnes per year; those who installed PV saved an additional 0.4 to 0.7 tonnes per year. Over the first year of the project as a whole, participating households are estimated to have saved a total of 608 tonnes of carbon and reduced their energy demand by 1.5 million kWh, equivalent to around 14 percent of average household energy use.[279] Estimates from the UK have suggested that low carbon community groups can achieve emissions reductions of up to 32 percent in one year, and households within them reductions of around ten percent.[9]

6.1.4 Carbon Sequestration by Community-led Initiatives

Although figures on carbon sequestration are, to our knowledge, rarely available, many CLIs engage in regenerative activities that restore soils and enhance biodiversity, known in other contexts such as indigenous land management and smallholder agroecology to have significant benefits in terms of carbon sequestration.

In a survey of 29 showcase ecovillages worldwide by the Global Ecovillage Network, almost all respondents reported that they actively work to restore degraded ecosystems, the majority indicating that this is a significant area of their work. Ninety percent of respondents reported that they actively work to sequester carbon in soil or biomass, over a third dedicating substantial effort to these activities. Reported techniques include regenerative agriculture, reforestation, use of clean cooking stoves, farmland restoration, water saving, composting, farmland irrigation and creation of biochar.[23] A review of ecovillage research worldwide presented similar findings, with reported activities directed towards carbon sequestration such as preservation, regeneration and creation of natural habitats and promotion of nature-based and energy-efficient infrastructures.[108]

6.1.4 Global Transition Pathways: Technological Substitution or Systemic Change

The EU-funded (FP7) project PATHWAYS modeled two alternative future large-scale transition pathways for humanity, one based on technological substitution, the other involving broader structural change. Both low-carbon transition pathways differ in the kind of actors involved, degree of radicalism of green niche innovation and number of socio-technical dimensions involved:[15]

> *"Technological substitution (Pathway A) embodies the adjustment of the existing regime without a full reordering of existing societal structures. This implies that the main focus is on technological change in this pathway, whereas many other elements (e.g. user practices, lifestyles, governance arrangements) remain close to the existing regime. This pathway tends to be advocated and enacted by incumbent actors."*[15]

> *"Broader regime change (Pathway B) entails a shift to new socio-technical radical niche-innovations that entail not only technical changes but also wider behavioural and cultural changes, new user practices and institutions. Incumbent industry actors may be overthrown by new entrants, or enter into new alliances with them. New coalitions in land use occur between farmers, retailers and consumers."*[15]

The main results from the modeling exercise conducted in PATHWAYS were as follows:[15]

- In both pathways, fossil fuels are practically phased out by 2050
- In the technological substitution pathway onshore wind and solar PV play major roles, while in the regime change pathway offshore wind and biomass are far more important
- Both pathways are demanding, requiring major and urgent reorientation of policies and actions between 2016 and 2026 in order to be effective
- In both pathways, social acceptance appears to be potentially the most important success factor
- The key overall finding is that the regime change transition pathway is initially slower but has greater and more persistent long-term impact on carbon emissions reductions

Social acceptance is at the core of community-led initiatives' work: the public is not just an end-user that CLIs seek to manipulate, but a full participant in and co-creator of the local sustainability pathway.

Several instruments to foster social acceptance are mentioned in a joint report of the PATHWAYS, TESS and ARTS European projects:[15]

- Improving consultation procedures by utilities and developers, leading to real involvement of local residents in planning
- Organising a broad societal discussion to debate the pros and cons of low-carbon options with a wide range of stakeholders and citizens
- Stimulating low-carbon deployment by new entrants and communities, which is likely to lead to greater engagement, awareness and social debate

In order to assess the role of community-led initiatives (CLIs) in low carbon transition pathways, the TESS research project used data on the contributions of community-led initiatives to reductions in carbon emissions to model two scenarios for emissions in Europe: one with little engagement of citizens and community initiatives (Low CLI scenario) and one in which all European citizens would be directly or indirectly involved in or interacting with at least one CLI (High CLI scenario).[176]

The low CLI scenario, which the researchers considered realistic, assumed that by 2016 five percent of the population in each EU country would be involved directly or indirectly with a CLI, a third of them as active members. Considering the documented average carbon emissions reductions achieved by CLIs, country population data and the EU 2020 strategy (aiming to achieve 20 percent reductions in GHG emissions in all the domains studied in the TESS project: food/agriculture, waste, energy and transport) it was possible to estimate that under this scenario almost 85 percent of EU-28 countries would meet the target of reducing GHG emissions by twenty percent by 2020.[176]

In the High CLI scenario, which the researchers considered unrealistic, by 2016 all European citizens would be directly or indirectly engaged with CLIs (a third of the total population as active members). Under this scenario, GHG emissions reductions over the EU-28 as a whole would total around 73 percent, although the 2020 target would not be achieved in all countries via this bottom-up approach alone. Both scenarios show further potential reductions in carbon footprints if CLIs and their beneficiaries are able focus their efforts on the most effective activities.[176]

6.2 Community-led Initiatives and the Sustainable Development Goals

The Sustainable Development Goals were adopted by the United Nations in 2015 as the basis for its aspirations to work towards global sustainability over a timeframe up to 2030. The apparent overlap between many of the SDGs and the aims and methods of community-led initiatives (CLIs) suggests potential for the SDGs to link bottom-up local action on the part of communities with governmental and intergovernmental action on sustainability. CLIs provide a potential implementation vehicle for the SDGs, while the SDGs represent an opportunity to mainstream and/or upscale prior and ongoing action undertaken at community scale. The values, perspectives and experiences of CLIs also challenge certain assumptions, weaknesses and contradictions in the SDGs, and hence can contribute to ongoing critical reflection on the goals themselves.

The seventeen SDGs cover many areas in which community-led initiatives have a long history of innovation and action. SDG11 is directly concerned with 'sustainable cities and communities'. Many others address areas in which CLIs are highly active and proficient, including livelihoods and employment (SDG1 and SDG8), food provision (SDG2), renewable energy (SDG7), health and well-being (SDG3), education (SDG4), climate change (SDG13), ecosystem protection and enhancement (SDG14 and SDG15), sustainable provision of material needs (SDG9 and SDG12), addressing inequality and discrimination in all forms (SDG5 and SDG10) and social/institutional innovation for effective partnership and inclusive governance (SDG16 and SDG17). The six 'essential elements' of the SDGs identified by former UN Secretary-General Ban Ki-Moon in a synthesis report - dignity, prosperity, justice, partnership, planet and people - effectively restate the three permaculture ethics of earth care, people care and fair shares.[122]

CLIs thus provide existing working examples of how the SDGs could be achieved in practice, prefiguring their attainment at a global scale. The UN calls for a strong and effective decentralisation of power, resources and decisions to the local level, and suggests also that community-led initiatives not only become involved but participate in and assume responsibility and accountability in the design, implementation and monitoring of the SDGs.[335]

6.2.1 How Community-led Initiatives are Already Working towards the Sustainable Development Goals

A series of impact assessments conducted by the Global Ecovillage Network in 29 showcase ecovillages on five continents showed that the vast majority are already contributing in concrete ways to achieving the SDGs. In relation to ecological impacts, 97% are actively working to restore degraded ecosystems (SDG15), 90% reuse or recycle over half their waste and 85% compost all food waste (SDG12 on responsible production and consumption), 90% sequester carbon in soil and/or biomass SDG13 and 97% work to restore or replenish water sources and cycles (SDG6). In terms of social impacts, 100% provide education in sustainability-related fields (SDG4), women occupy at least 40% of decision-making roles in 90% of cases (SDG5), all support local traditions relevant to sustainable methods of building and food production (SDG11 on sustainable communities), 80% have established conflict resolution procedures and 100% provide training in decision-making and mutual empowerment (SDG16 on responsible institutions, peace and justice), while 95% participate in campaigns to protect the rights of humans and nature (SDG17 on partnership).[23]

While the Global Ecovillage Network assessments demonstrate work that largely precedes and hence anticipated the SDGs, some CLIs and associated organisations have since 2015 begun to adopt the SDGs as a strategic framework for their work. ECOLISE member Gaia Education already offers bespoke training on implementation and horizontal integration of the SDGs and has incorporated the SDGs into the training of facilitators for its flagship Ecovillage Design Education course.[331] [332] A report produced on behalf of UNESCO identified Gaia Education's online training as a key resource for education on the SDGs.[333] In Ireland, ECOLISE member Cultivate gave the SDGs a prominent role in Convergence, their annual sustainable living festival, in 2017. The SDGs provided the framing context for a series of community conversations about sustainability hosted in various locations across Ireland. This allowed the local issues and experiences raised in the conversations to be located within a bigger picture of global challenges and ways to address them.[334]

6.2.2 How CLIs Challenge the SDGs

A key point of divergence between the SDGs and the outlook of many community-led initiatives and movements concerns the role of economic growth (see also Chapter 2.3). Growth is the stated objective of SDG8, and the UN's 2030 Agenda for Sustainable Development, in which the SDGs were announced, repeatedly refers to economic growth as both a desired outcome in its own right and a precondition for realising other goals.[38] This is despite a proliferation of authoritative scholarly analyses that demonstrate a fundamental incompatibility between economic growth, in anything resembling its conventional definition, and sustainability, including many of the specific aspirations stated in other goals.[69] [337]

More generally, concerns have been raised about possible conflicts among SDGs, depending on the chosen implementation pathways. For example, achieving infrastructural goals relating to energy (SDG7), sanitation (SDG6) and food provision (SDG2), as well as global targets relating to climate change (SDG13) and nature conservation (SDG14 and SDG15) could conflict with social goals on inclusion (SDG16), partnership (SDG17) and equality (SDG5 and SDG10) if approached in highly centralised ways and without active involvement of those working on these issues at community scale.[338]

Reflecting similar concerns, academic debates on Degrowth, which help link local action to wider political and economic issues, arose in part as a critical response to the ideological commitment to growth in the field of sustainable development and the way this limits the scope of politically acceptable debate.[73] Degrowth scholars seek to democratise debates on desirable futures by highlighting the alternative and more promising pathways towards sustainability and social justice that are available only outside the growth paradigm.[75] In similar vein, a joint report by Transition Network and the Post Carbon Institute highlights the need for policy-makers to abandon their commitment to economic growth in order to respond to the climate, resource and economic circumstances the world currently faces.[339]

6.2.3 Community-led Action towards the SDGs, Goal by Goal

SDG1: No Poverty

Community-led initiatives work to meet material and other needs while respecting limits to sustainability in various ways. Interventions can take place at numerous levels, ranging from supporting individual (and/or household) livelihoods through community-scale enterprise to addressing global structural causes of poverty by creating alternatives to inherently inequitable systems. Many are creating new forms of social and economic organisation that decouple wellbeing from material throughput and exploitative forms of economic interrelationship. Often replacing the logic of states and markets with that of the

commons - self-governance of communities united by mutual reliance on any shared resource - many go beyond sustainability as such, and the scope of the SDGs, to becoming regenerative of ecological and social conditions.[340]

Specific approaches employed include:

- At the scale of the individual enterprise, creating new and alternative livelihood opportunities that rely predominantly on local and renewable resources, employ cooperative and commons-based forms of ownership and management and support regeneration of local and regional ecological, social, cultural and/or economic systems.[341] [310] [342] [343]
- At community scale, promoting new forms of social and economic interrelationship such as sharing, commoning, communitarianism and gifting, often involving repair, upcycling and/or reuse of existing material goods and in many cases supported by complementary and community currencies designed to promote collective rather than individual interests.[344] [345] [346]
- At the scale of the local and regional economy, creating *enterprise ecologies* of operations with complementary goals, activities and needs, and solidarity economies of interconnected and mutually supportive cooperative enterprises.[347] [163]
- Also at local and regional scale, promoting economic relocalisation in order to prioritise use of local and renewable resources, goods and services, make the impacts of economic activity directly visible to those undertaking it, enabling feedbacks and making externalisation of environmental and social damage difficult or impossible, and replacing relationships among localities (at all scales up to global) based on exploitation and dependency with relationships of solidarity and mutual support.[348] [78] [349]
- At national and global scales, developing and/or enacting new models of social and economic organisation that, unlike conventional macro-economic approaches, do not rely on systematic increases in use of raw materials and energy, production of waste and levels of inequality.[71]
- At all these scales, successfully decoupling provision of subjective and objective well-being from high and rising levels of material affluence, in particular by making social, natural, cultural and other non-material forms of capital the basis of wellbeing.[109] This challenges conventional notions of poverty as simply reflecting (relative or absolute) material scarcity or lack.

SDG2: Zero Hunger

Many community-led initiatives are active in sustainable food production. Community food initiatives are often guided by principles such as food security, food sovereignty and agroecology. Many emphasise environmental sustainability and regeneration, local provenance, and support and reinvigoration of local and regional agricultural, culinary and/or economic traditions. Often linked with economic relocalisation, such activities directly strengthen resilience in local food systems, help avoid exploitative relationships between importers and exporters of food (where food supply in one place is at the expense of food security and economic autonomy elsewhere) and in most circumstances reduce levels of pollution and energy consumption associated with transportation, processing, packaging and preservation of food.

Specific approaches employed include:

- Changing perceptions of food by promoting a holistic perspective that sees food not as a commodity, but as an enabler of life, basic right, constituent of social relationships and cultural

identities and public good, as well as an integrating principle for numerous SDGs and of regenerative societies.[350] [351] [352]

- Use of design principles based on observation of nature and the intersecting permaculture ethics of 'Earth Care', 'People Care' and 'Fair Shares' in the creation of food production initiatives rooted in local ecological, social, cultural and economic processes, and often regenerative of any or all of these.[353]
- Fostering an integral education system that enables individuals to identify edible wild species as well as cultivate local varieties better adapted to local conditions and possibly more nutritious.[354]
- Promoting popular education movements with an emphasis on learning through doing, through which large numbers of people (including migrants and vulnerable people) learn and apply the skills necessary to grow their own food and regenerate degraded land.[355]
- Linking producers and consumers of food through mechanisms such as solidarity purchasing, community-supported agriculture, farmers' markets and others.[352] [234]
- Creating edible and biodiverse landscapes, particularly in urban areas through various forms of community gardening.[356] [292] [278]

SDG3: Good Health and Wellbeing

Community-led initiatives promote alternative approaches to health and wellbeing that usually take a more holistic approach than conventional healthcare. Greater emphasis on lifestyle, community and quality of social and physical environments can complement or replace existing biomedical methods, providing for higher levels of overall health and wellbeing at lower financial costs and throughputs of energy and materials, and so reconciling public health provision with increasing attention to the effects of resource constraints.[357] [285] [358] [65]

Specific approaches employed include:

- Designing alternative lifestyles that reconcile high levels of individual and community well-being with low levels of material consumption, hence minimising (or even reversing) environmental depletion and ecological degradation.[359]
- Building social, individual and spiritual capital by promoting: residential design and public spaces based on increased levels of social interaction; including playgrounds and recreational facilities in settlement design; participation in collective activities and services (such as maintenance of collective spaces and horticulture); holding social events, rituals and ceremonies; work parties; communal meals; decision-making based on consensus and/or consent; social democracy and equality and provision of shared spaces such as community centres and public gathering halls.[108]
- Living close to nature, in the case of rural ecovillages and permaculture projects, and/or creating green infrastructures, especially in urban areas.[105] Evidence suggests this can help increase wellbeing, reduce mental stress and extend life expectancy.[360] [361]
- Use of holistic strategies and methods within community development, sustainability and regeneration projects in order to promote increased individual and community wellbeing through healthy lifestyles, social cohesion (including meaningful and trustworthy relationships) and environmental health.[281]

- Encouraging walking and cycling, community cafés and food growing projects that help enable healthy diets; operating 'Care Farms' and similar outdoor projects that create environments and activities conducive to mental and physical health.[362] [363]
- Frequent and comfortable community meetings; presence of local leaders diverse in ethnicity, age, religion and gender; spending leisure time in healthy ways (communal sports such as yoga, meditation, recreation, art, crafts, games, etc...), consumption of local foods and use of native medicinal plants (traditional medicine).[108]
- A common focus on 'Inner Transition': changing personal and collective mindsets, outlooks and values, as an essential complement to action oriented towards external change.[364]
- Creating the basis for fruitful strategic alliances with planners and providers of centralised health care, as promoted by the Transition movement in Canada.[365] [366]
- Many CLIs promote sustainable and local energy production, especially under community ownership. Sustainable energy technologies help support human health by decreasing emissions of air pollutants.[367] [368]

SDG4: Quality Education

Networks of community-led initiatives are grounded in multiple, intersecting and ongoing learning processes, of varying degrees of formalisation, through which they generate and communicate the new skills, ways of knowing, forms of social organisation, cultural perspectives and practices necessary to understand and respond to emerging and fast-changing global situations by envisioning, planning, implementing and monitoring regenerative development pathways in local communities.[369] [294] Such learning processes can nowadays draw on the collective knowledge and wisdom accumulated over several decades by global movement of pioneering communities and people.[370] Some of this intellectual and cultural capital has been incorporated into specific trainings such as Permaculture Design Certificates, Ecovillage Design Education and Transition Training. In most cases, these trainings take the form of education about, for and as sustainability: living (and learning) by example in addition to transmission of knowledge and skills.[1]

Specific approaches include:

- Promoting inspirational, communitarian and experiential learning courses that emphasise place-based and lifelong learning, with initial learning conditions that reflect the qualities and circumstances of the community itself and a commitment to learning through shared action.[371] [372] [373] [374]
- Through projects such as Sicilia Integra, Gaia Education is using education to support the needs of migrants, including people displaced by climate change, through training programmes that connect their existing skills and capabilities with the needs of the places and communities that receive them.[375]
- Many ecovillages, permaculture projects and other residential communities host interns, volunteers and others on longer term, less structured learning visits that allow deeper immersion, often equipping people to begin new projects of their own.
- Some CLIs are also active in innovative forms of school-age sustainability education.[376]

- Specific educational methodologies, techniques and tools, including the Transformation Game (developed and used in Findhorn Ecovillage), Gaia Education's SDG flashcards and techniques developed elsewhere but commonly used in CLIs such as the Dragon Dreaming for project and team management design framework and Sociocracy system for inclusive decision-making and governance.[377]
- Building on resonances between their own educational activities and wider fields of sustainability education, including specialist approaches like holistic education and transformative education, some CLIs have begun to collaborate with higher education institutions to co-create new hybrid programmes.[378] [379] [380] Deepening such connections, CLIs have begun to develop strategic collaborations with and even emerge from within established higher education institutions.[381] [382] The ECOLISE network of European CLIs includes among its member universities and other formal providers of sustainability education, in specialised support roles.[383]

SDG5: Gender Equality

Both formal and anecdotal evidence show, in general, partial success on the part of CLIs in working towards gender equality. Widespread awareness and acknowledgement of the importance of gender issues makes visible both successes and failures. In addition, the conceptual understandings and practical activities of many CLIs go beyond issues of representation to reveal, examine and address deeper underlying structural and cultural factors, drawing on feminist and eco-feminist social critiques and developing and enacting new understandings of gender and its social and environmental consequences.[384]

The TESS project collected data on gender representation in 63 CLIs in several European countries, in the form of gender ratios at various times: current (both among strategic decision-makers and across the initiative as a whole), five years previously and among the founding group. Results showed near-parity of gender among present-day participants in most cases, with a small number of male-dominated initiatives and virtually none female-dominated. Gender imbalance (in the form of both male and female domination) was more prevalent both five years before the study and among founding groups, suggesting improved gender balance over time. While the majority of initiatives showed gender balance among strategic decision-makers, gender imbalances were more widely reported at this level than that of the initiative as a whole, with male predominance more common than female predominance.[176]

A survey of 29 ecovillages in all continents found that forty percent or more of senior leadership positions were occupied by women in over ninety percent of documented cases. An online survey of the international permaculture movement also showed high levels of female representation (53% of respondents). However, participation was strongly differentiated according to role, with women's representation far less in high-profile roles as professionals and practitioners, suggesting that wider structural inequalities relating to gender persist within the permaculture movement.[311]

Similar ambiguities have been reported by participants in CLIs at the level of attitudes, behavioural patterns and underlying perspectives on gender and gender relationships.[385] [386] [387] A general conclusion is that, while attention to gender issues, and progress on them, is generally higher in CLIs than in the general population, oppressive and discriminatory patterns relating to sex, gender and sexuality nonetheless persist. In line with current scientific understandings about the depth, opacity and pervasiveness of these cultural norms,[388] this demonstrates the importance of CLIs as niches where alternative perspectives can be explored and put into practice.[389] [390] [391] [392]

CLIs thus aspire to go beyond mere numerical equality towards deeper shifts away from structural and cultural patriarchy and towards genuinely gender-equitable and gender-inclusive societies.[393] Increasing

evidence suggests that women's distinctive perspectives on nature, environment and society, and life experiences as women involved in sustainable agriculture and other land-based and transformative work, can extend the scope of thought and action in ways that inform sustainability thinking more widely,[394] [395] thus creating and strengthening synergies between gender equality and achievement of the other SDGs. As one example, in a worldwide survey of community-led projects that link agriculture with biodiversity conservation, thirty percent of the reported solutions specifically target women. In many cases, explicit attention is given to intersections among gender dynamics, household incomes, nutrition and conservation action.[396]

SDG6: Clean Water and Sanitation

Community-led initiatives often approach water management in holistic perspective, with water provision (for domestic, agricultural and other uses) and sanitation being integrated into wider water management systems at community and landscape scale.[122] Research in the UK and Ireland shows high levels of public support for greater inclusivity and community empowerment in relation to planning and decision-making in water management; community-level control over infrastructures for water and sanitation infrastructures as well as wider catchment management can make important contributions to this.[397] A survey of 29 showcase ecovillages by Global Ecovillage Network found that all but one were actively working to conserve, restore and/or replenish stores of fresh water. The most common techniques were efficient irrigation systems combined with mulching to reduce water evaporation from soil (73% of reported cases), behavioural measures such as mindful showering to avoid unnecessary water use in domestic contexts (70%), capture and storage of rainwater (67%) and recycling of grey water (63%).[23]

- In Tamera Ecovillage in the Alentejo region of Portugal, water management is a central ecological topic. The community develops and tests a wide variety of infrastructures for water retention in the landscape and usage within the community, and promotes wider discussion, reflection and innovation through various forms of collaboration with internationally recognised authorities as well as testing a wide variety of infrastructures to support and enhance water cycling and storage.[398] [399]

Other general approaches include:

- Direct collection of rainwater combined with effective systems for its storage, reallocation among households, biological and physical retention and treatment and reuse of rainwater.[108] [400]
- Reuse of treated wastewater (black and grey water) for agricultural and domestic purposes, often combined with use of composting toilets and other sanitation methods that reduce water inputs, allow hygienic onsite processing of waste and retention of organic matter within local ecosystems, and provide new potential for installation of effective sanitation systems in sites remote from central infrastructure.[401] [402] [403] [404] [405]
- Nature-based sewage treatment facilities such as Biomatrix, developed at Findhorn Ecovillage in Scotland.[406]

SDG7: Affordable and Clean Energy

CLIs are active in both supply-side and demand-side interventions relating to sustainable energy, both through various forms of community-owned energy generation and initiatives to promote less energy-intensive settlements and lifestyles. Community energy is for many CLIs the initial and/or most important form of action, with community energy projects often providing a focus for a wider range of activities powered and/or funded by renewable energy generation infrastructure, or helping to create enabling conditions for other work by reducing dependencies on infrastructures that are corporate-run, environmentally destructive and dependent on non-renewable inputs of fossil fuels or nuclear feedstock.[407]

Specific approaches include:

- Lifestyle changes to reduce direct and indirect levels of energy consumption at personal and household levels.[408]
- Taking pioneering action to promote innovative and/or experimental use of renewable energy technologies and low carbon lifestyles, even in the face of adverse social, cultural and institutional circumstances, thus creating possibilities for wider diffusion and upscaling.[409]
- Use of permaculture as a methodology for designing low-energy and energy efficient dwellings and settlements.[410]
- Creating new and retrofitted infrastructures that reduce energy needs at both household and community scale, for example by use of local materials with low embodied energy, architectural designs that make best use of passive solar for heating and/or cooling and natural light for illumination, and transport infrastructures that favour low-emission methods such as walking, cycling and use of public transport.[411] [108]
- Diverse forms of community-owned and managed renewable energy generators, district heating systems and microgrids.[412] [413] [414]
- Holistic approaches that foster individual and community initiative, participation and leadership in promoting sustainable energy transitions as well as renewable energy development strategies, plans and initiatives at scales from local to regional.[415] [416] [417]

SDG8: Decent Work and Economic Growth

The wording of SDG8 is curious in relation to current thinking on sustainability, in particular the almost universal recognition that further growth in the global economy - at least as conventionally understood, in terms of growth in GDP or other fiscal measures - is under present-day conditions incompatible with provision of decent work, and indeed with achievement of any of the other 16 SDGs (see also Chapter 2.3). This conclusion arises from, for example, a large body of academic research - including but not restricted to that conducted within the Degrowth movement,[68] work originally conducted by the UK government's Sustainable Development Commission,[69] experiences of major international development NGOs such as Oxfam,[418] and the T20 advisory group to the G20.[419] Recognition of the need for a change in economic paradigm has begun to take hold in the European Commission, which in 2018 hosted a major conference on post-growth alternatives at the European Parliament. Community-led initiatives include existing and ongoing attempts to create functioning local economies and enterprises that do not depend on global GDP growth and can inform and support this wider shift.[420]

Specific approaches include:

- Use of solidarity economy as a vehicle for creating sustainable lifestyles based on socially and ecologically regenerative forms of enterprise, and for embedding ethics of sustainability and equality into local economies.[393] [421] [422] [423]
- Alternative models of entrepreneurship representing distinctive forms of social solidarity economy have arisen in many key movements of CLIs:
    - Ecovillages often operate as working models of sustainable local economies that host multiple forms of enterpreneurship.[310] Based on these experiences, GEN and a number of partners within the Erasmus+-funded SIRCle Project (Social Innovation for Resilience Communities) developed a toolkit and associated curriculum and other learning tools for sustainability entrepreneurship, in order to facilitate wider diffusion of the knowledge and approaches thus developed.[424]
    - From the Transition movement emerged the REconomy approach to reinvigorating local economies through sustainable and socially responsible entrepreneurship.[308] A report on 20 early examples of Transition-inspired social enterprises in the UK included businesses in community renewable energy, housing, transportation, finance, food production, and many other areas, with a total annual turnover of GBP 3.5 million and collectively employing over 100 people.[341]
    - The KEEP Research Project, a collaboration between the Permaculture Association (Britain) and Kingston University Business School, undertook a preliminary survey of permaculture-inspired enterprises in the UK, documenting case studies in areas such as education, community work, software design, publishing, hospitality and mental health.[306]
    - Also in the UK, the Ecological Land Co-op surveyed a number of land-based enterprises based on application of labour-intensive, regenerative methods on small land holdings (four hectares or less) and found them to combine financial sustainability not dependent on agricultural surveys with provision of a range of environmental and social benefits, in all these respects comparing favourably with large-scale agro-industrial operations.[307]
- Economic relocalisation, a key strategy within the Transition Movement, examines opportunities to short-circuit global supply and production chains by prioritising use of local goods and services.[425] [78] Making the impacts of production and consumption directly visible to those who undertake them encourages accountability and conviviality, promoting a shift in economy from creation of fiscal value to satisfaction of needs within local ecological limits.[162] Assessment of the economic benefits of relocalisation in four key sectors (energy, housing, food and healthcare) undertaken by Transition Town Totnes showed a potential dividend to the local economy of up to GBP 50 million annually.[349]
- Use of alternative entrepreneurial and economic models appropriate to the social, ecological and cultural conditions currently experienced by global society.[426] [427] A key example originating in the permaculture movement is *Regenerative Enterprise*, in which businesses exist in order to create, and make available for social use, one or more of eight different forms of capital: financial, material, intellectual, social, cultural, experiential, living and spiritual. Businesses in any locality interact as enterprise ecologies, specialising in producing different forms of capital and redistributing these in line with the 'fair shares' principle so that, for example, a highly financially productive enterprise might redirect fiscal surpluses to others regenerative of living, cultural or other capitals.[347] From this

was developed the concept of *Regenerative Capitalism*, a global macro-economic model that seeks to be productive of all eight forms of capital, insofar as each contributes to human and planetary flourishing.[428]

- Creation of local and community currencies that support local economies and are designed to promote ethics of sustainability, solidarity and inclusion. Such complementary currencies are already circulating in many cities, municipalities and regions throughout Europe.[429] [430] [431] [432]

SDG9: Industry, Innovation and Infrastructure

Community-led initiatives have long-been recognised as active sites of innovation that by changing infrastructures at local scale can increase the scope for overcoming lock-in to centralised infrastructures that are carbon-intensive and/or otherwise environmentally and socially damaging.[325] As *grassroots innovations*, they operate as experimental niches where innovation can take place largely free of the technological, social and cultural constraints of existing infrastructures and the various institutions that support them.[433] Results from the EU-funded PATHWAYS research project showed the great potential for grassroots innovations to help overcome path dependencies that currently hinder transitions towards sustainable infrastructure: early and substantial support for sustainable innovation niches would enable far deeper long-term cuts in carbon emissions and other environmental impacts than the current focus on greening existing forms of infrastructure via technological substitution.[434]

The EU-funded TRANSIT research project approached community-led initiatives as examples of transformative social innovations: changes in social relations involving "new ways of doing, organising, knowing and framing".[435] Social innovations are transformative when they "challenge, alter or replace the dominant ways of doing, thinking and organising in society."[436] The TRANSIT project investigated 20 transnational networks and over 100 local initiatives across 27 countries, including community-led initiatives like Transition Towns and Ecovillages, social enterprise-oriented initiatives like Impact Hubs and Ashoka, education-focused initiatives like Design for Social Innovation and Sustainability (DESIS) and the Living Knowledge Network, peer-to-peer production initiatives like Hackerspaces and Fablabs, and policy-oriented initiatives like basic income and participatory budgeting. These promote more socially and environmentally responsible, ethical, solidarity and collaboration-based models of the economy, banking, agriculture, material production, design, education and community life.[437]

Specific innovations developed and implemented by CLIs are often based on permaculture, and involve identifying and adapting design patterns from nature in order to create infrastructural systems that maximise their capacity for self-maintenance, regeneration and flexible adaptation to changing circumstances at the same time as they minimise their reliance on external inputs of materials and energy.[438] Ecovillages and other intentional communities develop residential infrastructures that are both highly sustainable in their direct operations and supportive of social innovation for more sustainable lifestyles and livelihoods.[439] [108] [316] Wider infrastructural innovations include networks of cooperative banks that promote investment in community-centred and regenerative activity, community-owned renewable energy projects and networks, and Community Land Trusts dedicated to holding land under community ownership and control in order to ensure that infrastructural development both serves community needs and has positive social and environmental impacts. Deeper transformation at regional scale becomes possible when multiple such initiatives converge to create, as a default rather than an alternative, a more sustainable and resilient infrastructure accessible to all.[163]

SDG10: Reduced Inequalities

Community-led initiatives place close attention to addressing distributive and procedural inequalities. Sharing and cooperation are basic common values, put into practice by various mechanisms for fairer allocation of resources and for inclusive governance. Central to both of these are commons and commoning as key organisational structures and strategies: where users and stakeholders co-organise on an inclusive basis to make decisions about management and use of resources that affect them.

Specific approaches include:

- Promoting food sovereignty by developing new, often localised, production and supply chains that cultivate relationships between producers, land and consumers; improving access to fresh, healthy, natural foods, supporting financial sustainability of producers and freeing food supply from the control of large agribusiness and supermarket chains.[440] A 2015 report on community-supported-agriculture and similar food sovereignty initiatives (such as Italian solidarity purchasing) in Europe documented activity in at least 21 European countries and recorded 6,300 initiatives involving over one million consumers.[234]
- Promoting energy sovereignty by creating community-owned renewable energy systems that allocate energy fairly, redistribute revenues to communities and community projects and reduce dependence on extractive industries supplying fossil fuels and nuclear power (see also Chapter 3.4). The REScoop federation of European renewable energy cooperatives estimates there to be 3000 such projects in Europe. A report on energy citizens from CE Delft (estimates that by 2050, 83 percent of homes in the EU (around 187 million households) could potentially become energy citizens and contribute to equitable renewable energy production, demand response and/or energy storage.[441]
- Involving diverse participants and explicitly seeking to address social, racial, gender and other kind of inequalities.[176] This is in line with the 'Fair Shares', one of the three permaculture ethics that are also central to the work of other CLI movements like ecovillages and Transition.
- Provide and support innovative responses to crisis situations. An example is Global Ecovillage Network's EmerGENcies programme, which brings support based on ecovillage experiences to communities that have faced displacement, migration or disaster. First addressing immediate crisis needs such as food, water, sanitation and housing it then supports long-term rehabilitation and recovery in ways that draw on ecovillage design processes.[442] [443]

SDG11: Sustainable Cities and Communities

Many ecovillages, co-housing projects and site-based permaculture projects were set up specifically in order to explore more sustainable ways of living; in doing so they have innovated in ways that can inform wider transitions to sustainability.[6] [379] [444] [108] Such practices are increasingly applied in more mainstream settings, particularly in the Transition movement, which takes ideas from permaculture, ecovillages and elsewhere to existing communities of place in order to redesign them in line with local concerns for sustainability.[445] Transition initiatives often build on earlier measures like Local Agenda 21, reinvigorating and updating them in line with current knowledge and circumstances.[143] Transition has thus become part of an increasing proliferation of civil society initiatives whose work opens up new possibilities for sustainability transitions in urban settings.[107] [446] [447] [448]

Specific approaches and examples include:

- Application of permaculture in the sustainable redesign of urban settlements, ranging from piecemeal interventions that connect as a 'distributed ecovillage'[105] through coordinated retrofitting of homes and neighbourhoods[449] to purposeful reconfiguration of the entire urban metabolism.[450]
- Bristol in southwest England, the world's first Transition city, has in this way acquired a patchwork of neighbourhood-scale projects in areas such as gardening, energy production, shared living, sustainability education, many now several decades old, linked by city-wide initiatives like the Bristol Pound, Bristol Energy Network and Bristol Food Policy Council.[165] [90] [451]
- Specific projects apparently focused on a single issue often become gateways through which communities develop their capacity to respond to locally identified problems and to effect more widespread, sustainable change.[452] In many cities and towns, urban food growing projects become creative and discursive spaces where community materialises, mobilises and grows, enabling collective re-appropriation and re-imagination of city life by diverse communities of city dwellers. Documented cases are found in, for example Vienna,[453] various cities in the Netherlands,[454] Madrid[292] and Rome.[455] The Transition Streets project in Totnes in England brought neighbours together to discuss and install domestic renewable energy generation and energy saving measures. While residents all achieved substantial energy and financial savings, in an independent evaluation of the project most participants highlighted building community through stronger relationships with neighbours as the main benefit.[280]
- Communities are increasingly creating, or taking part in, innovative spaces for dialogue towards shared action with different urban stakeholders, especially local government, creating connections across barriers of perception, understanding, goals and capabilities and creating new shared agendas for transitions to sustainable cities.[456] It is also important to seize the opportunities for innovative forms of transversal partnerships through culturally sensitive local policy.[447] [457] [458] In 2017 Transition Network and the international network of Transition Hubs initiated a new project, Municipalities in Transition, to identify, document and learn from successful collaborations between Transition groups and municipal authorities, and create a Community of Practice to extend and deepen this learning and apply it more widely.[459]

SDG12: Responsible Consumption and Production

Community-led initiatives promote more responsible consumption and production in various ways, many of them integral to their values, visions, aims and methods. Community-led and owned processes and institutions for organising production are increasingly common in areas such as food,[452] energy,[415] and housing,[460] and may be supported by community currencies that embed principles and values of social and environmental responsibility.[461] Localising cycles of production, supply, use and disposal ensures that both positive and negative consequences of production and consumption are experienced by and visible to those who are directly involved. Circular economy and similar methods that emphasise cyclic rather than linear material flows allow fostering of synergies among local stakeholders and create feedback loops that enable adjustments in response to unanticipated negative impacts.[108]

Greater emphasis on satisfying needs and achieving well-being through creation and use of social rather than material capital has been identified as a key dimension of sustainability,[462] and is central to the promotion of more responsible consumption and production by CLIs. An emphasis on creating social capital (along with natural, cultural and other forms of capital) allows ecovillages to achieve reported levels of well-being equal to those of residents of affluent and prosperous conventional settlements, based

on far lower levels of material consumption.[109] [110] Most ecovillages and co-housing projects achieve per capita ecological footprints far below national averages, by methods such as lower per capita built area (due to the promotion of shared spaces), use of local and sustainable resources, appropriate building design, renewable energy production, local food production and consumption (and mainly vegetarian diets) use of low-carbon transportation (such as bikes and car sharing), and minimising and repurposing material waste.[439]

SDG13: Climate Action

Many community-led initiatives foreground climate change as a key driver for action. The ways they act upon it tend to derive from transformative perspectives in which fundamental systemic change is needed, not simply decarbonisation of existing systems.[47] [463] A 2016 survey of over 300 individuals engaged in climate change mitigation action, including within CLIs, conducted by researchers at Edinburgh University, showed reported motivations to extend beyond environmental issues to encompass social justice and economic concerns.[464] Actions are motivated by holistic analyses that transcend the distinction between mitigation and adaptation, such as that provided by social-ecological resilience, and span a range of physical, social and cultural fields of action.[122] They often involve self-monitoring and reflection, helping to nurture individual and collective responsibility as well as inform meaningful and effective action to reduce carbon footprints and build adaptive capacity in the face of both changing weather conditions and the social, economic and cultural changes implied by a move away from fossil fuel dependency.[10] [316] Many CLIs operate as commons, whereby inclusive and equitable processes for decision-making and allocation of shared resources create the responsiveness, flexibility and values-led orientation necessary to overcome current institutional and cultural barriers to decarbonisation.[465] [85]

Climate action is one of the areas that have generated particularly deep partnerships, and forms of mutual learning, between community-led initiatives and researchers (see also Chapter 1.3). An important analysis arising from this form of transdisciplinary collaboration calls for an emphasis on processes of change, including attention to learning, power, equity and relationships, with research reoriented from analysis to fostering practical action. It identified ten key factors for effective community-led responses to the need to retain global temperature rises within a 1.5ºC limit: enhanced adaptability; responsiveness to shocks and stresses; horizontal and cross-issue working; collaboration across social scales; fast and deep reductions in carbon emissions; creation of shared narratives about climate change; direct engagement with emerging futures; attention to climate disadvantage; orientation towards processes and pathways; and working for transformations towards resilience.[14] Increasingly, the perspectives and actions of community-led initiatives on climate change are shifting from becoming the object of research to vital dimensions of transdisciplinary methods dedicated to directly helping to achieve resilience through practical action.[3]

SDG14: Life below Water

The movements of community-led initiatives considered in this report are not specifically active in protection of marine habitats. However, their actions have indirect benefits for marine ecology by reducing outputs of pollution and wastes that ultimately reach aquatic habitats and cause damage, reducing dependencies on fossil fuel extraction in offshore areas, promoting dietary choices that reduce pressure on populations of fish and other forms of marine life, and helping reduce ocean acidification associated with increasing concentrations of carbon dioxide in the atmosphere.

Traditional coastal and island communities play increasingly important roles in co-management programmes that seek to reconcile safeguarding local livelihoods based on marine resources with conservation and protection of aquatic life. Such actions take various forms, for example through transferring management rights and responsibilities to municipalities in Norway,[466] rebuilding local and regional management institutions in ways that integrate the skills and interests of both indigenous and non-indigenous fishing communities in British Columbia,[467] and integrated management systems involving multiple stakeholders in the Netherlands.[468] It is possible these approaches could learn from and contribute to actions by CLIs to help protect marine life.

SDG15: Life on Land

Community-led initiatives often use ecologically regenerative methods that go beyond sustainable production and consumption and actually enhance the biotic and ecological richness of the spaces they inhabit, manage and use. In particular, permaculture is a design method based on working with and learning from nature, whose core principles are derived from observations of natural systems and understanding of the features that promote their sustainability and resilience.

Such thinking not only informs approaches to agriculture, settlement design, land use and planning by CLIs, but is deeply integrated into social design in a way that embeds sustainability ethics as inseparable from human wellbeing.[469] Many CLIs thus operate on the basis of individual and shared conceptual models that challenge the perceived separation of humans and nature.[470] [471] Practically, this promotes settlement designs, lifestyles and management practices that integrate natural processes and elements and supports more ecologically harmonious outcomes.[472] [473]

Specific approaches include:

- Promoting biodiversity and ecological integrity through maintenance and preservation of green open spaces. For example, Cloughjordan Ecovillage in Ireland limits construction to a third of its land, with a third dedicated to allotments and other green infrastructure and another third to reforestation with native species.[474]
- Preservation and revitalisation of native habitats (wetlands, forests, etc.)[475] and wildlife.[476] In a survey of 29 showcase ecovillages conducted by Global Ecovillage Network, all but one reported that they actively work to restore degraded ecosystems, with 63 percent saying they do it 'a lot'. 21 respondents gave figures for the areas of land they had reforested, with an average of 84 hectares per settlement and two, including Damanhur in Italy, reporting over 200 hectares. Respondents also reported a range of other techniques to enhance or safeguard non-human life, including regenerative agriculture, reforestation, clean cook stoves, farmland restoration, water saving, composting, farmland irrigation and production of biochar.[23]
- Use of agroecological and agroforestry-based methods of food production rooted in local cultural and environmental conditions and able to mitigate climate change, increase biodiversity, increase soil quality and generate other socio-ecological benefits.[353] [477] [478]
- Promoting community gardens inspired by permaculture or organic/biodynamic agriculture. This can enable exchange of knowledge and experiences about food, promote biodiversity, increase soil quality, improve food security and food sovereignty, build community, promote social inclusion and gender and racial equity, supplement low incomes and improve interactions and interdependences between people and nature.[479]

SDG16: Peace, Justice and Strong Institutions

Community-led initiatives prioritise experimentation towards constructive social relationships and have developed large bodies of practical knowledge and experience on collective decision-making, inclusive governance, personal and interpersonal development, conflict resolution and transformation, and community building.[108] These competences and skills provide tools for creating and operating internal institutions that promote inclusion, solidarity, social harmony and justice. The same tools can be used for promoting peace, justice and cooperation more widely, for example through interventions in areas of long-term conflict or social division. The governance methods derived from them are increasingly applied and promoted more widely as the organisational basis for translocal and cross-movement networks of CLIs and collaborations between CLIs and partners in other sectors.

Specific initiatives include:

- The Chikukwa Project in Zimbabwe has trained around 50 villagers in conflict transformation. It has developed its own system that combines traditional social technologies with established tools from European CLI networks, setting up local Building Constructive Community Relations (BCCR) groups in its six member villages. Local groups mobilise when conflict arises in their village, bringing together those involved and the wider community to identify the needs and intentions of those involved and work together to develop and enact solutions that address the root causes of the conflict.[480]
- Tamera Ecovillage in Portugal organises peace pilgrimages to areas like Colombia and Palestine, linking its efforts to build harmonious communities locally with contributions to overcoming conflict and its consequences more widely, supporting reconciliation and forging lasting friendships and collaborations. It is seeking to create the Tamera Peace University to offer courses on sustainable cultures of peace and follow-up workshops on community building.[60]
- Several permaculture projects in Israel and Palestine employ permaculture as a common language to overcome separation and build understanding and collaboration between Israelis and Palestinians, sometimes in the face of active repression by the authorities.[481] At Hava and Adam Eco-Educational Farm, Israeli and Palestinian farmers work together to address land scarcity and climate change, for example using traditional irrigation techniques and planting practices, planting drought-tolerant native crops and using intensive cultivation techniques to grow more food in smaller spaces.[60]
- Los Angeles Ecovillage in California was founded as part of community rebuilding efforts in Wilshire/Koreatown, a highly ethnically diverse neighbourhood that suffered great loss of life and physical damage during civil unrest sparked by institutional racism in 1992. Elsewhere in the USA, Growing Power in Milwaukee addresses what its founder Will Allen describes as food racism: the status of many African-American and Latino neighbourhoods across the country as 'food deserts'. Its urban farms, distribution hubs and retail outlets are the only sources of fresh, nutritious produce for most residents of an area where nutrition-related health problems are endemic.[60]
- Many CLIs employ innovative methods for inclusive decision-making and decentralised, non-hierarchical organisation. A common and increasingly widely used example is Sociocracy, based on interacting circles of collaborators working in specific domains, each circle self-organised and self-governed and connected to those with intersecting interests via overlapping membership.[377] Sociocracy is the basis of decision-making in projects like Biovilla in Portugal, national networks like CELL in Luxembourg and international networks like Transition Network and ECOLISE. It is

also the basis of governance in the international Municipalities in Transition project that explores collaborations between CLIs and municipalities worldwide: sociocratic circles take responsibility for key aspects of delivery and connect with existing circles within Transition Network and the International Network of Transition Hubs, to whom the project is accountable, as well as other partners involved in the project, namely municipalities and researchers.[482]

SDG17: Partnership for the Goals

Community-led initiatives operate in partnerships of multiple kinds, within and across locations, regions, movements, countries, sectors and other divisions. Many are themselves partnerships at local level: for example, Transition initiatives typically begin by identifying, contacting and beginning to develop links with and among groups and organisations already active in their community. Local initiatives often join or establish networks at regional level, national hubs nowadays operate in several dozen countries, and Transition Network cooperates with the network of national hubs to provide coordination and support for the movement as a whole. Ecovillages often form into national associations, cooperating via continental networks in Europe, Africa, Latin America, North America and Asia/Oceania with GEN International as the global coordinating body.[483] Permaculture operates via national associations and regular meetings or convergences at regional, national and international levels, including an International Permaculture Convergence (IPC) held in a different country every two years. Between the 14th IPC in Cuba in 2013 and 15th IPC in London in 2015, key organisers in the international permaculture movement facilitated a consultation called Permaculture's Next Big Step to identify priorities and possibilities for strategic movement-wide action at global level.[183] The network issued a climate change statement and action plan on behalf of the international permaculture movement at the London IPC in 2015,[122] and has established the permaculture CoLab in order to develop and implement tools and methods for effective collaboration across a decentralised global network.[175] Such translocal networks also exist in numerous other movements of community-led initiatives, and have great, if not yet fully realised, potential to exert a transformative influence on social, economic and political institutions that are currently locked in to socially and environmentally destructive patterns incompatible with progress on the SDGs.[179]

Cross-movement partnerships and collaborations are becoming increasingly important. In Europe, national and international networks in the ecovillage, permaculture and Transition movements came together to found ECOLISE as a common platform for networking, collaboration, learning and policy advocacy in 2014.[484] ECOLISE builds in wider partnership by including among its members organisations that do not represent CLIs directly, but support them through specialised expertise in areas such as research, education, project delivery and communications, along with the ICLEI network for sustainability action among municipal authorities.[383] It also collaborate with CLIs and related movements beyond its member networks, for example as a member of Climate Action Network Europe, and with key allies within the EU like the European Economic and Social Committee and Committee of the Regions.

Partnerships are also widespread at local/regional and national levels. The Living in Sustainable Villages project is run by GEN Germany in cooperation with local authorities in Saxony-Anhalt, Thuringia and Baden-Württemberg. Five established ecovillages (Sieben Linden, Lebensgarten Steyerberg, Gastwerke Escherode, Schloss Tonndorf and Schloss Tempelhof) work in partnership with mainstream communities experiencing declines in the social, cultural and economic quality of village life. Ecovillages work with their partner villages to develop a positive vision of their community's future, with the aim of creating a village sustainability plan and fostering the linkages, learning and mutual support among people, places and organisations necessary for its implementation. In Portugal, ecovillages, Transition groups, permaculture projects and other community-scale sustainability initiatives use the national

RedeConvergir online mapping platform as a tool to promote visibility, interconnection and collaboration, with each other and to the wider world, supported by technical assistance from the University of Lisbon.[170] In the UK, CTRLshift arose as a new alliance of progressive organisations in response to the political and social crisis highlighted by the Brexit process, in order to create a broader base for exploring, creating and enacting alternatives to current systems.[485]

7. Policy Insights

7.1 Policy Insights Arising from Research

Research projects funded within the FP7 and Horizon 2020 European research funding programmes are often intended to inform policy, and many attempt to translate their findings into forms useful to policy-makers. This chapter summarises key policy-relevant insights arising in projects involving community-led initiatives.

Most of the policy insights mentioned below are a result of in-depth research in Europe and elsewhere taking CLIs (initiatives and networks) as case studies. They have involved more than 100 Community initiatives in Europe and dozens of their networks. The most important European projects concerned are TESS, TRANSIT, ARTS, PATHWAYS and GLAMURS.

7.1.1 Key Policy Insights to be Considered during Policy Design, Creation, Delivery and Evaluation

- Support experimentalism: explore creative and novel policy approaches such as green model regions, partial rollout of new instruments and pilot schemes[15 486]
- Improve information, transparency and accountability in policy-making[157 15]

CLIs' policy insights include moving beyond concepts such as economic growth and universal employability (paid work) as the only way for society to exist. **Photo: Gaia Education**

- Formulate transformative policy mixes and harmonise laws and regulations to ensure coherence in policy implementation[157 15]
- Focus on the whole value chain from production to demand[487]
- Use/build new approaches for deliberation and participation (based on creativity, transparency, flexibility and reflexivity), supporting citizen engagement and mobilisation[488]
- Promote inclusive policy by moving beyond conventional concepts such as economic growth and universal employability (paid work) as the only way for society to exist and for people to have meaningful roles in the world[489]
- Include non-quantifiable results and impacts, as well as multiple and diverse ways of evaluating the contributions of CLIs[15]

7.1.2 Key Policy Insights Concerning Supporting and Empowering CLIs to Deliver Sustainability at Local Level

- Simplify procedures and bureaucracy[157 15]
- Establish and support ongoing dialogue between CLIs and public authorities[157 488 15]
- Remove barriers and constraints CLIs face to accessing public funding[157 488 379]
- Improve CLIs' access to assets and space; increase training, information and knowledge for and about CLIs, enabling the mobilisation of ideas, values and visions into action towards a sustainable society[157 379]
- Support CLIs to communicate better their aims, processes and achievements to the wider population and other interested people, and support their education programmes[379]
- 'Invert the mindset': in other words, acknowledge the role of CLIs as sources of political empowerment, rather than something that needs public support or top-down management[157]

7.1.3 Key Policy Insights for Promoting Human-Nature Relationships and the Commons

- Promote and support land-based communities
- Undertake comprehensive mapping of existing natural commons[490]
- Introduce comprehensive legislation to secure and protect the commons[490]
- Establish policy frameworks for co-management of urban commons by local municipalities and citizens[490]
- Recognise social economy organisations as the most appropriate form for citizen management of commons and revise the Organic Law for the Popular and Solidarity Economy (LOEPS) to allow for the creation of both community service cooperatives (social/solidarity co-ops) and multi-stakeholder cooperatives as social instruments for the management of commons[490]

7.2 Institutional and Governance Recommendations

International scale

- Redesign the monetary system in support of sustainable and regenerative lifestyles[491 430]
- Adopt new macro-economic models not structurally dependent upon GDP growth[68 69 418]

National scale

- Reduce working hours, allowing more people to be involved in community-led initiatives and to provide stimulating and meaningful jobs for all[71]
- Implement Universal Basic Income[437 493 494 420]

Sub-national scale

- Recognise and support agroecological smallholdings that demonstrate high levels of economic, environmental and social sustainability, over a recommended timeframe of five years[307]
- Support farm diversification through land-based innovation centres[307]
- Implement local currencies that can foster economic relocalisation[495 496]

7.3 Funding Recommendations

- Recognise that local action on the part of CLIs requires resources and support access to the necessary resources in transparent and efficient ways[488]
- Expand participatory budgeting in European municipalities[437]
- Diversify funding mechanisms to kick-start social innovation[15]
- Recognise and support project applications from CLIs that demonstrate innovative and transformative processes and methodologies[15]
- Enable dialogue between funders and CLIs to enable collaborative proposal development and allow funders to be more sensitive to local contexts[15]

7.4 Seven Steps to a Sustainable Europe

The political and existential crisis currently engulfing Europe reflects the needs for genuinely transformative change in current dominant social, political and economic systems, and the shared understandings that underlie them.[515] Climate change, resource depletion, ecological degradation, and increasing inequalities at all levels are not anomalies that can be addressed through cosmetic adjustments to the status quo. They are inbuilt and inevitable systemic outcomes of a form of liberal democracy that has failed to examine or address the contradictions between its rhetorical commitments to freedom, equality and solidarity and structural reliance on forms of economic organisation that are inherently destructive of ecological, social and cultural value.

Community-led initiatives across Europe and elsewhere are actively envisioning, creating and living within alternatives that are rooted in fundamental ethical commitments to sustainability, equality and

social justice. Largely located on the margins of mainstream society - the only space where their existence is currently possible - and limited by overwhelming material, cultural, institutional and structural constraints, they are far from realising their potential as catalysts for society-wide transformation. However, they are the best working models that currently exist of how a sustainable and fair society under current global circumstances might look. Their progress towards global sustainability targets far exceeds that of mainstream society. This has been achieved in ways that radically challenge existing social, cultural and political paradigms. These challenges need to be embraced, and these alternatives become the basis of a new normal, if Europe is to steer away from its current trajectory towards catastrophe.

This section sets out seven basic preconditions for a change in direction towards sustainable prosperity in Europe, identified on the basis of the evidence assembled in this report. While not policy recommendations as such, they are proposed as a basic framework within which the creation and implementation of social, economic and environmental policy could take place. Such a framework could ensure alignment of policy and action with the rhetorical commitments of the Paris Agreement and Sustainable Development Goals, and with basic ethics of care for people and nature. It also provides a set of basic conditions for an inclusive, equitable and empowering democracy, in which the diversity of human outlook, capacity and potential becomes a common resource for collective progress towards a society that promotes the flourishing of all those, human and non-human, who form the community of living beings on this planet.

7.4.1 Step One: Moving Beyond Growth

Increasing volumes of evidence challenge the privileged status of continuous growth in GDP as a central and unquestioned goal of economic policy. In general, policy-makers rightly demand that policy be informed by appropriate evidence. Accordingly the EU invests substantial funds in supporting research to inform policy, including its own 'Beyond GDP' initiative, whose first report appeared in 2009.[516] [517] Curiously, the alternative approaches and tools developed in such initiatives appear to exert little influence on policy, and in practice the assumption that economic growth is both necessary and desirable appears to be uniquely insulated from any requirement for scrutiny. It persists despite increasing evidence that, in established economies such as those of most European countries, further growth causes more harm than good and is almost certainly incompatible with both sustainability and social welfare.[69] [418]

The arguments against this societal addiction to growth come from many sources, including national committees and the Better Life initiative of the OECD.[518] The core proposition of the Degrowth movement is that the default presumption of continued GDP growth fatally limits the possibilities for effective policy, and hence action, towards sustainability. Only through alternative economic models that do not rely on endless growth can workable strategies for sustainable prosperity be devised and enacted.[68] This democratisation of sustainability policy, all evidence suggests, is essential if the targets set out in the Paris Agreement and Sustainable Development Goals are to be achieved.

A recent study by the Heinrich-Böll Foundation endorses this view, and exposes the assumption of continued economic growth as a major weakness in the models and scenarios developed by the IPCC. The decarbonisation pathways modeled by the IPCC all assume economic growth to be a precondition for human welfare. This limits the range of scenarios considered to those that are either technologically unfeasible or socially undesirable. All scenarios that remain within the agreed 1.5°C limit rely on carbon dioxide removal technologies that are untested, in some cases non-existent, unlikely to be economically viable and often carrying unknown and potentially serious risks. Many scenarios also tolerate some level of temporary overshoot, and assume discounting rates that pass the costs of overshoot and carbon dioxide

removal on to future generations. Removing the assumption of growth opens the possibility of pathways and scenarios that decarbonise the economy at the rate and to the extent necessary to remain within safe limits.[519] Abandoning the empirically dubious adherence to growth also opens up numerous further possible benefits of a planned transition to post-growth macroeconomics.

Research on ecovillages provides empirical evidence to support the case that decoupling quality of life from levels of material consumption is not only possible, but also necessary to reconcile wellbeing with sustainability. Ecovillages emphasise the contributions of social, natural, cultural and, in some cases, spiritual capital to fulfilling their residents' needs. This allows material infrastructures to operate with much lower throughputs of energy and materials, much closer in magnitude to what local renewable sources can provide.[110]

Initiatives working within existing communities, such as Transition, community permaculture, solidarity economy and many more, bring such approaches within the reach of wider populations. Combining measures to rebuild community with practical measures to enable and support low-carbon, ecologically regenerative lifestyles, they create the prospect of enhanced quality of life for all people against a background of declining greenhouse gas emissions and concerted attention to social and ecological regeneration.[340]

7.4.2 Step Two: Nurturing Commons Ecologies

The basis for post-growth organisation of economic and social life revealed by community-led initiatives (and by non-capitalist indigenous and traditional societies worldwide) is the commons. Commons are diverse institutional mechanisms whereby people self-organise to curate shared resources (material or immaterial, i.e. knowledge and information), based on agreed sets of rights and responsibilities.[520] They exist at all scales, from micro-commons comprising the shared resources of a household up to global commons such as the atmosphere, oceans, biodiversity and collective cultural heritage of humanity, and are an essential ingredient of all documented cases of resilience and sustainability in human systems.[521]

Whereas growth in capitalist economies in large measure entails commodifying resources and relationships previously held in common as goods and services traded in markets, community-led initiatives seek to grow material, social, cultural, natural and other forms of shared resource within new forms of commons.[346] This aligns CLIs closely with indigenous and traditional peoples seeking to defend the commons on which they depend from appropriation by states and markets.[85] While not all commons necessarily embody principles of sustainability and equity, it is increasingly widely recognised that transition to a society able to support diverse human needs while maintaining and restoring ecological integrity will in large measure be a transition from markets to commons as the basis for economic and social organisation.[523]

Commons ecologies are interconnected local networks of commons that emphasise the interrelationships necessary for positive environmental and social outcomes.[346] The commons ecologies created, defended and sustained by community-led initiatives are working practical examples with potential both to diffuse more widely and to contribute to the wider political and economic changes necessary. Policy can actively support this by both supporting new and existing commons directly, and creating conditions for supportive relationships with state and market institutions.

Attention to the commons is already evident in some fields of global policy. Recent recommendations of the T20 group, which provides policy guidance to the G20, emphasise the importance of nurturing global commons, including natural systems such as oceans, biodiversity, climate and lands and cultural

commons providing access to basic facilities such as education, health and housing.[524] The Common Home of Humanity initiative, supported by the Portuguese government and hosted at the university of Porto, seeks to leverage international agreement through the UN and other mechanisms towards managing the global environment as a commons, with the aim of keeping it within the 'safe operating space' represented by the planetary boundaries.[525]

Such global initiatives are welcome, but insufficient by themselves. By focusing exclusively on the global, they overlook the scalar nesting that is a feature of all functioning common property regimes.[526] Global commons can not be organised in top-down fashion, or as an outgrowth of capitalist or market-oriented institutions. They must instead be built incrementally upon existing commons ecologies at community scale, as interacting clusters of commons ecologies from micro and local scales up to the global, and at multiple intermediate scales between these.[527]

The P2P Foundation has put forward a number of policy recommendations for strengthening and nurturing the commons. These include enhanced measures for protecting knowledge commons, including rights-based support for ancestral and traditional knowledge, wider adoption of free and open licenses for publically funded research, improved training in the use and development of free and open source resources, de facto abolition of the patent system, economic incentives such as tax benefits and microcredit schemes for commons-oriented projects and organisations, new legal support frameworks for cooperatives and other collectivist organisations and associated institutional support, creation of a community-managed Community Investment Fund for commons-oriented projects and organisations, amendment of public procurement legislation to prioritise the use of free technologies, and establishment of a National Observatory for Free Technologies to assess the economic viability and fitness of free technologies to meet existing needs and to support the aforementioned policy measures.[528]

7.4.3 Step Three: Eco-Social Regeneration

Attention to the interactions among land use patterns, legal regulation of access to and usage of land, climate change mitigation and adaptation potential and wider considerations of ecological integrity and resilience is a vital part of strategies to reconcile fulfillment of the Paris Agreement and Sustainable Development Goals with improved social and economic welfare. Evidence is growing that managing land as commons under the direct control of local communities of residents and users is a vital strategy for climate change mitigation and adaptation, capable of linking it with various wider actions for ecological and social regeneration undertaken by community-led initiatives.

The Missing Pathways Report produced by the Climate, Land, Ambition and Rights Alliance (CLARA) synthesises data on the mitigation and sequestration potential of various different forms of land use.[529] Its central argument is that attention to the wider ecological (and social-ecological) context is being sidelined in favour of a reductive focus on the mitigation and sequestration potential of landscape commodification through mechanisms such as REDDS and production of energy crops. This concurs with recent holistic analyses such as that of Charles Eisenstein, who suggests that ecological degradation and consequent weakening of the biosphere's capacity to absorb and buffer changes in atmospheric composition is at least equally important, and perhaps more so, in driving climate change as greenhouse gas emissions themselves.[530]

The CLARA report examines the potential of mitigation and sequestration strategies based on ecological and social-ecological regeneration: protection of existing carbon sinks; restoration of degraded lands; shifting to agroecological and other ecologically restorative forms of land use; and changing production methods and consumer habits in the EU and other importers of goods based on ecologically destructive

land use in order to reduce overall demand, particularly of animal-based foods and timber products. Based on figures from a range of peer-reviewed studies, it estimates that a global strategy combining these approaches could reduce annual emissions by 10Gt CO_2e and sequester 11Gt CO_2e per year by 2050.[529] By safeguarding, enriching and creating ecologically diverse ecosystems and agroecosystems with high levels of resilience, it would also greatly increase the capacity of ecological life support systems and food production to adapt to climate change. In addition, it would arrest loss of biodiversity and ecologically rich habitat to a degree that makes remaining within, or returning to, other planetary boundaries more likely.

The CLARA report emphasises the social aspects of land-based mitigation and sequestration, particularly the importance of land tenure. It points out that the actual and potential contributions of these strategies to climate change mitigation, carbon sequestration and ecological restoration are demonstrably highest where land is retained under collective self-management as commons by its indigenous and traditional inhabitants. The potential to reconcile and synergise stabilisation and reduction of atmospheric carbon levels, maintenance of biodiversity and broad-scale ecological functionality, food security in the face of climatic and other changes, and respect for human rights, therefore depends on placing issues of land ownership and use rights at the centre of approaches to addressing climate change.[465]

Although the CLARA report focuses mostly on the lands and situations of indigenous and traditional peoples inhabiting tropical and sub-tropical forests, its conclusions are in many respects also relevant to policy and practice concerning community-led sustainability and climate change action in Europe. Many community-led initiatives are experimenting with and applying regenerative methods such as agroecology, agroforestry and regenerative agriculture, and employing inclusive ownership and decision-making to enable this. One aim, and possible consequence, is reduced dependency on exploitative systems of international production and trade that threaten indigenous lands and livelihoods, via greater localisation of economic activity.[122] Many are inspired in doing this by the livelihood strategies, social organisation and cultural outlooks of indigenous and traditional societies, who have much to teach transitions to sustainability in industrialised societies.[531] This also raises the possibility of mutual support and strategic collaboration, based on a shared interest in promoting commons-based forms of land management as a constructive, socially and ecologically regenerative response to climate change.[85] The Local Communities and Indigenous People's Platform established at COP24 by the International Indigenous Peoples' Forum on Climate Change offers a potential forum for exploring and initiating such collaboration.[532]

Key measures that could support self-organisation for socially and ecologically regenerative land use at community level include:

- Change legal restrictions, subsidies and incentive frameworks concerning agriculture and land use to prohibit destruction of natural ecosystems and incentivise agroecological farming and ecological restoration
- Introduce structured taxes on agricultural and forest products that penalise ecologically and socially destructive forms of production, and use the proceeds to support, defend and encourage regenerative uses, within Europe and in producer countries outside Europe
- Proactively encourage transfer of land out of consolidated private and profit-driven ownership via land value taxes, structured in order to eliminate the potential to profit from rent-seeking, speculation and conversion to ecologically and socially degrading uses
- Progressively abandon market-based allocation of land and land use rights in favour of mechanisms that maintain land as a common pool resource, making managerial decisions and allocating usage rights based on capacity for social and ecological regeneration

7.4.4 Step Four: Solidarity Economics

The seeds of a commons-based enterprise economy are already well established in the form of the social solidarity economy (SSE) (see Chapter 3.5). This consists of enterprises based on cooperative and other inclusive and democratic organisational structures that exist in order to create social, cultural and/or environmental value, with income generation a means towards these contributions to the common good rather than an end in itself. With around two million such enterprises employing an estimated 15 million people in Europe in 2015,[134] the SSE is already a major economic and social force, organised through the European chapter of the international RIPESS network and numerous national and regional associations. Our key proposal here is that it already offers a basis for transition to a sustainable and equitable economy that does not undermine or put at risk employment, livelihoods or the provision of essential goods and services.

Evidence for this potential lies in the demonstrated success of SSE in overcoming the effects of economic marginalisation elsewhere. Solidarity movements in Brazil and elsewhere in Latin America provided economic alternatives essential to the survival of large sectors of the population excluded from the mainstream economy under partisan and dictatorial regimes. In Greece, Portugal, Spain and other places particularly hard hit by the 2008 financial crash and ill-judged austerity measures that followed, solidarity actions have buffered the effects on those worst affected by the collapse of national economies.

Creating a post-growth, commons-based, regenerative economy at the speed necessary to avert social and ecological disaster will require rapid dismantling of the growth-dependent, market-led, socially and ecologically destructive economic structures on which most people in Europe depend. In order to achieve this shift without disrupting the provision of essential goods and services, we propose a structured and concerted shift to a new type of enterprise economy compatible with post-growth economic conditions. Enterprises of the kind that predominate now, structured to maximise financial revenues, to compete with each other under so-called 'free market' conditions and incentivised to externalise ecological and social damage, are inappropriate for a fair and sustainable society. New and emerging models of solidarity enterprise and solidarity economies at local and regional scales provide workable and proven alternatives, which should be actively supported and encouraged.

Esperança/Cooesperança, a poverty reduction project based in the municipality of Santa Maria, Rio Grande do Sul, Brazil, organises regular Solidarity Economy markets. They do this in order to promote social inclusion by supporting income generation among disadvantaged groups, as well as wider regenerative goals such as relocalisation of production of food and other essentials. As well as being sites of commercial exchange, they support the bottom-up construction of counterpower by intentionally cultivating trust and collaboration between shoppers from predominantly mainstream backgrounds predisposed towards ethical consumption choices and producers from minority, countercultural or otherwise socially and economically marginalised groups, including shanty-town dwellers, indigenous and afro-descendent communities and *colonos*, subsistence farmers descended from early 20th century German and Italian immigrants.[533] [534] As alternative social and economic spaces, such markets provide a venue for civil society engagement with the state and economy and the creation and coordination of socially and ecologically regenerative activities.

The solidarity movement in Greece arose as a response to severe hardship experienced by large numbers of people in the wake of the national economic crisis and subsequent introduction of austerity measures and enforced sale and privatisation of public assets and services associated with the 2011 financial bailout. It consists of multiple self-organised initiatives for the cashless provision of basic goods and services,

including food, medical care and education, and support for victims of redundancy, foreclosure and withdrawal of state services, all organised on a voluntary, participatory and democratic basis.

Between 2009 and 2013 basic living standards suffered a marked decline for most of the Greek population, with marked increases in levels of unemployment (especially among youth), poverty (including child poverty), deprivation, inability to meet basic needs, exclusion from the national health care and education systems, foreclosure on homes, closure of small businesses, rates of depression and suicide, and incidents of aggression against refugees and other immigrants, all at a time of declining public spending and contraction of public services, particularly health care.[535] The solidarity movement arose as a grassroots response to this, people and communities self-organising to create alternative systems of provision based on principles of equality and fairness.

From early 2012, solidarity initiatives began to form in many communities as bottom-up efforts to ensure provision of basic needs. All operate on a virtually moneyless basis, based on voluntary labour, donations of basic goods and small levels of financial donations to cover unavoidable monetary costs such as rent and utility bills. Drawing on principles of direct democracy, self-organisation and people's assemblies established in the 2011 anti-austerity protests, they operate horizontal forms of organisation in which each person's needs and opinion, whether they are a skilled volunteer or a recipient of support (or both), carry equal weight. By December 2014 such initiatives included 40 solidarity clinics staffed by unemployed or precariously employed doctors and nurses and seeing an average of 2000 patients per month; 47 solidarity food initiatives along with 21 solidarity kitchens and numerous cooperative social groceries and collective farms, supported by 45 'without middlemen' initiatives to allow food producers to obtain higher prices and consumers to spend less, and numerous initiatives in other areas such as clothing, education and cultural activities. At the same time, the monetary social and solidarity economy grew, with at least 300 new producers' and workers' cooperatives forming, many actively cooperating with solidarity movements and operating on principles of equal pay, worker self-management and democratic decision-making.[535] Against this background, Solidarity for All formed in 2014 as a collective structure to facilitate networking and communication among solidarity initiatives, improve the visibility of such initiatives, support existing projects, promote a politics of participation and solidarity, organise solidarity campaigns at national level and improve connections between the international solidarity movement and initiatives in Greece.[536]

In addition to providing for immediate material needs, the movement also demonstrates working alternatives to the neoliberal model that so dramatically failed the country and its people. These alternatives emphasise participatory, people-centred democracy through an emphasis on collaborative working, use of cooperative structures, and commitment to inclusive decision-making and organisational processes. They additionally constitute a material basis for these more democratic institutions to scale up and form structures for national level governance not tied to unsustainable and inequitable social and economic models.[537] In this way, the solidarity movement could act as a vehicle not just to challenge and even assume political power, as Syriza did in Greece, but to model and enact an entirely new form of power rooted in principles of popular and participatory democracy.[538]

Building on lessons from Brazil, Greece and elsewhere, and as part of a concerted effort to create a regenerative, commons-based economy, systematic support for the social and solidarity economy can be achieved through various means. Appropriate support measures include legislative and fiscal enablers such as supportive legal and administrative frameworks and taxation regimes that incentivise shared ownership, inclusive decision-making and entrepreneurial activities that promote growth and regeneration of common pool material, social, natural and cultural capitals. Such measures need to avoid coercion and creation of dependencies; for example fiscal support could be targeted at particularly

vulnerable stages such as start-up and buffering fluctuations in income and expenditure rather than seek to provide ongoing revenue. Above all, enterprise needs to be embedded within frameworks for inclusive governance that ensure it understands and responds to collective needs within the communities it serves.

7.4.5 Step Five: Inclusive Governance

The sustainability crisis is above all a crisis of democracy, reflecting appropriation of national and EU politics by vested financial interests and consequent political disenfranchisement of the wider population. The rhetoric of 'sustainable development' evades attention to the root causes of sustainability and marginalises meaningful approaches that question the status of GDP growth, emphasise the importance of the commons, promote regenerative solutions and mobilise social solidarity economy as a means to embed principles of sustainability and social justice in the everyday organisation of economic life. This is a symptom of deeper structural incompatibility between centralised and hierarchical allocation of decision-making power and the possibility of an inclusive and sustainable society.

Community-led initiatives model inclusive forms of governance that fully empower participants in relation to all decisions affecting their lives. More widely adopted at multiple scales, these can provide the basis for genuinely democratic systems that can first co-exist with, and ultimately replace, current political systems. One example is Sociocracy, a system of governance that seeks to create harmonious social environments and productive organisations and businesses. It is distinguished by the use of consent rather than majority voting in decision-making, which follows open discussion by people who know each other. It provides a coherent set of principles based on patterns for collaboration, to navigate complexity and to adapt and evolve based on learning from experience and accommodation to changing circumstances, understandings and needs.

Transition Network, the coordination and support body for the international Transition movement, adopted a new shared governance model in 2018 following extensive consultation within the wider Transition movement aimed at clarifying its organisational purpose. The model, adopted in order to address that purpose and influenced by Sociocracy and related methods, is considered to be an ongoing experiment and anticipated to change as needed over time. It is based on uptake by people within the team of roles identified as necessary to fit agreed purposes, with defined responsibilities assigned to these roles. Roles are self-organised into circles that reflect their overlaps and interconnections, and in which each role exercises equivalent power guided by the purpose of the role, circle and organisation. Roles and circles are considered to have authority in their area of responsibility. Individuals within roles and circles are expected to seek out relevant information, advice and feedback, and to anticipate and transparently communicate ways in which their activities might impact others. Circles adjust the range and nature of their constituent roles, and identify and resolve tensions among them, at periodic meetings. Decision-making is primarily based on consent and other participatory methods, part of a dynamic overall steering process that seeks to maintain momentum through small incremental steps and rapid and pragmatic adjustment to changing circumstances, understandings and needs.

The governance model is supported by a set of explicit relational agreements designed to cultivate a healthy collaborative group culture. These agreements include accountability for actions taken and not undertaken; self-awareness of personal needs and impacts on others; encouraging and regularly expressing appreciation; communicating with respect and compassion for self and others; offering and receiving feedback in healthy ways; cultivating resilience to conflicts; becoming adequately resourced, materially and emotionally, for collaboration; and exercising sovereignty via agency, setting and

respecting boundaries, saying 'no' when necessary, voicing reasonable objections, recognising and naming conflict, and honouring and expressing the diversity of experience within these processes.

The governance model and associated agreements aim to support dynamic and creative collaborations within which individuals are empowered to take action, which is recognised as the essence of Transition throughout the movement. They are designed to help explore effective ways of working that are responsive to change while remaining faithful to organisational purpose, to mobilise collective intelligence and diverse perspectives to energise and inform action, to ensure visibility and distribution of power, and to create a more resilient and agile overall working structure. Their overall result is that Transition Network is governed as a commons, in which staff and trustees agree on how best to mobilise material and immaterial resources and allocate associated responsibilities in fulfillment of its aims.

Based on broader upscaling and outscaling of similar principles, and also strongly influenced by Sociocracy, Andy Goldring, Chief Executive of the Permaculture Association (Britain), has proposed an 'EDGE governance' model to enable more effective organisation of civil society organisations in order to bring about necessary change.[539] The model consists of interconnected governance structures at multiple scales: collaborations between civil society organisations and government at local and regional scales, new collaborative structures sitting alongside and holding to account governments at national, continental and global scales, and thematic structures to provide strategic guidance at local and regional levels and ensure accountability at higher levels.

Governance nodes at the different levels within the structure operate semi-autonomously and are open to any stakeholders at the respective scale able to demonstrate a proven commitment to ecological and social wellbeing. Each operates as an EDGE: an Emergent Dynamic Governance Ecosystem. An EDGE is emergent because its properties can not be anticipated in advance of the collaboration, dynamic both because they seek to bring about change and themselves change in the process of doing so, governance systems because they seek to achieve defined collective goals, and ecosystems because they are composed of separate organisational structures in interrelationships consisting of material and informational exchange. Each EDGE is envisaged to act as an action learning unit, devising and testing solutions to identified problems and sharing learning within and across scales through multiple networks of communication.

The EDGE model seeks to activate the full potential of networked governance, fully harnessing the collaborative potential of communications technologies and adequate to finding collective solutions to current ecological crises. It represents a potential framework for socially and ecologically responsible governance at all levels, able to devise and implement economic models appropriate to ecological realities and societal needs and support management of commons for regenerative purposes, including appropriate forms of solidarity economy.

7.4.6 Step Six: Transformative Social Innovation

The creation and establishment of post-growth alternatives based on revitalisation of ecologically and socially regenerative commons, their mobilisation as enterprise ecologies and the establishment of multi-level structures for inclusive governance towards these ends, all rely on processes of social innovation by individuals, organisations and networks dedicated to transformative change. Two major recent EU-funded research projects on social innovation have each released a key statement that stresses that importance and highlights the conditions necessary for social innovation's potential to contribute to transformative change in Europe.

The Transformative Social Innovation Manifesto was the result of a highly collaborative process involving input from researchers and participants in the EU-funded TRANSIT project during its closing stages in 2017. It sets out 13 principles, which collectively describe the necessary enabling conditions for innovation of the type and scale necessary to enable transformative change:[540]

1. Access to physical spaces for experimentation that offer freedom to think and act in unconventional ways

2. Alternative and diverse economies, united by common social and ecological values, critical attitudes towards capitalism and mainstream economies, and commitment to changing existing power relations

3. Combining and integrating new and old ways of thinking, including by recovering old ways and adapting them to current contexts by creatively combining them with innovative methods and technologies

4. Establishment of social relations based on relational values such as trust, reciprocity, equality, collectiveness, sharing, solidarity, inclusion and transparency, and development of the collective capacities to enable this

5. Recognition of the interdependence of social and material change, and need to combine social and technological innovation

6. New forms of collaboration of civil society, governments and business, recognising and supporting social innovation in all these sectors and creating new hybrids that blur their boundaries

7. Social innovation that complements and supports provision of essential public services, without legitimising their contraction or withdrawal

8. Translocal empowerment via effective networking at all levels among community-scale initiatives, providing an alternative form of bottom-up globalisation

9. Fostering belonging, autonomy and competence: fundamental human needs that enhance collective action and empowerment

10. Transparent and inclusive decision-making via methods such as deep and deliberate democracy or 'do-ocracy', systemic consensus, Sociocracy and Holocracy, all of which require shared ownership structures, cultures of open and transparent communication, and maturity, social competence and willingness to take responsibility and be self-reflective on the part of participating individuals

11. Alternative and diverse narratives that communicate and clarify complementary perspectives on why the world has to change, who has the power to bring this about and how it can be done

12. Higher levels of mutual recognition and strategic collaboration, including via meta-networks such as ECOLISE that provide spaces for encounter and reflection, including constructive confrontation and debate

13. Embracing paradoxes, particularly that between innovation and mainstreaming, in order to overcome social and political barriers, work intersectionally across diverse social struggles, and maintain flexible and dynamic strategies that reconcile wide acceptance and uptake of core values and practices with continued integrity of purpose

Building on the TSI Manifesto and a number of related documents, the Lisbon Declaration on Social Innovation was released in 2018 as an outcome of the EU-funded Social Innovation Community project.

The pillars of the Lisbon Declaration are three core shared values identified within the project as underpinning social innovation in Europe:[541]

- The purpose of innovation is to help improve quality of life for all and address societal challenges
- All innovation should be based on openness, democracy and inclusivity
- Social innovation to improve public services needs to complement, not replace, their adequate resourcing and delivery by governments

The Lisbon Declaration identifies five priority strategies for Europe to incorporate social innovation fully into its social programme:[542]

1. Resourcing small-scale experimentation, its spread and the scaling of impact
2. Enabling local change initiatives based on community-led innovation
3. Enabling policy-makers and government officials to support and take advantage of social innovation led by citizens and communities
4. Leveraging the potential of public procurement to support social innovation
5. Supporting establishment of social innovation in places that need it most

It argues for three central principles on which to base a policy agenda to support social innovation in Europe:

1. Acknowledge and cater for the diversity of the social innovation community
2. Move from award-based support to embedding social innovation within EU policies, programmes and principles across all areas, involving a broad spectrum of societal actors in doing so
3. Treat social innovation as a fundamental ingredient of the EU's social agenda at all levels, not an optional add-on

To support delivery on these priorities, in alignment with these principles, it suggests the following concrete policy measures.

Embed social innovation as a cross-cutting priority in EU policies and programmes through:

1. Development of a social innovation action plan
2. Strategic investment in and support for social innovation through major financial instruments within the EU Multiannual Financial Framework
3. Creation of a new European Observatory of Social Innovation Policy
4. Establishment of a pan-European network of evidence centres to improve the evidence base on social innovation

Enable strategic partnerships at all levels of governance (EU, national and regional) that empower communities to become drivers of needed change through:

5. Significant growth in the number of regional social innovation support organisations across Europe
6. Support instruments for creation of bodies to enable and leverage community ownership and control over local assets in all EU Member States
7. Creation of Social Innovation Fellowships for people developing local change initiatives

8. Improving access to EU funding for smaller organisations, enterprises and facilitators who have a social focus

Foster social innovation in the public sector through:

9. Embedding social innovation actors in governments and public-sector bodies

10. New mechanisms to connect government agencies with social innovation actors

7.4.7 Step Seven: Enabling Community-led Action

Creating the right conditions for transitioning to a sustainable Europe means putting in place appropriate legislation and enabling frameworks for community-led initiatives. As an essential first step, it requires removing legislative barriers and, where appropriate, introducing laws and regulations that recognise and address emerging needs. However, legislation alone will not achieve the desired goals if communities do not get the information and support needed to benefit from such opportunities. Awareness raising, technical assistance, accessible funding, and support for networking and exchange are also key elements of an enabling framework. To create appropriate enabling legislation and support provision, the roles of citizens and of community initiatives must be properly recognised and enabled. In turn, participation in policy development processes must be facilitated and, crucially, actively supported.

Many existing programmes could contribute to such an enabling framework. EU-wide local development programmes such as LEADER and Community-Led Local Development already provide support for CLIs primarily seeking to address economic or social issues. With some modest reprioritisation, these CLIs could be encouraged to better frame their projects in the context of a broader ecological transition, and support could also be extended to CLIs with a primary focus on such a transition.

Funding programmes need to address the issue of coercive isomorphism, and enable CLIs to deepen and extend their work without obliging them to operate in ways that limit their effectiveness or conflict with wider aims and core values. Potential mechanisms for achieving this could take various forms, including co-budgeting, participatory budgeting and self-management of allocated funding pots via existing methods for inclusive governance. Alternative and complementary currencies could be directly spent into circulation by public authorities at all levels as operational grants for groups working towards social, ecological and economic regeneration in their communities, directly resourcing this vital work and at the same time enabling structural change by helping establish currencies that are under community control and embed positive social and environmental values. Provision of universal basic income can help free people from reliance on demeaning, precarious and socially or ecologically damaging work, freeing them to dedicate their time and energy to matters of social value and recognised importance to their communities. Wider structural support could be offered to social and solidarity economy enterprises, in ways that buffer risks rather than creating dependencies, systematically addressing gaps in provision of necessary goods and services in order to build resilient local-regional economies rooted in ethics of care for people and nature.

8. Call to Contribute

This Status Report is part of ECOLISE's collaborative work which bridges between networks of local initiatives and institutions such as the European Economic and Social Committee. **Photo: EU 2018**

Understanding the nature, scope, potential and limitations of community-led action is vital if it is to play its full role in helping address urgent climate, sustainability, social and economic challenges. Accurate, comprehensive and up-to-date information is a key resource for community-led initiatives themselves, their coordinating networks, for supporters and advocates, and to inform development and implementation of relevant policy at all levels.

This report is a first, partial attempt to address that need for information. In addition to what it offers in its own right, it is intended to be a catalyst for a wider collaborative effort, involving practitioners, organisers, strategists, researchers, supporters, advocates, policy-makers and deliverers of policy. The aim of this wider effort is to co-create a dynamic and comprehensive repository of information as a shared resource to support practical and strategic action, policy development and implementation, and coordinated research effort towards identifying and addressing key knowledge gaps. What research and co-learning processes this will involve, what specific objectives it will meet, who will participate and how it will be resourced are all, as things stand, open questions. All readers of this report are invited to help address them.

Following release of this report, ECOLISE will coordinate an open, emergent process towards creation of its second edition. All readers are likely to notice areas that could be significantly improved: omissions addressed; documentation and analysis of key areas deepened; key projects, initiatives and studies included. Many will have expertise in these very areas that qualifies you well to offer these improvements; others will have needs for knowledge and information that you are not in a position to address directly, but which can help define the ideal scope of this work. If you wish to participate, in any capacity, in shaping and delivering future editions of this report, you are invited to join relevant activities listed on our website at www.ecolise.eu, and to get in touch by mailing research@ecolise.eu. We look forward to hearing from you, and collaborating towards creating a shared vision and bringing it into reality.

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STATUS Report 2019

ECOLISE, the European network for community-led initiatives on climate change and sustainability, is a coalition of 43 member organisations engaged in promoting and supporting local communities across Europe in their efforts to build pathways to a sustainable future.

Members of ECOLISE include international networks of community-led initiatives such as the Transition Network (representing over 1200 Transition initiatives), the Global Ecovillage Network (15,000 ecovillages) and the Permaculture movement (3 million practitioners globally); ICLEI, the association of local governments for sustainability; national and regional networks; and other specialist bodies engaged in European-level research, training and communications.

By bringing these organisations together, ECOLISE seeks to establish a common, Europe-wide agenda and a platform for collective action.

ECOLISE is registered as an international non-profit association under Belgian law (AISBL). The

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Ciências ULisboa Faculdade de Ciências da Universidade de Lisboa

The Schumacher Institute for sustainable systems

Permaculture Association

Transition Town Kinsale

21 Solutions

CEI IUL Centro de Estudos Internacionais Centre for International Studies ISCTE-Instituto Universitário de Lisboa

Transition Ireland & Northern Ireland

Transition Network.org

Transition Research Network.org

Scottish Communities Climate Action Network