Just transitions:
An annotated bibliography

Motu economic & public policy research

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Document information

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1   Introduction

This annotated bibliography was prepared by Motu researchers as part of a broader team producing "A guide to just transitions for communities in Aotearoa New Zealand." It includes resources compiled from August through November 2022.

Papers are grouped under six headings: (1) Conceptual and theoretical literature, (2) Methods, (3) Transitions management, guides and toolkits, (5) International case studies, (6) New Zealand case studies, and (7) Indigenous views.

While covering a range of papers, this review is not comprehensive. The summary material presented here is indicative and readers are encouraged to refer to the full papers for more complete information. This review is being shared in the spirit of supporting other researchers and practitioners working on these issues. It has not been edited to publication standards.

2   Conceptual and theoretical literature

This section has a diverse array of papers, mostly consisting of academic journal articles and book sections. One focus of the literature was developing frameworks for just transitions and understanding theories of just transitions. There was a strong emphasis on interconnectivity, as well as analysing transitions through a lens that considered the functioning of the entire system. Papers in this section focused on whole systems, but also specific areas within that system (e.g., food or energy systems). The outcomes of just transition thinking were often linked to pragmatic decision-making.

2.1   Abram, S., Atkins, E., Dietzel, A., Jenkins, K., Kiamba, L., Kirshner, J., Kreienkamp, J., Parkhill, K., Pegram, T., & Santos Ayllón, L. M. (2022). Just Transition: A whole-systems approach to decarbonisation. *Climate Policy*, *22*(8), 1033–1049. doi.org/10.1080/14693062.2022.2108365

Aim: The term 'just transitions' needs updating in order to develop its full conceptual power for the analysis and evaluation of the current energy transition. The article proposes that the term just transition be used as an analytical concept for an ongoing process of transition. This paper sets out a new conceptualisation of the term just transition and applies it to the Covid-19 response.

Context: Global focus. International case studies from the Covid-19 pandemic, especially the early lockdowns of 2020, are used as a case study.

Method: Literature review

Key messages:

o Just transitions should be approached from a whole-systems perspective. This approach should encompass four key dimensions of justice to direct policy design and assessment.

o This framework identifies '*Recognition, Distribution, Procedure and Restoration* as dimensions of justice that can be used to reveal where and how different approaches to policymaking in an emergency context might have led to better outcomes.'

o Using a framework which considers these dimensions of justice allows recognition of 'the different spatial, temporal, and institutional dimensions of multiple, simultaneous transitions.'

o They argue 'that the exploration of decarbonization actions through the lens of these four dimensions creates an increasingly pluralistic lens compatible with a whole-systems approach to the transition, which could bring about more sustainable outcomes.'

o Policy insights:

  o 'The transition to net-zero will be neither sustainable nor credible if it creates or worsens social inequalities; a backlash is likely if the transition is not perceived to be just.

  o Pathways forward may only emerge through observation, experimentation, and experience.

  o A range of policy tools exist to address just transition concerns. These include addressing social and environmental aspects of economic policy; making sure that interventions are adapted to local contexts; building democratic engagement platforms; and open and transparent communication.

  o Job creation does not guarantee just outcomes, as justice goes beyond employment conditions.'

2.2   Abson, D. J., Fischer, J., Leventon, J., Newig, J., Schomerus, T., Vilsmaier, U., von Wehrden, H., Abernethy, P., Ives, C. D., Jager, N. W., & Lang, D. J. (2017). Leverage points for sustainability transformation. *Ambio*, 46, 30–39. https://doi.org/10.1007/s13280-016-0800-y

Aim: The paper argues sustainability science has failed to engage with the root causes of unsustainability, focusing on weak leverage points. It then proposes less obvious, but potentially far more powerful areas for transformational sustainability interventions.

Context: Global/theoretical paper

Method: The paper draws from systems thinking and ideas by Donella Meadows. In an inspiring essay, Meadows (1999) proposed a hierarchy of intervention points for leveraging change. She argued that the transformational capacity of a given intervention would depend on the characteristics of the system that a given intervention acts upon—with some interventions likely to cause transformational change, while others may only induce minor changes. Meadows' leverage points can be aggregated into four broad types of system characteristics that interventions can target (from shallowest to deepest): parameters, feedbacks, design and intent (see Box 2 (Figure 1) below).

Figure 1: From twelve leverage points to four systems characteristics

Box 2 From twelve leverage points to four system characteristics
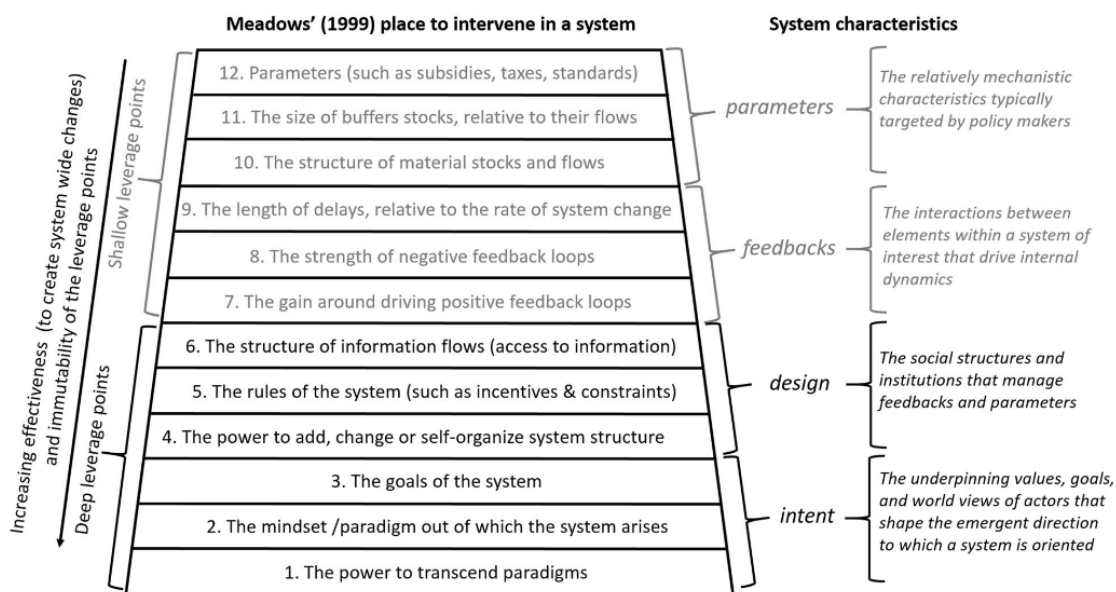
The four system characteristics represent a nested hierarchy of, tightly interacting, realms of leverage within which interventions in a given system of interest may be made. Deeper system characteristics constrain the types of interventions possible at shallower realms of leverage

Key messages:

Given the ongoing failure of humanity to leave behind unsustainable development trajectories, the question arises whether the most widely used interventions so far have targeted relatively ineffective leverage points. Three deep leverage points are identified: reconnecting people to nature, restructuring institutions, and rethinking how knowledge is created and used in pursuit of sustainability.

2.3   Bennett, N. J., Blythe, J., Cisneros-Montemayor, A. M., Singh, G. G., & Sumaila, U. R. (2019). Just transformations to sustainability. *Sustainability, 11*(14), 3881. doi.org/10.3390/su11143881

Aim: To provide a pragmatic framing of just transitions based on relevant literature. This framing offers 'practical and methodological guidance to help navigate just transformations in environmental management and sustainability policies and practice.'

Context: Theoretical and global with case studies of British Columbia and Canada.

Method: Review of literature on sustainability transformations, just transitions and social justice.

Key messages:

Social justice should be a central consideration when undertaking a sustainable transition. It is important to consider distributional, recognitional and procedural justice when beginning a sustainable transition. The diagram below (Figure 2) outlines these three dimensions of justice.

Figure 2: Key considerations and guidance for just transformation management
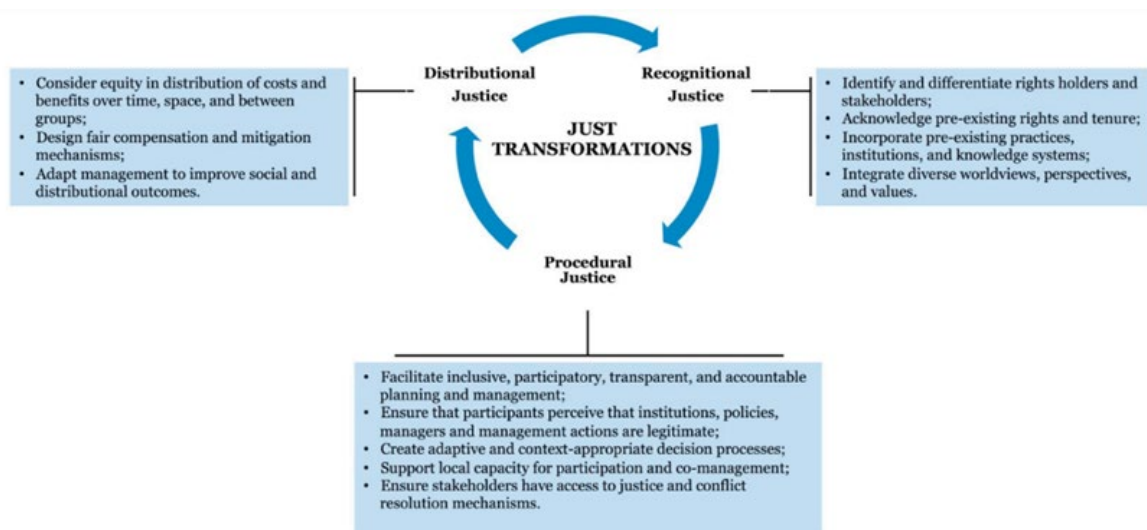
2.4   Chambers, R., & Conway, G. R. (1991). *Sustainable rural livelihoods: Practical concepts for the 21st century*. IDS Discussion Paper, 296. https://www.ids.ac.uk/download.php?file=files/Dp296.pdf.

Aim: To explore and elaborate the concept of sustainable livelihoods. It is based normatively on the ideas of capability, equity and sustainability.

Context and method: Conceptual/theoretical paper. It defines the concepts of capabilities, equity and sustainability, combining these ideas into the concept of sustainable livelihoods.

Key messages:

A livelihood is environmentally sustainable when it maintains or enhances the local or global assets on which livelihoods depend, and has beneficial effects on other livelihoods. A livelihood is socially sustainable if it can cope with and recover from stress and shocks and provide for future generations.

Reducing the vulnerability of livelihoods has two dimensions. The first is external, through public action to reduce external stress and shocks through, for example, flood prevention, disaster preparedness, and off-season public works to provide employment. The second is internal, through private action, in which a household replenishes its portfolio of assets and repertoire of responses to respond more effectively to changes.

The social sustainability of a livelihood also involves maintaining or enhancing capabilities for future generations. This can take place through the inheritance of assets and skills, or through children moving to other places or into other occupations. To enhance this form of sustainability, parents would invest in their children's education and the acquisition of skills beyond those available in the household.

Policy implications of the concept of sustainable livelihoods:

- Valuing future livelihoods. Contrary to current economic practice, intergenerational equity requires setting a higher value on future sustainable livelihoods than on present sustainable livelihoods. This is because pressure on livelihoods will likely be more intense in the future.

- For the richer, the priority is changing their lifestyle to make lower demands on the environment, so that more is left for the poor and for future generations. Progressive pricing and taxation policies can reduce environmental demand. Awareness campaigns and personal livelihood environmental balance sheets could also contribute to this goal.

- For the poorer, the priorities are to enhance their capabilities, improve equity and increase social sustainability (by restraining stress, minimising shocks and providing safety nets).

2.5 Corais, F., Bandeira, M., Silva, C., & Bragança, L. (2022). Between the unstoppable and the fFeasible: The lucid pragmatism of transition processes for sustainable urban mobility: A literature review. *Future Transportation, 2*(1), 86–114. doi.org/10.3390/futuretransp2010006

Aim: 'This article presents a literature review of Transition Experiments applied to the Sustainable Urban Mobility context from a critical and operative point of view.'

Method: Literature review.

Key messages:

o Transitions management focusses on establishing a systems change. One tool of transitions management is transitions experiments, which are 'disruptive actions, tested in a certain area of the territory considering the interaction with the main agents interested in these actions, and have as a main objective to accelerate in the short or medium term a change that represents the achievement of a long-term goal'.

o Reflections for Transition Experiments based on the literature:

   o 'Transition towards Sustainable Urban Mobility will not be achievable with traditional planning practices that are too technocratic and stuck with respect to the physical aspect, but must incorporate a socio–cultural transition.'

   o 'there is some inability to achieve the ambitious decarbonization targets through incremental planning methodologies. Transition Experiments are the most suitable tool for this purpose as they focus on learning through a reflective and innovative process and incorporate the socio–cultural component to the physical component.'

   o 'Transition Experiments are long-term innovation and social learning projects, implemented in transition arenas through the constitution of a transition team, composed of agents of change that promote the empowerment of the remaining agents and that define a change scenario employed in a continuous evaluation process.'

- o Design of Transition Experiments 'should, on the one hand, use design tools that contribute to the collective construction of a transition model and, on the other hand, incorporate in the project the consensus established in the continuous participation process.'

2.6   Crawford, I. (2021). *What makes a transition 'just?' A just transition analytic framework.* [Dissertation for a Master of Public Policy, Victoria University of Wellington]. School of Government.

Aim: To develop and test an analytical framework to identify how a given transition or transitions align with the concept of a just transition.

Context: Global

Method: Literature review

Key messages:

A framework for just transitions includes the following overarching principles:

- The aim is to restore the environment and move to a low-emissions economy.

- Long-term planning required to minimise disruption caused by the transition.

- Programmes tailored to suit the transition.

- Workers are supported in their transition to new work.

- New jobs are decent, green, and of equal or better quality than previous jobs.

- Equitable distribution of costs, protections and responsibilities.

- Transition programmes should address existing social and economic inequities.

- Meaningful citizen participation to support the process.

- Rights acknowledged in domestic and/or international law, including basic rights and the rights of indigenous peoples. This should be maintained throughout the process.

- Performance indicators are provided for each of these principles.

2.7   European Environment Agency. (2017). *Perspectives on transitions to sustainability* (Publication No. 25). https://www.eea.europa.eu/publications/perspectives-on-transitions-to-sustainability

Aim: Through this paper, the European Environment Agency seeks to develop its understanding of transitions and transformations. Interest in transitions arises from acknowledging that Europe's persistent environmental challenges are not about single issues, such as air pollution or nature protection. Instead, they are systemic, in the sense that they are tied in complex ways to prevailing economic, technological and social systems. The report compiles five exploratory papers from different research communities and actors. The papers address a mix of systems, scales and evidence about transitions. The first three papers are conceptual, and the second two are analytical:

- Transformations in socio-ecological systems

- Socio-technical transitions to sustainability

- Socio-economic transformations: insights for sustainability

- Action-oriented perspectives on transitions and system innovation

- Integrated assessment modelling approaches to analysing systemic change

Context: European Union

Method: The report draws from different strands of transitions scholarship: socio-ecological, socio-technical, socio-economic, political (or action-oriented perspectives), and modelling.

Key messages:

Each of the five papers provides a set of key messages.

Transformations in socio-ecological systems. There are three analytical approaches to transformations under this umbrella:

- Resilience. Socio-ecological systems are often characterised by cycles of disruption and reorganisation.

- Pathway approaches. Map out alternative strategies to meet visions and goals, acknowledging uncertainty and complexity, and exposing not only environmental impacts, but also themes such as equity, justice and sustainability.

- Spheres of transformation. There are three key domains for transformation in socio-ecological systems- the practical, political and personal.

Socio-ecological research is often place based, addressing human-nature interactions in local settings, examples include: the food-water-energy nexus, climate smart agriculture and permaculture at the local scale. In terms of governance, the focus of much socio-ecological analysis on local scales points to the need for 'polycentric' modes of governance.

Socio-technical transitions to sustainability. The paper explains the concept of socio-technical systems, as systems that perform the core functions for society (energy, mobility, nutrition, housing…), combining multiple elements such as technology, infrastructure, finance, regulations, cultural values, behaviour, or institutions. Methodologically, socio-technical research uses case study evidence, which makes it hard to extract universal rules applicable across different contexts.

The report presents in detail the multi-level perspective (MLP), which has emerged as the dominant analytical framework for understanding transitions within socio-technical research. The MLP explains the dynamics of transition processes as arising from the interplay of developments at three analytical levels: regime, niche and landscape.

According to the MLP, transitions involve the co-evolution of technological innovations and social behaviours, and emerge through interactions among multiple actors, including businesses, users, scientific communities, policymakers, social movements and interest groups. Transitions are long-term processes, typically spanning 40-50 years. Being evolutionary also means that they are open ended, non-linear, fundamentally uncertain, and based on searching, learning, trial and error, and experimentation. Surprises and unintended outcomes are likely. Such transitions depend critically on interpretations and social acceptance. They are also conflictual and deeply political, producing trade-offs, 'winners and losers', and related struggles, as politically influential and well-resourced incumbents often resist change.

Socio-economic transformations. The different perspectives under the socio-economic umbrella share a perception that capitalism, as the dominant socio-economic paradigm, is the key driver behind sustainability challenges including environmental degradation, hedonism, economic insecurity, social exclusion and the loss of social bonds. The paper describes the foundational work of Polanyi on societal transformations, that exposes the market's role in shaping human identity, values and behaviours, in particular, the "marketisation of society" that followed the industrial revolution.

Socio-economic transformations are defined as co-evolutionary processes that include changes in modes of production, work relations and culture. Technology, on its own, has aa limited role

to play in enabling transformations to sustainability. Social innovations changing values and lifestyles, through formal and informal institutions shaping behaviours, can enable transformations to alternative economic forms. A mix of bottom-up and state action are required to correct market failures. Some proposals include ecological fiscal reform, taxing resource consumption and pollution (rather than labour), as well as financial market reforms redirecting investment towards environmental and socially desirable activities.

Action oriented perspectives on transitions and system innovation. This paper provides a "bottom-up" framing of sustainability challenges, focusing on the role of three groups of actors that seek to influence transitions: community-based non-governmental organisations; city-level authorities; and trade unions. This approach is very relevant to implementing just transition processes.

At the community level, the author describes five organisations that link together community-level initiatives into networks, with the aim of achieving systemic and transformative change: the Transition Network, the Global Ecovillage Network, Community Power, the Open Food Network and The Food Assembly. There are many positive examples of community initiatives, but their limitations to achieve systemic change at the scale needed for global sustainability are also exposed.

Cities provide many examples of sustainability-oriented actions, through international networks such as The Global Covenant of Mayors for Energy and Climate Change, the Local Governments for Sustainability (ICLEI) or the C40 Cities Climate Leadership group.

Finally, trade unions have engaged with the transitions concept in Europe since the early-2000s, focusing on the social impacts of regime change. The concept of the 'just transition' was embraced by the European Trade Union Confederation in 2009 and featured in the Paris Agreement on Climate Change in 2016. It encompasses a focus on sustainable industrial policy, a robust social 'safety net' and wide-reaching labour adjustment programmes. However, alongside this 'reactive' position focused on minimising harms, there is also some evidence that trade unions are engaging more proactively with transition processes as unique opportunities to combine environmental, social and economic benefits.

Four broad activities appear frequently in the action-oriented domains reviewed:

- visioning, using scenarios, road-mapping and back-casting to identify potential routes from the present to a desired future, and to inspire and motivate action

- experimenting or 'learning by doing' in conditions of ambiguity — increasingly in the form of 'living laboratories' in urban settings

- networking, often via 'communities of practice' or the creation of a 'transitions arena'

- navigating (rather than controlling) complex processes of systemic change.

The strengths of the action-oriented approach include the emphasis on the agency and potential influence of non-state actors, which is seldom acknowledged sufficiently.

2.8   Hall, D. (2021). Consent in a changing climate. In *The Palgrave handbook of climate resilient societies* (pp. 1–24). Springer International Publishing. doi.org/10.1007/978-3-030-32811-5_114-1

Aim: This paper examines how the concept of consent interacts with projects that contribute to climate change, as well as projects that contribute to mitigation and adaptation efforts. The paper considers four different conceptions of consent, as well as when consent is bypassed.

Context: Theoretical

Method: Literature review.

Key messages:

- Where does consent fit into just transition discourse?

   o   Social coherence is important for building community resilience which in turn is important to enduring climate change. Mitigation efforts are essential for reducing the negative effects of climate change and therefore are important for building community resilience. However, 'the level of disruption that climate action requires is itself a risk to social cohesion and hence to resilience.'

   o   Maintaining social coherence, and therefore ensuring resilience, in the face of mitigation and adaptation efforts, requires forms of consent.

- The author defines the ideal of consent as 'a communicative act that creates in the consent-receiver a right to act and simultaneously creates in the consent-giver an indirect responsibility for the resultant action. Consent is only valid when certain conditions are fulfilled, such that consent is given competently, knowledgeably, voluntarily, and intentionally toward predetermined outcomes.'

- Four types of consent are discussed:

   o   the principle of free, prior and informed consent in international human rights

- o the government authorisation of permits and consents

- o the social license to operate for businesses

- o the procedures and mechanisms in democratic systems that give effect to the will of the people.

2.9   Healy, N., & Barry, J. (2017). Politicizing energy justice and energy system transitions: Fossil fuel divestment and a "just transition." *Energy Policy*, 108, 451–459. doi.org/10.1016/j.enpol.2017.06.014

Aim: The paper seeks to complement a growing body of energy justice literature which addresses energy supply chains, calls for 'whole energy system' approaches and political economy analysis of energy (in)justice. It looks at energy justice across entire lifecycles, from extraction to final use.

Context and method: It is a conceptual/theoretical paper. It uses political economy analysis and focusses on the fossil fuels divestment movement.

Key messages:

The paper provides interesting insights on civil action, labour and just transitions.

- Political action by civil society will be required to accelerate the phased ending of the fossil fuel era. New narratives are required, reframing fossil fuels as having now reached the point where their continued use is destructive, biophysically and ecologically unsustainable, perpetuates injustices, secrecy, lack of transparency and accountability— and propagates major geopolitical tensions. Divestment is thus a disruptive political and discursive intervention whose aim is to explicitly, democratically and deliberatively shift the current socio-energy regime to a new one.

- A just transition could require that the state intervene more actively in the political economy to create jobs in ''green'' sectors, in part to compensate for now-abandoned fossil-fuel-based sectors, and that state and capital (and those more able to pay higher associated taxes, for example) absorb carbon capitalism's negative social externalities, and provide a welfare safety net and adequate compensation for people and communities that have been marginalized or negatively impacted by a low carbon energy transition.

- Strong policies are required to support a just transition in fossil fuel dependent communities, otherwise they will inevitably resist rapid decarbonization.

- A managed and planned energy transition would put in place compensatory measures for displaced and unemployed workers and communities. Many of the divestment campaigns have a "divest to reinvest" element, which advocates using the funds invested in fossil fuel companies to reinvest in socially and environmentally beneficial projects, such as low carbon and renewable schemes or social housing.

- New jobs created in low-carbon sectors should provide decent working conditions, pay a living wage, and be accessible to people with a range of skills, while providing clear career progression opportunities. Job creation is clearly a poor proxy for a just transition—what matters more is the kinds of jobs, how secure they are, how long they last, and related forms of community resilience and innovation in the face of dynamic energy markets. An example here is Germany, which, when it dramatically reduced the burning of coal to generate electricity in the 1990s, used widespread programs to retrain coal industry workers to find new jobs, sometimes in renewable energy.

- A just transition approach would need to be strengthened by restorative justice perspectives. These assess how injustice caused by an energy activity or transition would have to be rectified.

2.10   Heffron, R. J., & McCauley, D. (2018). What is the 'Just Transition'? *Geoforum*, 88, 74–77. doi.org/10.1016/j.geoforum.2017.11.016j

Aim: To provide a united "just transitions" concept by merging the different definitions of justice provided by literature on climate justice, energy justice and environmental justice (CEE).

Context: Global, theoretical.

Method: Critical review of the transition literature. The paper uses the lens of the emerging field of "legal geography", which captures research on people, space, time, and law.

Key messages:

The article argues that the concept of 'just transitions' should be more inclusive. The table below (Figure 3) outlines the proposed framework.

Figure 3: The "JUST" framework

J	T R A N S I T I O N	Justice	Justice takes the form of 3 forms of justice
			Distributional
			Procedural
			Restorative
U		Universal	Universal takes the form of two universal forms of justice
			Recognition
			Cosmopolitanism
S		Space	Space brings in location, where are 'events' happening ? (in principle, at local, national and international levels)
T		Time	Time brings into transition timelines such 2030, 2050, 2080 etc. and also 'speed' of the energy transition (i.e. is it happening fast enough?).

2.11   Henry, M., Bazilian, M., & Markuson, C. (2020). Just transitions: Histories and futures in a post-COVID world. *Energy Research & Social Science*, 68(101668). www.ncbi.nlm.nih.gov/pmc/articles/PMC7351418/

Aim: This article provides an overview of the history and current status of just transitions. The article considers the roots of just transitions, as well as the existing institutions, processes and policy initiatives that support implementation of just transitions.

Context: Focus largely on the US, Europe, and international organisations.

Method: Literature review.

Key messages:

Challenges for implementing just transitions:

- o Shifting and contingent dynamics of energy transitions across the disparate geographical, political, and economic localities.

- o No universally agreed upon definition or framework.

- o Achieving alignment between the more pragmatic solutionism of the labour movement's approach to just transitions and the more holistic and participatory focussed approach taken by environmental organizations.

- o Important steps going forward:

    - o Documenting processes, policies, and outcomes within and across organizations that have adopted just transition principles

    - o Coalition building and information sharing

- o Covid-19 has disrupted progress in transitioning to clean energy; however this disruption presents opportunities to incorporate transition measures into other Covid-19 recovery measures.

- o Because just transition frameworks emerged out of diverse organisational coalitions and have evolved over the last few decades to respond to shifting social, environmental, and energy realities, they remain essential for supporting a shift to a low-carbon energy system that prioritises sustainability alongside social and economic equity.

2.12   Loorbach, D., Frantzeskaki, N., & Avelino, F. (2017). Sustainability Transitions Research: Transforming Science and Practice for Societal Change. *Annual Review of Environment and Resources*, 42(1), 599–626. doi.org/10.1146/annurev-environ-102014-021340

Aim: The article describes the field of sustainability transitions research, which emerged in the past two decades in the context of a growing scientific and public interest in large-scale societal transformation toward sustainability.

Context and method: It is a conceptual/theoretical paper. It describes how different scientific approaches and methodological positions explore diverse types of transitions and provide the basis for multiple theories and models for governance of sustainability transitions.

Key messages:

Transitions can be defined as large-scale disruptive changes in societal systems that emerge over long timeframes. Transitions in their literal sense refer to "the process of change from one state to another". In transitions research, the term refers to "the process of change from one system state to another via a period of nonlinear disruptive change."

The article distinguishes three perspectives in studying transitions: socio-technical, socio-institutional, and socio-ecological. Although the field is very heterogeneous, commonalities can be characterised in notions such as path dependencies, regimes, niches, experiments, and governance. We list a number of commonalities below:

- Multi-Actor Dynamics. Transitions are polycentric and multi-dimensional. Some actors are more related to the regime, while others are more related to niches, and power asymmetries and conflict can emerge.

- Reframing the problem. Societal consensus around problems influences where investments and actions are directed. An important element in transition governance is

therefore the support and development of shared and deeper insight and the need for systemic change. Going through such processes in a participatory way stimulates development of a (new) shared discourse.

- Importance of visioning. Visioning alternative system futures, scenario-building, and back-casting are important tools in transition governance to facilitate and empower actors and networks, so that they can more strategically work on transitions, explore more radical innovation trajectories, and formulate alternative goals and agendas. The role of visions in transition governance is thus mainly to motivate, coordinate, and empower actions in the short- and medium- term.

- Importance of experimenting. As transitions are complex and unstructured processes of change, a process of learning-by-doing and doing-by-learning is the only way to adapt, change, and transform existing dominant cultures, structures, and practices.

- Importance of learning and evaluating. Systematic transition monitoring and evaluation can help reflect on how deliberate actions interact with broader societal transition dynamics and vice versa.

2.13   McCauley, D., & Heffron, R. (2018). Just transition: Integrating climate, energy and environmental justice. *Energy Policy*, 119, 1–7. doi.org/10.1016/j.enpol.2018.04.014

Aim: To introduce the idea of just transitions as an interdisciplinary approach in exploring distributional, procedural, and restorative justice. They argue that the concept of just transition could have the potential for uniting climate, energy and environmental justice. The idea of just transitions can provide a more comprehensive framework for analysing and ultimately promoting fairness and equity throughout the transition away from fossil fuels.

Context: Theoretical

Method: Literature review

Key messages:

o   'A reframing of the just transition concept beyond its original strategic purpose can unite climate, energy and environmental justice scholarships.

o   The reframing process of just transition should involve a comprehensive approach to distributional and procedural justice.

- Restorative justice is particularly important as there are cases where procedural justice does not "far enough in ensuring that perpetrators are brought to justice and affected individuals find solace".

- Existing scholarship in these areas have established a detailed understanding of the key justice-based considerations to be considered when reflecting on where injustices take place and how we should attempt to solve them.

2.14 Newell, P., & Simms, A. (2021). How did we do that? Histories and political economies of rapid and just transitions. *New Political Economy*, *26*(6), 907–922. doi.org/10.1080/13563467.2020.1810216

Aim: 'This paper develops an account of the politics and prospects of deeper transitions towards sustainability based on a reading of previous socio-technical transitions. This paper seeks to provide a basis for understanding as well as engaging with the scope for accelerated transitions within and beyond capitalism.'

Context: Global case studies. They use nationally based examples rather than descriptions of global shifts.

Method: Literature review and a series of public workshops reflecting on the themes drawn from the literature.

Key messages:

- Effective transitions require actions and shifts in terms of governing, financing, mobilising, and culture.

- Financing transitions:

  - History shows that 'availability of capital does not appear to be a major obstacle to funding the energy technology revolution'.

  - Argument that finance has historically, and can again, set the trajectory away from fossil fuels towards green options (for example, disinvestment in major companies).

- Mobilising and culturing transitions:

  - 'Momentous disruptions from state and corporate actors around policy, financing or the development of new technologies are often prefigured by years of

campaigning, resistance and building alternatives from below which create pressure for elite actors to act.

- o Changing technologies are also amplifying the impact of mobilisation

- o Norms, values, belief systems towards institutions, behaviour, and ideologies play an important role in pathways to sustainability and unsustainability. These, alongside everyday practices and habits which eschew or reinforce dominant ways of producing and consuming resources.

- o When they choose to do so, states can play a proactive role in dramatically and rapidly shifting cultural practices.

- o While people may have been willing to make temporary sacrifices for a war effort, they may be less willing to reduce consumption permanently in order to tackle climate change.'

- o Reflections on rapid transitions:

  - o Balancing speed with large-scale change is a major challenge.

  - o The lack of relevant historical precedents for transitions driven by environmental imperatives also presents a major challenge.

  - o Caution is required; invoking urgency as a criterion for transitions could result in unintended political consequences.

2.15   Scoones, I., Leach, M., & Newel, P. (2015). *The Politics of Green Transformations*. London: Routledge.

Aim: This book analyses green transformations from the lens of politics and power. Politics and power play an important role in shaping pathways, determining which pathways win and why, and who benefits from them.

Context: The book covers a range of sectors and issues from energy, food, natural resources, transport, urban infrastructure, and finance in a diversity of settings from Denmark to China.

Method: Authors take insights from disciplines such as anthropology, development studies, ecology, economics, geography, history, international relations, political science, science and technology studies and sociology.

Key messages:

There are four broad narratives of green transitions or transformation: technocentric transformations, marketized transformations, state-led transformations, and citizen-led transformations. Each of these broad narratives reflects a different framing of problems and solutions. Moreover, these narratives reflect different versions of sustainability, and embody a different perspective on what needs to be transformed. They also reflect different understandings, prejudices and theories of change, informing how, when and why transformation is possible. The table below (Figure 4) shows the diagnoses and solutions proposed by each of these narratives.

Figure 4: Diagnoses and solutions proposed by each of the green transitions or transformation narratives

Diagnosis	*Solutions*
Technocentric ● We are about to or have already exceeded planetary limits. We are in crisis and there is urgency. ● Role of technology as magic bullet ● Emphasis on population and scarcity	● Technologies as global public goods to tackle environmental crisis ● Low carbon transitions: new energy technologies ● Including technical fixes, from geoengineering to genetically modified crops, but also bottom-up, grassroots innovation ● Top-down governance arrangements in favour of the planet
Market-led ● Crisis results from market failures and externalities ● Primacy of green growth ● Corporations as agents of change	● Technological entrepreneurs, green capitalists and consumers to lead ● Prices will reflect scarcity of resources and demand to protect them and reward ecosystem service providers ● Need to allocate and enforce property rights and use institutions to this end ● Economic investments and market incentives to achieve green growth and a green economy
State-led ● Need for state involvement in steering transformation and re-embedding markets ● State-backed R&D and wider finance central to a developmental state ● Crisis of governance at national and global levels, importance of institutions, agreements, international architectures	● At the national level, need for a green state, adopting green Keynesian industrial policies of stimulus, infrastructural projects, creating green jobs. ● At the international level, modifying and reforming existing institutions or creating new ones ● Strengthening global architectures
Citizen-led ● Change comes from below, cumulative actions of multiple, networked initiatives ● Linking niches, experiments and demonstrations through movements ● Behaviour change, advocacy and demonstrating alternatives is central: "another world is possible", hope	● Power from below, involving connected social movements (i.e. green consumers, green living/transition towns, food, water, energy-sovereignty movements) ● Radical system change required ● Bio-communities, self-sufficiency, dematerialisation, de-growth

2.16   Söderholm, P. (2020). The green economy transition: The challenges of technological change for sustainability. *Sustainable Earth*, 3(1), 6. doi.org/10.1186/s42055-020-00029-y

Aim: This paper focuses on the concept of the "green economy", which is different, but related to that of a just transition. The required transformation towards sustainable modes of production and consumption requires sustainable technological change, so that production and consumption patterns respect the natural environment. The overall objective of the paper is to discuss the challenges encountered when pursuing sustainable technological change, which is a significant component of a green economy.

Context and method: Conceptual/theoretical paper

Key messages:

The main challenges when pursuing sustainable technological change are:

- dealing with diffuse – and ever more global – environmental risks;

- achieving radical and not just incremental sustainable technological change;

- green capitalism and the uncertain business-as-usual scenario;

- the role of the state and designing appropriate policy mixes; and

- dealing with distributional concerns and impacts.

The last of these challenges is intrinsically related to the concept of a just transition.

Some further messages include:

o Societal changes involve winners and losers, and unless this is recognised and dealt with, the sought-after green transition may lack in legitimacy across various key groups in society.

o Several dimensions of distributional impacts need to be considered, such as:

o Impacts on households with different income levels. Evidence shows that environmental policies in developed countries, such as pollution and resource use taxes, tend to have regressive effects. Such outcomes may in fact prevail also in the presence of policies that build on direct support to certain technological pathways. For instance, high-income households are likely to benefit the most from subsidies to solar cells and electric cars

- o Impacts on the labour market, i.e. how wages and work conditions change in legacy versus green industries.

- o Regional impacts. Green technology may fail to generate the substantial positive income and employment that communities expect. This is because renewable energy technologies are highly capital (vs labour) intensive, and once built they can often be monitored remotely with the use of information technology.

2.17   Tribaldos, T., & Kortetmäki, T. (2022). Just transition principles and criteria for food systems and beyond. *Environmental Innovation and Societal Transitions*, 43, 244–256. doi.org/10.1016/j.eist.2022.04.005

Aim: This article establishes a conceptual framework for clarifying justice in a food system low-carbon transition. This article introduces principles and criteria as a guiding framework for the conceptualisation, which can be applied to transitions in other sectors.

Method: Literature review; interdisciplinary discussions; working out a structural hierarchy of different justice concepts (the general principles of justice, just transition related principles of justice, and food system specific criteria for just transition); philosophically testing these concepts and criteria in order to justify the framework; testing the criteria against the findings from two workshops where stakeholders discussed food transitions

Key messages:

The key principles from this process are outlined in the table below (Figure 5):

Figure 5: Principles for just low-carbon transition and criteria for just transition in food systems

Table 1
Principles for just low-carbon transition and criteria for just transition in food systems.

Dimension of justice (A-level)	Principle (B-level)	Criterion for just transition: process- / policy-pathway evaluation level
Distributive justice	Right to vital goods (incl. right to food)	The access of the whole population to sufficient nutritious, adequate, and safe food at all times is protected. The resilience of food supply chains towards shocks is increased.
	Labor justice (incl. farmers and fishers)	The established or supported food jobs have fair payment and working conditions.
	Just food-chain structures	Farmer resilience towards shocks is retained or improved. Established food chain relations are reciprocally agreeable.
	Livelihood opportunities	The viability of farming is retained or improved. The access to suitable farmland is protected. Multiple opportunities for livelihoods in rural areas are retained or designing them is supported. Transition demands are designed in a way that different-sized food system actors are able to respond to them.
Cosmopolitan justice	Global fairness	Decarbonizing activities do not cause food insecurity elsewhere in the world. Decarbonizing activities respect the participatory control over and access to productive resources elsewhere in the world. Decarbonizing activities do not undermine fair livelihood opportunities for distant actors.
	Intergenerational justice	Transitions towards decarbonization do not undermine the opportunities of future generations to achieve well-being.
Ecology and non-human beings	Ecological integrity	Ecosystem health is improved. Biodiversity is protected or increased. Soil, water, and air health/quality is retained or improved. Natural (biotic and abiotic) resource use stays within planetary boundaries.
	Justice for animals	The inherent value of animals is respected, and they are treated respectfully.
Procedural justice	Just processes	Decision-making processes are sufficiently transparent, inclusive, and provide a fair opportunity for different voices to be heard. Decision-making does not create or intensify power disparities.
	Access to relevant information	Reliable information about the impacts of food systems and different diets on humans and nature is available to all in decision-making and climate action.
Recognition justice	Respectful pluralism and esteem recognition	Traditional, indigenous, and local knowledge is respected and given a voice. Diverse visions of producing, preparing, and eating food are respected. Climate actions in different food professions and by both genders are equally recognized and esteemed.
	Non-discrimination	People are not discriminated on ethnic-, gender-, age-related, or other grounds.
Capacities	Capacity building	Supported innovations are made available to interested actors, especially least-advantaged groups. Developing individuals' skills for transition activities is supported. Capacity building to engage people in collective action for transitions is supported.

2.18   White, D., & Leining, C. (2021). Developing a policy framework with indicators for a 'just transition' in Aotearoa New Zealand. *Policy Quarterly, 17*(3), Article 3. doi.org/10.26686/pq.v17i3.7125

Aim: 'This article examines the concept of a 'just transition' for climate change and explores **three** tools for improving policy: (1) inclusive, informed, and iterative processes for decision making; (2) an assessment framework for social resilience to change, and; (3) progress indicators.'

Context: Aotearoa New Zealand

Method: Literature review focussing on literature about just transitions and about the social impacts of low emissions policies.

Key messages:

o   Justice has many dimensions, and ensuring a just transition requires an understanding of social justice and history. One conceptualisation of just transitions concludes:

o   justice takes three forms (distributional justice, procedural justice and restorative justice);

- o a 'just transition' should be universal in recognition; and

- o clear definitions of space and time are vital for a successful 'just transition.'

o Aotearoa needs improved decision-making procedures in order to produce policy that effectively incorporates principles of just transitions. Suggestions to strengthen decision making include:

- o adding an explicit process for 'collaboration and partnership' and 'monitoring and review'

- o integrating 'distributional impacts assessment' into policy design.

- o It is important to identify who may be vulnerable to a given policy change. Identifiers for determining resilience could include:

- o a group's sensitivity to risk (e.g., from policy impacts)

- o its exposure to those risks

- o its adaptive capacity

o Effectiveness of monitoring depends on the indicators used to track progress. The authors recommend a combination of two existing frameworks:

- o The Living Standards Framework (which can measure broad wellbeing outcomes)

- o He Ara Waiora (which is based on te ao Māori and takes into consideration ends and means to determine wellbeing through a Māori lens).

2.19   Winkler, H. (2020). Towards a theory of just transition: A neo-Gramscian understanding of how to shift development pathways to zero poverty and zero carbon. *Energy Research & Social Science*, 70. https://doi.org/10.1016/j.erss.2020.101789.

Aim: To theorise how a just transition can be achieved, using a neo-Gramscian approach based on politics of transitions.

Context: Global/theoretical.

Method: Review of theoretical literature of transitions.

Key messages:

The four core elements of the proposed theory of just transitions are listed below:

o **Ideology**. A system of ideas that bring and hold together an alliance.

o **Hegemony**. It is power by persuasion. An ideology helps to achieve hegemony. The current cultural hegemony around growth has led to multiple contradictions.

o **Fundamental conditions**. These are created by past development and include the dependence on fossil fuels for economic growth and persistent inequality. Some fundamental conditions, like income and assets inequality, are material, while others are immaterial, such as values and needs, identities, knowledge and understanding, power and culture.

o **Change agents**. They are social forces that bring about change. They can come from civil society, unions, business or government. A coalition of change agents can transform the current fundamental conditions.

The neo-Gramscian theory of just transitions postulates that an alliance of change agents coalesces around an ideological element – the just transition – and gains support of others, establishing a new hegemony, and is able to transform these fundamental conditions, shifting development pathways to achieve zero poverty and zero carbon. Building an alliance requires political, cultural, socio-economic, moral transformational collective leadership by an alliance. However, to change the fundamental conditions, an alliance of change agents is not enough; broader support from other actors is also required. Moreover, the alliance needs to establish cultural hegemony through persuasion.

Figure 6: Core elements of a neo-Gramscian theory of just transitions

IDEOLOGY
- Vision
- Values
- Mind-sets
- Narratives

1. Alliance of change agents coalesces around ideological elements
2. Gains support of other actors
3. Transforms fundamental conditions

CHANGE AGENTS
- Social movements & NGOs
- Transnational corporations
- Cities
- Firms
- Intergovernmental organisations
- States
- Organised labour

FUNDAMENTAL CONDITIONS
Unequal fragmenting world, multiple contradictions

High inequality, persistent poverty	Conflicts over natural resources – land/food, air, energy, water, biodiversity	Fossil fuel energy systems – dominant	Emerging energy – renewable, storage decentralised	Agricultural industries	Biotechnology	(Im)migration	Contradictory narratives	Contestation over identities – race, gender, religion, sexual orientation	Data divides – digital divide, fake news, censorship, artificial intelligence	Etc

3   Methods

The methodological literature for enabling social and environmental change is rich and diverse. In the last decades, participatory methods have proliferated, in the belief that communities themselves know better what they want and need and how to get there. The role of participatory methods is therefore to catalyse this pre-existing knowledge, facilitating all the voices to be heard, especially those that are typically marginalised.

Our bibliography is in no way comprehensive. It provides only a snapshot of the multiple methods and tools, leaving many unexplored. We classify the literature in four groups. First, we present sources that offer a portfolio of methods, tools and case studies, which can be applicable at every stage of a just transition. Second, we review a sample of sources focusing on defining future visions, pathways and choices. Depending on their background, different authors approach these tasks from different angles from engineering (Krumdieck, 2017) to politics (STEPS Centre). Multicriteria analysis and backcasting feature strongly among the tools for visioning and making choices, and both have evolved from expert-led to community-led or participatory in nature. Another subsection deals with methods and tools for community engagement and procedural justice when developing new infrastructure for energy transitions. The final subsection groups other diverse tools, some of them improve understanding of the complex systems needing transformation, for example participatory mapping for modelling system dynamics of sea level rise, flooding and their effects on health and wellbeing (Harrison et al., 2022), or net-mapping for understanding power and influence dynamics in the systems to be transformed (Schiffer & Waale, 2008). Other tools refer to care (McKercher, 2020), decision making (Seeds for Change, 2020) and collaborative spaces (Schipper et al., 2022) in co-design processes.

3.1   Compilations of methods and tools for participatory research and practice applicable to sustainability

3.1.1   Allen, W. (2023, June 22). *Learning for Sustainability—Supporting engagement, co-design and adaptation [Knowledge Hub].* Learning for Sustainability. https://learningforsustainability.net/

Aim: Learning for sustainability is a website that provides a comprehensive knowledge hub highlighting the wide range of skills and processes that are needed to support the constructive collaboration and joined-up action required for addressing complex issues. The site brings a wide range of annotated on-line resources from different sectors and geographic areas together in one easy to access place.

Context: The site framework has been developed through the course of the work of Will Allen, an independent systems scientist, action researcher and evaluator based in New Zealand. His work looks to support policy and management initiatives that are outcome focused – and involve constructive engagement, co-design, adaptation and reflective practice.

Method: The main methodological contents of the website are:

- Social learning. Refers to learning processes among a group of people who seek to improve a common situation and take action collectively. It is useful to think of five main strands that support the process: systems thinking, building networks, supporting deliberation and dialogue, knowledge management, reflective and reflexive practice.

- Planning, monitoring and evaluation (PM&E). This forms a natural structure for social learning. They need to be linked together, and when seen in this way can naturally underpin a collaborative and outcome-oriented approach to management. Contents in this topic include: theory of change, logic modelling, selecting evaluation questions and types, rubrics, complexity-aware PM&E, and developing indicators.

- Collaboration/engagement. Some relevant topics include: stakeholder mapping and analysis, designing collaborative processes, cross-sector partnerships, managing participation, risk communication and engagement, social license to operate.

- Supporting change. The basic principles underpinning successful change are universal and there are a wide range of guides developed in many different contexts that can help us. This section includes resources on: systemic co-design, adaptive management, behaviour change, guides to help initiate and manage multi-stakeholder processes and co-innovation systems.

- Social research. Participatory action research that operates within the area of practice, and works with the different stakeholders and partners involved, can accelerate learning and actions that lead to the wider system transformations that we want. Contents include: indigenous lenses, participatory action research, and ethics.

- Practical tools: facilitation tools and techniques, managing virtual teams, guides to managing virtual meetings.

The website also includes a blog showing how the different approaches are used in practice.

3.1.2   Allen, W., Kilvington, M., & Horn, C. (2002). *Using participatory and learning-based approaches for environmental management to help achieve constructive behaviour change* (Contract Report LC0102/057). Landcare Research. https://www.landcareresearch.co.nz/uploads/public/researchpubs/mfe_0102-057.pdf

Aim: The report aims to inform the Ministry for the Environment (MfE) on ways to influence people's behaviour to improve environmental management. In particular, MfE was interested in new approaches to improve motivation, information flows and collaborative learning in multi-stakeholder groups.

Context: Report prepared for MfE in New Zealand

Method: The report is based on literature reviews and experience gained by Landcare Research in participatory learning. Some of the tasks undertaken include:

- Review contemporary approaches to environmental policy making.

- Review frameworks for supporting behaviour change.

- Outline the key concepts for managing participation in practice.

- Describe techniques for building group capacity for environmental change.

Key messages:

- When people feel that they have had the opportunity to participate in planning future change, they are likely to buy into the changes that may be required of them.

- Policy success depends on many factors, and particularly on the cooperation of different groups of society. The multiple mechanisms available for policy making (regulatory, incentives, voluntary, property rights) need to be used, with a supporting framework of education, awareness and ownership.

- Participation is not a one-off event; it is an ongoing process. It takes time, resources, understanding and perseverance. It should be practised at multiple levels of decision making: national, institutional, and on the ground.

- Important to give attention to both task and process. Tasks tend to focus on outcomes (e.g. reduce waste) whereas the process is concerned with how people and groups/teams work together, maintain relationships, and achieve agreed outcomes.

- Transformational change requires changes in group culture that extend to other groups.

- Monitoring and evaluative processes that are both participatory and systems based are required for ongoing learning, correction, and adjustment.

3.1.3 Brouwer, H., Woodhill, J., Hemmati, M., Verhoosel, K., & van Vugt, S. (2016). *The MSP guide: How to design and facilitate multi-stakeholder partnerships*. https://doi.org/10.3362/9781780446691

Aim: To provide a practical framework for the design and facilitation of multi-stakeholder partnerships (MSPs) that work across the boundaries of business, government, civil society and science.

Context: This report draws on the direct experience of staff from the Wageningen Centre of Development Innovation (WCDI) at Wageningen University & Research.

Method: The guide draws from participatory research methods. It links the underlying rationale for multistakeholder partnerships, with a clear four phase process model, a set of seven core principles, key ideas for facilitation and 60 participatory tools for analysis, planning and decision making.

Key messages:

The guide is a rich source of ideas, principles and tools to design and facilitate multi-stakeholder partnerships for just transitions, or any other relevant purpose. It shows examples of how to structure MSP processes from a short 3-day period to over a year long. It proposes 7 principles (Figure 7 below) for implementing effective MSPs and describes 60 tools for different stages of the MSP process (Figure 8 below). The final section provides perspectives from civil society, business, public sector, science and the agriculture sector.

Figure 7: Principles that make MSP successful

PRINCIPLE 1

Embrace systemic change

1. Assessing the complexity of a situation
2. Soft systems methodology
3. Adaptive management
4. Four quadrants of change

PRINCIPLE 2

Transform institutions

1. Supporting and obstructing institutions
2. Systems thinking
3. Framework for institutional analysis
4. Linking institutional change

PRINCIPLE 3

Work with power

1. Types of power
2. Rank
3. Expressions of power
4. Faces of power
5. Empowerment

PRINCIPLE 4

Deal with conflict

1. Causes of conflict
2. Continuum of conflict
3. Interest based negotiation

PRINCIPLE 5

Communicate effectively

1. Dialogue
2. Non-violent communication
3. Powerful questions and active listening
4. Cultural issues and communication

PRINCIPLE 6

Promote collaborative leadership

1. Six aspects of leadership
2. Belbin Team Roles
3. Balancing results and relationships

PRINCIPLE 7

Foster participatory learning

1. Experiential learning cycle
2. Learning styles
3. Single, double, triple loop learning

Figure 8: Tools for facilitation of MSP

CONNECTION

1 Introductions
2 Human Spectrogram
3 Rich Picture
4 Semi-structured Interviews
5 Stakeholder Identification
6 Appreciative Story Telling
7 Questionnaires; Surveys
8 Problem Definition
   Worksheet
9 Ground Rules

CO-CREATION

34 Tuckman
35 Belbin Team Roles
36 Scenario Planning
37 Conflict Styles
38 Partnering Agreements
39 Open Space
40 Document and
   Summarise
41 Visioning
42 Circle of Coherence

SHARED LANGUAGE

10 Stakeholder Characteris-
   tics and Roles Matrix
11 NetMapping
12 Stakeholder Analysis
13 World Café
14 Problem Tree
15 Timeline
16 Force Field Analysis
17 In Context Immersions
18 SWOT Analysis
19 Delphi
20 Visual Reminders
21 Cynefin Framework
22 Friends and Strangers
23 Trendline
24 Four Quadrants of Change

CONVERGENCE

43 Prototyping
44 Prioritising and Ranking
45 Comparing Proposals
46 Feedback from
   Stakeholders
47 Ritual Dissent
48 Card Clustering
49 Socratic Dialogue
50 A Change of Scene
51 Silence

DIVERGENCE

25 Adjust Group Size
26 Role Plays
27 Forms of Power
28 Six Thinking Hats
29 Multiple Perspectives
30 Power Ranking
31 Guided Fantasy
32 Five Colours of Change
33 Combining Ideas That
   Might Work Together

COMMITMENT

52 Set Decision Rules
53 Make a Visual Theory
   of Change
54 Polls
55 Fish Bowl
56 Reflection
57 Synthesis
58 Option One-and-a-Half
59 Closing Circle
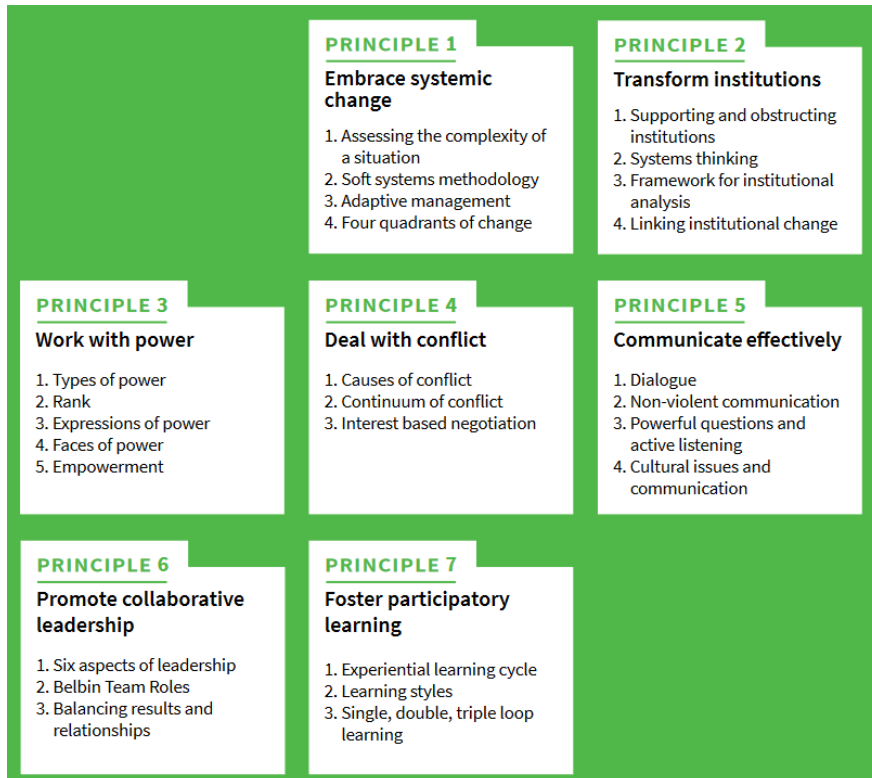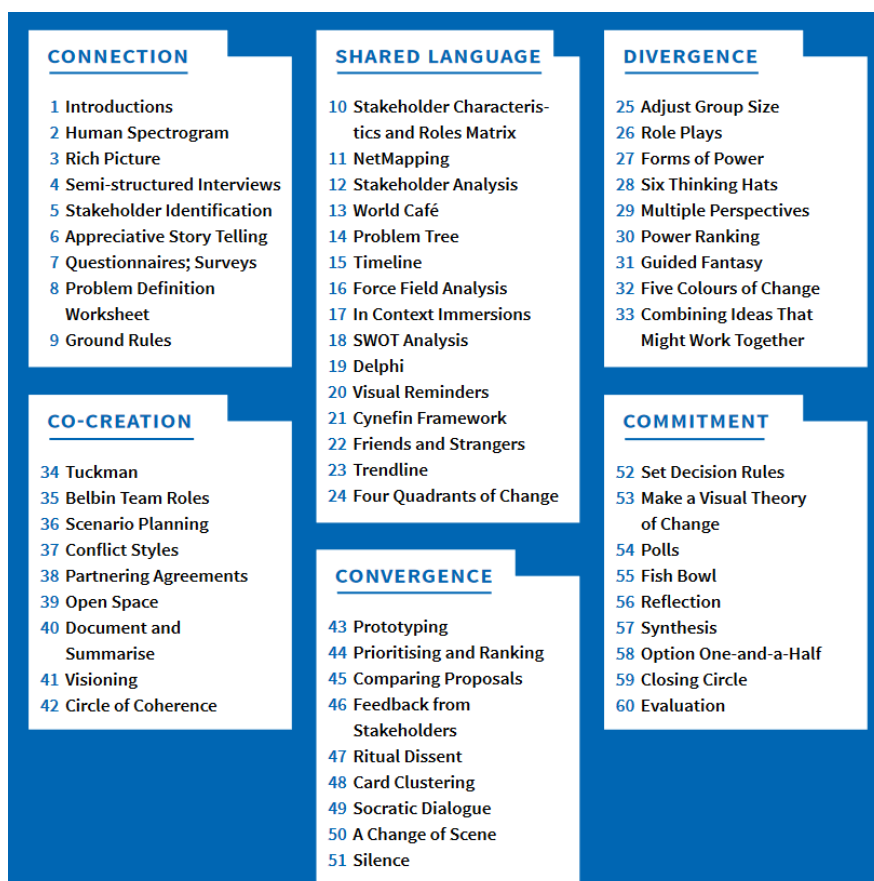60 Evaluation

3.1.4 Chambers, R. (2017). Can we know better? Reflections for development. Chapter 5: *Power, participation, and knowledge: knowing better together*. Practical Action Publishing. https://doi.org/10.3362/9781780449449

Aim: The chapter reviews the nature, relevance, and potential of participatory methodologies (PMs) for the 21st century and presents evidence that PMs can bridge paradigmatic binaries by generating inclusively rigorous findings, arguing that PMs provide a means of navigating an increasingly unpredictable and rapidly evolving world. The chapter argues that PMs have an almost unlimited potential for knowing better together, and that in most cases they are 'win–win' because they bring gains in quality of data and insights while at the same time empowering those who generate them.

Methods:

- Participatory methodologies

- Participatory Information and Communication Technology (ICTs)

- Participatory statistics

- Reality check

Participatory methodologies can be defined as combinations of approaches and methods through which people are facilitated to do things themselves. In the context of knowing, what they do may include appraisal, research, analysis, planning, action, monitoring, evaluation, facilitation, convening, or organizing. Methodologies are systems of approaches and methods, while methods are distinct ways of doing things (though the boundary between the two can be fuzzy). PMs in this definition overlap with, and share values and interact with, other traditions such as action research, action learning, and systemic action research.

The chapter describes the proliferation of participatory methodologies from the 1990s to more recent times, though does not provide an exhaustive list of methodologies. The chapter then focuses on: participatory ICTs, participatory statistics, and the Reality check approach.

Examples of **participatory ICTs** include participatory community radio, participatory video, participatory GIS and GPS, photo voice, and digital storytelling. Applications of these methods include: raising money for political campaigns from vast numbers of ordinary people, pioneered by Barack Obama; Map Kibera, the participatory mapping of the largest slum in Africa; and Ushaidi, a software to keep track of violence after the Kenyan elections of 2008.

Participatory statistics are generated by those who live in conditions of complexity through facilitated processes which produce numbers that can be analysed with statistical rigour without reductionism. Some examples of participatory statistics include:

- ActionAid-Nepal study using participatory mapping in over 130 villages to generate insights and statistics on the extent to which services had reached people.

- Participatory census mapping in Malawi, which identified a 35 per cent undercount in the national census.

The **reality check approach** involves researchers living in representative communities as members of a household, spending days and nights, taking part in chores and work, listening and observing, and having two-way relaxed and informal conversations with many people. The reports prepared after these immersions are detailed, revealing, absorbing and highly credible. They reveal realities and rates of social change of which capital city policymakers, researchers and consultants are typically unaware. Some examples of reality checks are the work by Sida on primary healthcare and education, in Bangladesh, Mozambique, Indonesia, Cambodia, Nepal, Ethiopia and Ghana.

Key messages:

This book chapter makes the case for making participatory methodologies and methods central in the agenda for knowing better. Participatory methods answer the question: whose knowledge counts? The answer is "everyone's", but most of all, the knowledge of local stakeholders who are closest to the realities that need changing or improving.

The range and scope of participatory methods has expanded exponentially through combinations, sequences, improvisation, adaptation, and the creativity of facilitators.

3.1.5   Institute of Development Studies. (2023). *Useful methods and ideas*. Participatory Methods. https://www.participatorymethods.org/methods

Aim: To provide resources to generate ideas and action for inclusive development and social change.

Context: The website is managed by the Participation, Inclusion and Social Change Cluster at the Institute of Development Studies, in the UK. It is an open resource for a diversity of practitioners (such as development workers, activists, students or researchers) who are concerned with widespread social change, small group action or project planning.

Method: The website offers open access to many useful and thought-provoking resources for participatory research and practice. Participatory research and inquiry is about putting the people who are experiencing the problems at the heart of finding the solutions.

Key messages:

The website explains what participatory methods are, where and how they are used, and their problems and potentials. It focuses on participatory approaches to programme design, monitoring and evaluation; to learning, research and communication in organisations, networks and communities; and to citizen engagement in political processes. It provides a link to ActionAid's Networked Toolbox, which contains methods and tools for participation.

3.1.6   The University of Kansas. (2022, June 22). *Community toolbox*. https://ctb.ku.edu/en

Aim: The Community Toolbox is a free, online resource developed by the University of Kansas. By providing tools for taking action in communities, it aims to help those working to build healthier communities and bring about social change.

Context: The Community Toolbox is widely used in teaching, training, and technical support. It is available in several languages and used in over 230 countries around the world. It is a live resource and has been under continuous development since 1994.

Method: The webpages on ["a model for getting started"](#) are particularly useful for just transitions. They propose a simple model for taking action, involving the following steps:

- Assess. Explains how to learn what issues matter to the community and what resources are available. It includes a toolkit to assess community needs and resources.

- Plan. Provides a framework to get from where the community is now to where it wants to get. It includes toolkits on developing a framework or model of change and creating strategic action plans. It also explains the framework VMOSA (Vision, Mission, Objectives, Strategies, and Action Plans) and shows examples where it has been applied.

- Act. The toolbox offers toolkits for developing an intervention and for increasing participation and membership.

- Evaluate. Tools for evaluating initiatives can indicate whether a given initiative is effective and can highlight what adjustments may be necessary.

- Sustain. Tools for sustaining an initiative are important for ensuring the long-term change.

3.1.7   Wilcox, D. (1996). *The guide to effective participation*. Partnership Books. http://www.partnerships.org.uk/guide/main1.html

Aim: This guide is intended for the growing number of people who say `I believe in the idea of community participation - but how do you do it?' Practitioners who are asking, for example:

- How do you deal with councillors who talk about participation, but are anxious not to lose control or status?

- What is the difference between consultation, participation, partnership and empowerment?

This guide provides both a theoretical framework for the common understanding of participation, and a dictionary to facilitate the dialogue that can lead to successful participation. The guide also provides practical advice on tools and techniques that can be used to identify blocks and find solutions.

Context: This online guide was funded by the Joseph Rowntree Foundation, who promote and fund a wide range of research and development projects requiring participation.

Key messages:

- The process of participation is described during four phases: initiation, preparation, participation, and continuation.

- A ladder of participation, from less to more includes eight steps:

    - Manipulation and therapy- both are not participatory and aim to "educate" or persuade the participants to achieve public support

    - Informing. It's a first step to participation, but in this case it involves a one way flow of information

    - Consultation. Requests some feedback from participants

    - Placation. It allows citizens to advise or plan but power holders retain the right to judge the legitimacy or feasibility of the advice.

    - Partnership. Power is redistributed through negotiation between citizens and power holders. Planning and decision-making responsibilities are shared, e.g., through joint committees.

    - Delegated power. Citizens holding a clear majority of seats on committees with delegated powers to make decisions. Public now has the power to assure accountability of the programme to them.

    - Citizen control. Have-nots handle the entire job of planning, policy making and managing a programme (e.g., neighbourhood corporations with no intermediaries between them and funding sources).

The guide recognises that participation processes cannot be set-up as a linear step-by-step process. Bearing that in mind, it summarises the following main tasks in participation:

- Clarify why the participation process is being started, who has the final say, and what the aim is.

- Identify key community interests, including voluntary and community organisations.

- Consider the level of participation appropriate, make informal contacts to identify local concerns, and whether your stance - the level you are adopting - is likely to be acceptable.

- Run a workshop session(s) within your organisation to ensure key people are clear about the purpose of the participation process, the roles and responsibilities, and the answers to basic questions which will be asked when you go public.

- Consider the stance (inform, consult etc.) you are taking in more detail, and in the light of that decide on what methods you will use.

- Review whether your organisation will be able to respond to the feedback and follow through on any decisions reached.

- Review your timescale and prepare an action plan based on the level of participation.

3.2   Visioning and making choices

3.2.1   Antunes, P., Karadzic, V., Santos, R., Beça, P., & Osann, A. (2011). Participatory multi-criteria analysis of irrigation management alternatives: The case of the Caia irrigation district, Portugal. *International Journal of Agricultural Sustainability*, 9(2), 334–349. doi.org/10.1080/14735903.2011.582358

Aim: This paper explores the potential of multi-criteria analysis (MCA) to structure sustainability problems and to facilitate the incorporation of actors' multiple values and preferences in decision-making processes. The main purpose of the research was: (1) to test the potential of MCA to support integrated and participatory water management in agriculture and (2) to evaluate the main issues related to irrigation management in Caia. Context: MCA is used for the participatory evaluation of irrigation management alternatives in the PLEIADeS Caia pilot area (Guadiana River Basin, Portugal).

Method: Participatory multi-criteria analysis is a decision-making method used to evaluate problems, when one is faced with a number of different alternatives and expectations and wants to find the 'preferred' solution with regard to different, and often conflicting, objectives. The use of MCA is closely connected to participation, as a way of validating the overall structure and framing the analysis. Their proposed approach for participatory MCA consists of the following steps:

- Institutional analysis: actors identification, characterization of the legal and institutional framework;

- Framing the decision: reaching a commonly agreed problem statement;

- Defining key objectives and criteria: identifying what values matter most to the participants in this particular situation;

- Establishing alternatives and considering the relevant constraints;

- Identifying consequences. That is, identifying the most important impacts that can affect the stated objectives and associated uncertainties;

- Evaluating the desirability of the consequences according to the proposed criteria;

- Ranking of alternatives applying an aggregation procedure;

- Social impact analysis, discussing the implications of each alternative for the main actor groups.

The approach is based on the actors' involvement throughout the whole evaluation process, namely in the identification of alternatives, definition of evaluation criteria, evaluation of results, and revision of alternatives and criteria. Various participatory techniques can be combined, including interviews, participant observation, workshops and in-depth group discussions, in an iterative process. By doing so, the analyst team has the opportunity to continuously re-evaluate initially established objectives, alternatives and criteria.

Key messages:

The results obtained enabled the identification and comparison of the most preferred alternatives and the analysis of the positions of the different actor groups towards the different alternatives. Social learning was an important outcome of the process: participants acknowledged having gained an improved understanding of the problem and of each other's viewpoints.

One of the main features of this framework is the combination of different participatory techniques, where individual expression of interests and values alternates with workshops of collaborative group work between the different actors. In this way, it is possible to capture individual differences in opinions, while, at the same time, fostering social learning and a common understanding of sustainability problems.

3.2.2   Dean, M. (2021). Participatory multi-criteria analysis methods: Comprehensive, inclusive, transparent and user-friendly? An application to the case of the London Gateway Port. *Research in Transportation Economics*, 88. doi.org/10.1016/j.retrec.2020.100887

Aim: To apply participatory multi-criteria analysis to a real transport planning case: the London Gateway port. Although participatory MCA are often seen as capable of producing more

comprehensive, transparent and democratic assessments than traditional appraisal techniques, there has been limited practical application to examine their effectiveness.

Context: Planning of large-scale transport infrastructure in the United Kingdom.

Method: Participatory multi-criteria analysis. This paper considers the case of the London Gateway Port and compares the actual planning and decision-making process of the port development program with the results of a multi-actor multi-criteria appraisal exercise, involving several project stakeholders and experts.

Key messages:

The findings of this multi-actor multi-criteria appraisal exercise do not support many of the key arguments put forward by proponents of such methods (i.e. comprehensiveness, inclusivity, clarity and transparency of the process). The paper details issues that limited the validity of the method. Some of them are summarised below:

- Stakeholders did not include many important aspects in the participatory appraisal exercise that had been considered by the conventional appraisal process.

- Several people experienced difficulties in understanding the basic principle of MCA, raising doubts over the reliability of the process and its outcome.

- The process did not add any critical information to the London Gateway inquiry (which had already been conducted).

- The difficulty of identifying and involving all affected and interested parties means a multi-actor multi-criteria appraisal exercise of any large-scale transport project risks taking a step backwards with reference to democracy and equity.

- By forcing people to frame the problem in a simplistic and schematic manner, MCA is likely to exclude critical information, and may hide or underplay many important differences between participants' viewpoints.

The participatory MCA documented in the paper had some limitations, which may explain the poor results obtained. The process involved only nine people who due to their business commitments had only a relatively limited amount of time to complete the MCA exercise. It was also impossible to have mutual interactions and discussions between participants. Therefore, a more rigorous process (entailing, for instance, the involvement of a greater number of stakeholders and experts, the possibility of iterating the process several times, more time for

interviews and also the opportunity to include some discussions between participants) is likely to increase the breadth and depth of the assessment.

The authors argue that, whereas further empirical research in the application of multi-actor multi-criteria techniques is surely needed and recommended, the potential contribution that such methods can provide to the improvement of decision-making for major transport infrastructure seems to be limited at best. Participatory MCA procedures should only be used to complement and integrate the information derived from traditional appraisal methods and well-established consultation procedures, and preferably employed only to examine specific and self-contained aspects entailed by the transport project which is being assessed.

3.2.3   Department of the Prime Minister and Cabinet. (2022, June 22). *Futures thinking*. https://dpmc.govt.nz/our-programmes/policy-project/policy-methods-toolbox/futures-thinking

Aim: To support policy processes by providing strategic foresight on long-term issues/challenges.

Method: Futures thinking involves looking for signs of change that may shape the range of possible futures, using diverse data sources, engaging with diverse stakeholders, and applying a systems lens to consider not only the factors immediately relevant to a policy but also macro trends. This online resource includes many tools including: horizon scanning, assumption testing, futures wheel, scenarios, wind tunnelling and backcasting.

3.2.4   Kowalski, K., Stagl, S., Madlener, R., & Omann, I. (2009). Sustainable energy futures: Methodological challenges in combining scenarios and participatory multi-criteria analysis. *European Journal of Operational Research*, 197(3), 1063–1074. doi.org/10.1016/j.ejor.2007.12.049

Aim: This paper analyses the combined use of scenario building and participatory multi-criteria analysis (PMCA) in the context of renewable energy.

Context: Methodological paper with a case study for Austria.

Method: Scenario building uses different possible pathways into the future to support decision-making about long-term consequences. Scenario analysis accounts for a higher degree of complexity inherent in systems compared with the study of individual projects or technologies. MCA is a widely used appraisal method. MCA assesses options using a multi-dimensional criteria framework and assigns a ranking to each option. Participatory MCA (PCMA) involves intense stakeholder involvement to define the relevant criteria and their weights. In the case studies reported here, scenario analysis and PMCA were combined for developing and appraising renewable energy scenarios on multiple levels.

In the study, five renewable energy scenarios for Austria for 2020 were appraised against 17 sustainability criteria. A similar process was undertaken on the local level, where four renewable energy scenarios were developed and evaluated against 15 criteria. On both levels, the scenario development consisted of two stages: first, an exploratory stage with stakeholder engagement, and second, a modelling stage with forecasting-type scenarios. Thus, the scenarios consist of a narrative part (storyline) and a modelled quantitative part. The preferences of national and local energy stakeholders were included in the form of criteria weights derived from interviews and participatory group processes, respectively.

Key messages:

- The benefits of combining participatory methods with analytical tools (such as MCA) are widely acknowledged

- Scenarios are particularly well suited for exploring complexities and uncertainties

- The combination of MCA and scenario analysis is a promising, but challenging, methodological option in terms of design and implementation.

- This combined methodology has the potential to capture the context of technology deployment while also allowing decision-making to be based on a robust and democratic process, which addresses uncertainties, acknowledges multiple legitimate perspectives, and encourages social learning.

3.2.5   Krumdieck, S. P. (2017). Transition engineering. In X. Zhang & I. Dincer (Eds.), *Energy solutions to combat global warming*. Springer International Publishing. doi.org/10.1007/978-3-319-26950-4_32

Aim: The book introduces the discipline of "transition engineering", which is emerging in response to so-called wicked problems of global climate change, the decline in fossil fuels supply, resource scarcity and environmental constraints. By redesigning and redeveloping existing systems, Transition Engineering aims to down-shift to an ultra-low energy, mineral, and natural resource consumption while uplifting quality of life, environment and real value.

Context: The book proposes an approach to designing and implementing transitions drawing from engineering.

Method: Transition Engineering uses an engineering approach to sustainability transitions. The book proposes the interdisciplinary transition innovation, engineering and management (InTIME approach) for downshifting resource consumption while uplifting quality of life. InTIME consists

of seven steps: 1) Study the history of the activity system to understand how and why the system developed to the current stage; 2) Take stock of the current situation, exploring the social, political and economic context; 3) Explore the future, developing scenarios for the activity system in the next 100 years, for example; 4) Time travel through creative brainstorm, creating a believable system where people can meet their needs in a sustainable way; 5) Backcast and trigger, taking the lessons learned from the future and the past and backcast to the present. The outcome is a clear picture of the types of triggers that would cause a change in business as usual; 6) Down-shift project, that would deliver feasible changes now and would still provide benefits in the future, and project plan; 7) System transition. Investigate transition management scenarios for where the new direction leads. The objective is to discover how the shift in direction leads to growth in new businesses social benefits and environmental regeneration.

The book elaborates on each of the steps of the InTIME methodology, proposing models and methods. These include, for example, modelling system dynamics; evaluating the biophysical economics of the system, through measurements like the EROI (energy return on energy investment); tools to develop energy transition scenarios such as technology wedges, efficiency wedges, no growth, or forward operating environment; strategic analysis of complex systems; and multi-criteria decision analysis (MCDA).

Key messages:

The book departs from the premise that transitioning to a sustainable system requires reducing demand of those resources that we are consuming at an unsustainable rate. Investment in projects that assume continued growth in electricity demand or the dominance of private vehicles in developed countries are committed to failure. The technology development that would be required to provide this assumed growth for several decades is not feasible. Transitions will involve the redesign and redevelopment of aging infrastructure and technology, and the curtailment of expansion in fossil fuel production. The book does not address the issue of social justice in the transition.

3.2.6   Robinson, J., Burch, S., Talwar, S., O'Shea, M., & Walsh, M. (2011). Envisioning sustainability: Recent progress in the use of participatory backcasting approaches for sustainability research. *Technological Forecasting and Social Change*, 78(5), 756–768. doi.org/10.1016/j.techfore.2010.12.006

Aim: The aims of this paper are threefold. First, it describes progress in participatory scenario-based backcasting approaches to sustainability research; second they gather evidence from case studies on how communities and decision makers can articulate viable courses of action to

achieve their desired futures; third, they explore costs and benefits of participatory backcasting and speculate about its role in operationalising sustainability.

Context: Backcasting methodologies for sustainability are used in a range of academic, government, and private sector projects in the Lower Mainland of British Columbia, Canada. These projects include the Georgia Basin Futures Project, the Local Climate Change Visioning Project, the Collaborative for Interactive Research with Communities Using Information Technologies for Sustainability, the South Okanagan Land Use Modelling Project, and the MetroQuest platform developed by Envision Sustainability Tools

Method: The paper describes recent progress in using participatory scenario-based backcasting approaches to sustainability research that blend quantitative and qualitative analyses in order to explore alternative climate change futures.

The essence of the backcasting approach to future studies is the articulation of desired futures, and the analysis of how they might be achieved. Criteria are developed for a sustainable, and desirable, future, which are then used as a guide for the design and implementation of measures that may facilitate progress towards that future.

Early backcasting studies tended to focus on scenarios created by researchers to explore the achievement of externally defined targets. Some newer backcasting studies are participatory, with participants creating preferred futures as well as exploring the trade-offs and consequences of different choices using modelling and simulation tools.

Projects showcased in this paper involve participatory backcasting techniques, 3D visualization tools, criteria and indicators, and multi-stakeholder participation. The paper includes a useful summary table showing the tools, nature of participation, process iterations and lessons learned in each case study.

Key messages:

The paper describes various techniques such as land use modelling, climate change 3D visualizations, regional sustainable futures, and dialogue-based workshops. It emphasises that tools must be grounded in a participatory process. Key elements in the process are enabling participants to share their values and principles, and to build capacity to navigate the complexity of the choices they are being asked to make. The integration of tools and processes helps build awareness, promotes dialogue and enhances collaboration among different stakeholders. They can be used to drive action and support decision making.

A truly consultative and consensus-oriented process requires that a broad sample of the community is engaged in the discussion, that they understand the goals of the process and are equipped with technical knowledge in order to participate in an equitable and effective fashion.

3.2.7 Scott, L. (2005). Participatory multi-criteria decision analysis: A new tool for integrated development planning. *Development Southern Africa*, 22(5), 695–716. doi.org/10.1080/03768350500364232

Aim: This article proposes a new method, participatory multi-criteria decision analysis, for implementing integrated development planning. This is applied to comply with the Local Government Municipal Systems Act of South Africa (2000).

Context: South Africa.

Method: The discipline of Multi-Criteria Decision Analysis is a branch of decision analysis which deals explicitly with decision making in the context of simultaneous multiple goals, criteria or objectives. MCDA encompasses three broad actions: explicit identification of criteria, evaluation of alternatives with respect to individual criteria, and aggregation across criteria.

A participatory MCDA values the participation of all interested and affected parties. In the case study, it involved participants from the communities affected, Government officials and associated experts, and elected councillors/politicians. The process consisted of the steps detailed in Figure 9 copied below. The process of creating an integrated development plan (IDP) through participatory MCDA culminates with the formulation of a budget for the forthcoming period. The budget includes projects and interventions which participants believe will effectively and sustainably support the municipality's developmental objectives. The paper explains in detail each of these steps.

Figure 9: The steps towards an integrated, participatory budget
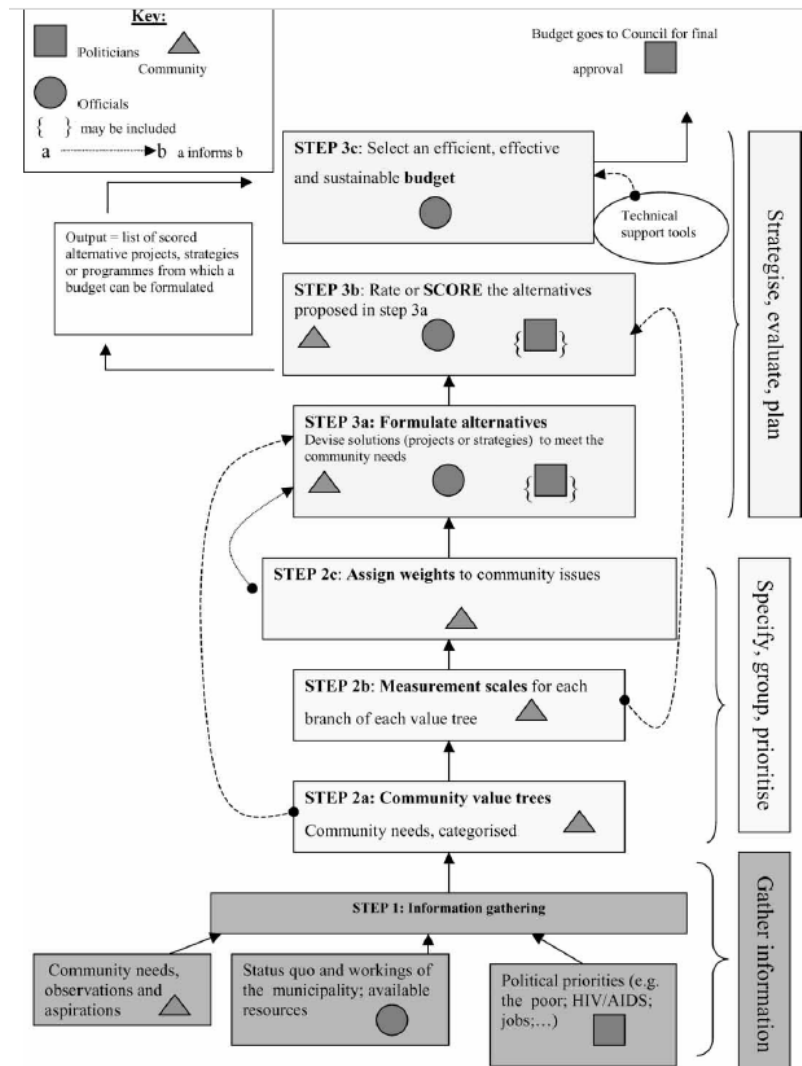
Key messages:

- The proposed method is presented as a means of collating and synthesising judgements from a range of different sources into a coherent framework to inform the process of drawing up a municipal budget via a process of integrated developmental planning.

- Similar to other participatory approaches, the approach proposed in this article may be bedevilled by difficulties in achieving a consensus community view, as well as the problem of the ever-shifting community face, as different voices come and go.

- Like all participatory methods it will require skilful and considered effort to ensure that dominant voices do not manipulate the situation to maintain unequal power relations.

- Participatory MCDA requires considerable time, resources and energy to implement. A process of effective communication with a wider range of stakeholders than the immediate municipal officials needs to be supported through additional resources.

3.2.8   STEPS Centre. (2023, June 22). *Pathways to sustainability*. STEPS Centre. https://steps-centre.org/

Aim: The website contains methods and case studies relevant to the Pathways to Sustainability approach. This [animation](#) describes the approach. In summary, the approach is a guide to thinking and action around emerging sustainability challenges associated with climate change, energy, pandemic disease, water scarcity, hunger, poverty and inequality.

Context: The STEPS Centre, based at the University of Sussex, developed the Pathways approach to deal with complex global issues related to environmental integrity and social justice. It operated between 2006 and 2021 with partners around the world.

Method: The STEPS Centre adopts a system's perspective. Their approach:

- reveals diverse understandings of systems goals, properties and dynamics held by different institutions and groups

- analyses how particular perspectives become dominate, and how they play out in politics, policy and management

- exposes the effects and implications for linked social-technological-ecological processes, and for the livelihoods and well-being of particular groups of poorer, marginalised people

- challenges institutional and political relationships and forms of power/knowledge that contribute to unsustainability and social injustice

Their page on [methods](#) provides a rich compilation of tools, methods and case studies for pathways to sustainability. Some examples of methods include: participatory theatre, agency network analysis, life histories, rivers of life, technography, sensitivity analysis, participatory rural appraisal, or multicriteria mapping.

Key messages:

The pathways approach acknowledges that different actors understand systems in different ways. These different framings lead to different narratives being told about the same system and different choices being prioritised. Often the narratives of the most powerful actors are the ones driving policy and interventions, while the pathways preferred by poorer people are side-lined.

Participatory tools are required to make these ignored pathways more visible, so that just transitions can be achieved. Given deeply entrenched power and interests, building pathways to sustainability that consider a plurality of voices is challenging.

3.2.9   Vergragt, P. J., & Quist, J. (2011). Backcasting for sustainability: Introduction to the special issue. *Technological Forecasting and Social Change*, 78(5), 747–755. doi.org/10.1016/j.techfore.2011.03.010

Aim: The paper introduces a special issue on backcasting for sustainability. Backcasting is defined as "generating a desirable future, and then looking backwards from that future to the present in order to strategize and to plan how it could be achieved". The paper reflects on the diversity and variety of backcasting studies and experiments, as presented in the ten papers for the special issue.

Context: The paper introduces a special issue dealing with the use of backcasting for sustainability. The papers use the methodology in several case studies, mainly in the European Union.

Method: Participatory backcasting. It appears from this special issue that expert-led backcasting is more often used to reach policy objectives (papers by Höjer, Gomi, Kok, et al.), while participatory backcasting is more often used to achieve stakeholders' and lay-persons' buy-in (Robinson et al.; Eames et al.; Svenfelt et alt; Quist et al.). It would be worthwhile to investigate if these differences could and should be bridged, and how to overcome the tensions between expert-driven backcasting without losing buy-in by stakeholders; participatory backcasting runs the risk of losing policy objectives. Despite several examples reported by several authors in this special issue, it appears that buy-in does not automatically lead to implementation and inclusion in policy programs.

Key messages:

Three classes of scenarios or futures are:

-   What will happen – they involve trend extrapolations and business as usual scenarios. They do not take uncertainty into account.

-   What could happen – they involve forecasting; fore-sighting and strategic scenarios. At the present time the most influential forward-looking scenarios are the IPCC scenarios, which model what could happen to the climate as a consequence of greenhouse gas emissions to the atmosphere; and the Global Environmental Outlook (GEO) scenarios created by UNEP.

- What should happen – normative scenarios like those used in backcasting. They are also called desirable futures, visions, or future visions.

There are similarities with transition studies, which seek to develop approaches for purposeful societal transitions towards sustainability, recognising the systemic nature of the challenges ahead. In the past, these transitions were not purposefully planned; they happened because of technological developments and related social change.

A key issue is how to create the future vision. It can be left to experts or be a democratic or deliberative process involving stakeholders and citizens. In actual practice, it makes an enormous difference if future visions are developed by stakeholders, by lay people, or by experts. It is generally difficult to disengage from present values and interests to recreate a desirable future.

The introduced special issue includes several papers with examples of participatory backcasting:

- Robinson et al. (2011) describes the Local Climate Change Visioning project, which forged partnerships between politicians, municipal staff, and scientists in order to better communicate the complexity of local climate change impact and response options and stimulate locally-specific and integrated adaptation and mitigation options. An intense participation process led to visions which embodied local values and priorities. Some key themes emerging from this paper are: sophisticated tool development can enable intense stakeholder participation; process is more important than outcome; and contextual elements are very important in this process as they enhance the ability to explore highly complex and uncertain futures.

- Malcolm Eames et al. (2011) describe a participatory backcasting process in Mildmay, a deprived urban area in North London. The aim of this project was both to develop a vision of a sustainable future, and a research agenda for the Research Council that would endorse this vision. Three groups participated: a Researchers' panel, a Practitioners' panel, and a Residents' panel. One of the most appealing activities were the Community Film Projects, in which each of the panels were provided with the opportunity to make several short films exploring their own stories of living in their local community, and what sustainability meant to them. The paper claims that expert-led backcasting can lead to an elite-led technocratic process and advocates an inclusive foresight process known as the "Community Foresight" methodology. The paper concludes that participatory filmmaking and other visual and artistic tools can empower and give a voice to lay citizens from marginalised and excluded communities.

- Asa Svenfelt et al. (2011) describes a participatory backcasting process using focus groups. The aim was to reduce energy use by 50% in residential housing in Sweden. The research developed different scenarios to fulfil this target. Some placed more importance on technology, while others depended on behavioural changes by residents. The paper found that more knowledge is needed about potential change agents. The paper also shows how to achieve collaboration and coordination among the various actors. Notably, most participants expected the other stakeholders to be the key agents of change.

- Kasper Kok et al. (2011) combine explorative scenarios with backcasting to address the possible long-term implementation of the European Union Water Framework Directive. A panel of European stakeholders convened in five workshops; they started with developing qualitative explorative scenarios through the "Story and Simulation" approach, by combining narrative stories with mathematical model results in an iterative procedure. Four narrative storylines were developed. Backcasting was then used in the form of concrete backward-looking analysis, looking back from the year 2050 storylines towards the present. Through a stepwise approach, stakeholders identified obstacles and opportunities; and milestones and interim objectives for each of the storylines; followed by the identification of political actions to be taken. Finally stakeholders identified robust strategies, i.e. combinations of milestones and actions that would be effective in each of the four scenarios.

- Wangel (2011) explores change agency, concluding that it is hard to imagine that individual actors could be change agents all by themselves in the case of desirable or necessary systemic change. Instead, disruptive change should be brought by major coordination and cooperation between major stakeholders.

3.3   Community engagement and procedural justice in energy infrastructure

3.3.1   Lennon, B., Dunphy, N. P., & Sanvicente, E. (2019). Community acceptability and the energy transition: A citizens' perspective. *Energy, Sustainability and Society*, 9(1), 35. doi.org/10.1186/s13705-019-0218-z

Aim: The paper addresses the question: How can local communities become empowered to drive project development and meaningfully engage in the low-carbon energy transition? It outlines an integrated approach, using co-design and participatory action research, to incorporate citizen perspectives into the planning and implementation of more appropriate energy business configurations. They present examples of how extended stakeholder

perspectives can improve procedural justice outcomes and ensure the rollout of more equitable energy configurations in the future.

Context: Examples from six communities across five European countries (France, Ireland, Italy, Spain and the UK).

Methods: Co-design; participatory action research. This paper presents a methodology for investigating citizen perceptions of the energy transition and the kinds of roles they see themselves having in its implementation. Working with six communities across five European countries (France, Ireland, Italy, Spain, and the UK), they conducted a series of iterative cross-sectional community engagements using a mixed methods approach. In addition, a number of innovative participatory action research tools were incorporated to engage citizens in co-designing their own energy transition pathways**.**

Key messages:

- Citizens remain locked out of the decision-making processes of the energy transition. As a result, local opposition to the deployment of renewable energy technologies has been significantly higher than expected. In numerous instances, opposition is a reaction to the disempowerment of local rights and entitlements associated with specific developments.

- Participants in the research wanted to have real agency in the transition to a low-carbon RES (renewable energy sources) system and did not consider this to be the case at present.

- Participants also wanted better access to clearer, more applicable information on the types of community-focused energy projects that they could realistically develop.

- Working with communities, researchers first defined the typical structural characteristics common to community-led organisations. They divided the characteristics according to (1) organisational type, (2) ownership, (3) objectives, (4) focus, (5) control, and (6) linkages.

- They then co-created a characterisation tool to assess the participation potential of each community-orientated energy project. The tool is presented in Figure 10.

- The tool was applied to five different scenarios to assess their participation potential: an energy purchasing cooperative, a commercial wind farm, a locally owned hydropower plant, a farmer-owned biogas cooperative partnered with a district heating cooperative, and municipalities, universities, schools and hospitals (MUSH) energy producers.

Figure 10: Characterisation tool – Criteria used to assess each scenario's performance in terms of its energy democracy and citizen participation potential

Fig. 2 Characterisation tool. Criteria used to assess each scenario's performance in terms of its energy democracy and citizen participation potential

3.3.2   Schinke, B., & Klawitter, J. (2015). *Good neighbours. A development policy perspective on community acceptance and procedural justice in the context of utility-scale renewable energy* (p. 28)
https://www.germanwatch.org/sites/default/files/publication/11191.pdf.

Aim: The publication recognises that community acceptance is key to transitioning to a sustainable energy system with a high share of renewable energy (RE). It explains how to improve acceptance through procedural justice in the form of meaningful community engagement and positive relationships with communities. The result would be strong communities benefiting from RE projects and a sustained license to operate for the projects' full lifespan.

Context: The report draws from the experience of Germanwatch in Concentrated Solar Power (CSP) in Morocco. Rather than focussing on a specific country, the paper emphasizes the potential of utility-scale RE to address poverty alleviation in developing countries.

Theoretical and conceptual framework: The paper defines community acceptance as "the acceptance secured for a development from affected stakeholders within the community in which the development is located". Distributional and procedural justice, as well as community perceptions and awareness are essential for community acceptance of utility scale RE.

- Distributional justice relates to the extent and fairness in which benefits and burdens are distributed among the affected communities and encompasses benefit sharing

mechanisms, e.g., local content requirements, voluntary social development funds, or compensation regimes in case of displacement or loss of livelihood assets

- Procedural justice or community engagement is a prerequisite for distributional justice and refers to dialogue procedures, e.g., information provision and transparency, as well as meaningful participation in decision-making and accountable grievance mechanisms.

- Community perceptions and awareness is composed of the understanding of the project's procedures and outcomes; a sense of ownership or buy-in which develops through the axes of distributional and procedural justice; and community trust and credibility drawing from the relationship between local stakeholders and decision-makers.

Key messages:

The report provides useful insights to address the following issues about community engagement:

- Stakeholders: Who should engage in the project's decision-making process?

- Level of influence in decision making: To what extent are decision-makers willing and able to engage affected communities in the project decision-making process?

- Project phases: At what point during the project should affected communities be given the opportunity to engage in the decision-making process?

- Conditions for successful community engagement. The report lists several conditions that will enable community engagement.

- Importance of engaging civil society organisations (CSO) to bridge the communication gap between policymakers, project developers and local communities. As with communities, several conditions are identified signalling the potential for a successful CSO partnership.

The report also outlines **procedural justice principles** that should form the basis of any meaningful community engagement process These principles can also help develop positive relationships with communities in the development of utility scale renewable energy projects.

1   **Accountability**: Ensure that the community engagement process and its outcomes comply with all relevant customary, national, and international laws, rules, regulations, permit requirements, and ratified conventions.

2 **Context and stakeholder analysis**: Analyse relevant community stakeholders – vested and non-vested – and incorporate socio-economic, environmental and political context specifics, e.g., procedures of traditional decision-making through a transparent and participatory process.

3 **Representativeness**: Verify that stakeholders involved in the community engagement process legitimately represent the views and interests of affected communities and that they can be relied upon to faithfully communicate the results to their constituents.

4 **Inclusiveness:** Emphasize social inclusion by involving a wide cross-section of local stakeholders – vested and non-vested – with a special focus on marginalized and vulnerable minority groups (e.g., women, young, elderly, and indigenous people).

5 **Free, Prior and Informant Consent (FPIC):** Obtain FPIC by pro-actively providing: Information on the project's outcomes and engagement procedures in accessible, transparent and contextually appropriate formats prior to the project deployment; sufficient time, resources and advice to allow stakeholders to understand project outcomes and procedures; confidentiality of feedback and security in regards to coercion or intimidation; two-way communication channels throughout the entire project lifecycle to ensure ongoing dialogue and participation; reports on issues raised during the engagement process and its progress.

6 **Empowerment:** Support participants to get engaged effectively by providing them with awareness-raising and capacity-building (e.g., logistical or process-orientated skills).

7 **Respect diversity:** Treat every position, interest or perception with respect and create mutual understanding.

8 **Enhancement:** Move from a "do-no-harm" concept and a risk-based perception towards a community-orientated enhancement philosophy to demonstrate shared value.

9 **Responsiveness:** Flexibly adjust the community engagement process according to emerging issues, changing circumstances and mutual learning.

10 **Grievance mechanisms:** Provide channels to lodge complaints, solve project-related disputes and seek remedies through project-level grievance mechanisms that are culturally appropriate and accessible.

11   **Review:** Monitor the performance of the community engagement process and its outcomes periodically based on indicators agreed upon with community participants, with particular attention to expectation management.

3.3.3   Willis, S., Stephenson, J., & Day, R. (2012). *Blueskin people power: A toolkit for community engagement*. https://ourarchive.otago.ac.nz/handle/10523/6949

Aim: This report describes the community engagement processes used over six years by the Blueskin Energy Project (BEP). The vision of the project was to build resilience to climate change and energy insecurity. The community envisioned energy efficiency improvements and local electricity generation to achieve this. Among the possible options for generation, they selected a small wind turbine cluster. Community engagement processes led to the project being strongly embedded and supported in the community.

Context: The community engagement tools detailed in this guide were used to design a community-owned renewable energy development in the Blueskin area of New Zealand. The Blueskin Energy Project began in 2006 in the Waitati community, which aimed to become resilient to climate change and energy insecurity. It later grew to encompass the Blueskin area, as different communities in the area share common interests. Additionally, a single substation connecting all electricity lines to settlements was developed. The Blueskin Energy Project is the flagship project of the Blueskin Resilient Communities Trust (BRCT).

Method: The BEP delivered a community engagement toolkit that can be useful for other communities seeking to co-create a project that will contribute to a shared community vision. The toolkit consists of four groups of tools: 1. Initiating Action, which includes inspiration and visioning; 2. Shaping action, including integrated thinking, relationships, working with other community initiatives, professionalism and being informed; 3. Being organised, including formal structures, formal agreements, social entrepreneurism and funding; 4. Engagement tools, including informal meetings, open dialogue, public meetings/workshops/hui, building literacy, regular communication, supporting wider community interests, lively creative events, opportunities for community investment, multiple paths for feedback, and listening and responding.

Key messages:

The BEP offers a very good case study to illustrate the different stages in community engagement applied to a community energy project. Communities face challenges like lack of funding or technical expertise, to implement renewable energy projects, as compared to energy

companies. However, their strength lies in their ability to harness the community's creativity, motivation and vision. A set of tools are required to harness this potential, and the process is long. This toolkit helps communities navigate such a process.

3.4.1   Harrison, S., Macmillan, A., Bond, S., & Stephenson, J. (2022). *Climate change adaptation decision-making for health and wellbeing in South Dunedin: Report on the use of causal mapping for stakeholders*. ourarchive.otago.ac.nz/handle/10523/13589

Aim: The aim of this research was to develop a qualitative model for flooding and sea-level rise effects on health and wellbeing in a high-risk urban area in New Zealand, with an equity focus. Anthropogenic climate change is increasing the risk of flooding and sea-level rise in many parts of the world, with far-reaching implications for the health and wellbeing of individuals and communities. Adaptation is necessary to minimise the negative impacts of climate change that are already locked-in by historical greenhouse gas emissions. Holistic, systems-thinking approaches are required to understand the complex relationships between health, wellbeing, and climate change at the community level. Health and social equity must be at the centre of adaptation planning and decision-making.

Context: South Dunedin is one of the most immediately vulnerable urban areas in New Zealand due to its physical geography and high population density. Many of its diverse sub-communities are also at greater risk of harm from climate change due to existing structural inequities.

Method: Participatory causal mapping. The report shows a qualitative model of the system dynamics of flooding and sea-level rise effects on health and wellbeing in a high-risk urban area, with an equity focus. The method involved thirty-two individual interviews and two group workshops with community stakeholders, policymakers, and technical experts. The interview data was analysed, triangulating participants' knowledge with that of the existing literature to develop a set of six qualitative Causal Loop Diagrams (CLDs). These CLDs capture the reinforcing and balancing feedback behaviour that influence health and wellbeing in the context of climate change adaptation in South Dunedin, and were used as the basis for group learning activities in the workshops. The CLD themes were: quality of housing, the housing market, economic effects, community-led development and participation in decision-making, the insurance market, and access issues. Together, these CLDs demonstrate how flooding and sea-level rise can exacerbate existing wellbeing issues such as poverty, poor quality housing, housing unaffordability, and underinvestment in the area. Participants were guided through a process in which they

developed a shared understanding of the complex feedback behaviour that can lead to negative or unanticipated system outcomes.

Key messages:

Intervention points were identified, with implications for adaptation planning and policy. These included well-planned investment to support climate resilience, community vibrancy, and quality housing that avoids gentrification and exacerbating inequities. Targeted land reclamation and the use of blue-green infrastructure may also support wellbeing. Importantly, community must be at the heart of adaptation decision-making to ensure effective outcomes and community agency.

Future research in urban areas should continue to undertake systems-thinking approaches in order to gain a better sense of the generalisability of the themes identified here.

3.4.2 The KM Training Package. (2022). *Net-Map. The KM Training Package*. https://www.kmtraining.org/content/net-map

Aim: The aim of the Knowledge Management Training Package is to discuss the Net Mapping approach. This is a participatory approach for visualising, discussing, analysing and improving influence and power networks, which was originally developed by Eva Schiffer[1].

Context: The module is part of the Knowledge Management Training Package for the Global Health Program. It is an online training resource with numerous ready-to-use training modules specifically for trainers and program managers in the health sector.

Method: The module focuses on Net-Mapping and outlines lessons learnt from health projects in Ethiopia, Nigeria and Malawi. The module also provides tools and resources for planning and implementing Net-Map.

Key messages: Net-map is a simple but powerful participatory tool to untangle networks of power and influence. When trying to achieve change in a community, it can help to understand who can influence the success of our actions, what formal and informal channels we can use to interact with these and less powerful actors, or what are potential coalitions and bottlenecks that may drive or prevent our goals.

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[1] https://netmap.wordpress.com/about/

3.4.3 McKercher, K. A. (2021, Jan 25). *Who cares? Introducing a model of care for co-design*. [Article]. LinkedIn. https://www.linkedin.com/pulse/who-cares-model-care-co-design-kelly-ann-mckercher-them-they-/

Aim: This blog describes how to care for each other during co-design.
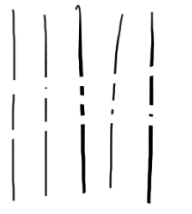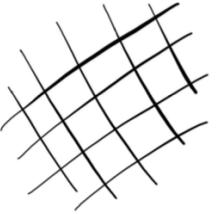
Context: Care is referred to as part of the co-design process, which has several phases. Care would be part of the first phase on "building the conditions". This first phase is about prioritising relationships, building trust and setting up the right conditions for the meaningful participation of everyone involved.

Method: Care in participatory research

Key messages:

- When working with traumatised and historically under invested groups of people, it is important to make them feel safe. Without safety, it is hard to participate and be creative.

- In co-design it is recommended that you "move at the speed of trust"

- A model of care for co-design has 3 components (see Figure 11 below).

Before bringing the co-design team together	Assess the fit Establish a support team Build relationships Offer genuine invitations Widen inclusion
Keeping the team together	Connect co-designers Seek ongoing feedback Have courageous conversations Seek ongoing relationships Care for each other
Working safely within your support team and with co-designers	Develop frameworks for safety, e.g. frameworks for serious disclosure, safe disclosure, a duty of care, the rights and responsibilities of co-designers, frameworks for recognition, attribution and payment

Some recommendations for caring in co-design include:

- focus on relationships, peer support and partnerships

- stick to your promises to co-designers and if you don't, make amends (to do this, you must step out of your shame to address it)

- acknowledge and build on strengths in people and places

- validate people's emotions and experiences

- compensate (pay) and attribute co-designers' work

- offer healing and support, within and outside the co-design team

- minimise shame and isolation (reinforcing that there is no 'normal' way to be)

- celebrate the wins and processing the grief of losses (e.g. a loss of funding or political support).

3.4.4   Schiffer, E., & Waale, D. (2008). *Tracing power and influence in networks: Net-Map as a tool for research and strategic network planning* (Discussion Paper No. 00772). International Food Policy Research Institute. https://www.ifpri.org/publication/tracing-power-and-influence-networks

Aim: The report presents the Net Map research tool, developed to better understand multi-stakeholder governance, gathering in-depth information about governance networks, goals of actors and their power and influence.

Context: The tool is applied to the case of a Ghanaian sub-national River Basin Board (i.e., a multistakeholder water governance body). The method can be used on many different levels, from community to national to international.

Method: Net-Map. Net-Map merges characteristics of two existing methods, namely social network analysis and the power mapping tool. Using a participatory approach, interviewees and interviewers together draw a network map of the actors involved in the policy arena and characterize the different kinds of links between the actors. They then add "influence towers," made of checkers pieces, to transfer the abstract concepts of power and influence into a three-dimensional form. Finally, the interviewee assesses the goal orientation of the different actors (for example, developmental versus environmental). After stakeholders prepare a map of actors showing their links (flows of fund, chains of command, flows of information…) and the power of each actor, the interviewer uses the drawn map to structure a qualitative discussion of the governance situation. Starting with the most influential actor he or she asks about sources and effects of influence. Some examples of questions include:

- I see you have put this one on the highest tower. Why? Where does his/her influence come from? How would an outsider like me see that?

- You say that these two have the same level of influence. What happens if they disagree? Is their influence based on the same grounds? Does it have the same range?

- I have heard there is a conflict about a particular issue between these three actors. Could you explain to me what that is about?

- You have linked this actor to many others, but you say he doesn't have much influence. Why is that so? Interviewers should make sure that they discuss all actors in the setup.

Figure 12: Example of net map prepared for River Basin Board in Ghana
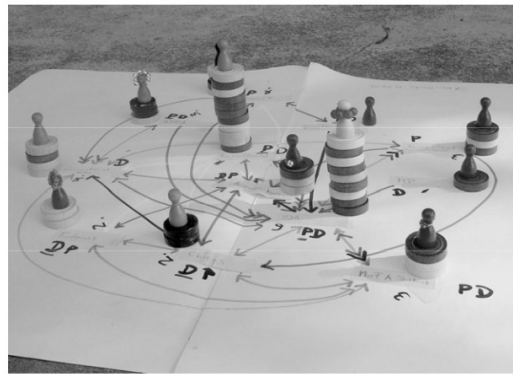
Actors on influence towers

Key messages:

Net-Map is a method that allows for the analysis of actors' characteristics and how they are linked to one another in a comparative, structured way that provides researchers with both qualitative and quantitative data. It can increase understanding of how multistakeholder organizations impact on complex governance fields. In the case study, about the White Volta Basin Board in Ghana, net-map proved to be a strong tool not only for gathering data but also for helping stakeholders to increase their understanding of the political arena in which they were working. In the case study, influence emerged from informal networks, whereas formal lines of command were relatively unimportant.

In Ghana, the tool proved to be applicable interculturally, easy to apply, and adaptable. Interviewers with different levels of research background successfully conducted interviews. Interviewees were excited about their own learning processes throughout the interviews. Implicit understanding and concepts were visualized and made explicit so that group members could understand where they agreed and where they differed in their perceptions of the governance arena. The authors conclude that NetMap should be used as a well-structured component of broader frameworks of governance analysis and facilitation.

3.4.5   Seeds for Change. (2020). *Short guide to consensus decision making*. http://www.seedsforchange.org.uk/shortconsensus

Aim: Consensus is a way of reaching agreement in a group that is creative and co-operative. Instead of voting on a decision and having a majority of the group get their way, consensus means working together to find win-win solutions that everyone supports. All decisions are made with the consent of everyone who is fundamentally affected, meaning that everyone's core needs are considered. This guide offers a short introduction to the values and principles of consensus, a common process for reaching consensus decisions, and offers suggestions for making it work in practice.

Context: The short guide is addressed to activist groups, co-ops and communities. It was prepared by a UK organisation.

Method: Consensus decision making. The guide describes the method for consensus decision making, which is summarised in the flowchart below (Figure 13).

Figure 13: A consensus flowchart

A consensus flowchart

Stage 1: Introduce and clarify the issue
Share background information. Work out the remit of the discussion - i.e. what questions do you need to decide about now?

Stage 2: Open out the discussion
Make space for everyone to share their needs and opinions before launching into trying to solve the problem. If ideas come up already, you could hear them briefly, then park them for the next stage.

Stage 3: Explore ideas in a broad discussion
Come up with lots of different ways forward. Explore the pros and cons of different options. Identify key concerns, needs and objectives.

Stage 4: Form a proposal
Look for a solution that meets everyone's most important needs. This might involve weaving together elements of different ideas.

Stage 5: Amend the proposal
Look for changes that will make the proposal even stronger.

Stage 6: Test for agreement
Clearly state the proposal and check whether there is real agreement. Starting by asking for who is against the proposal makes it easier for people to voice their concerns. E.g.:
      Any **blocks**?
      Any **stand-asides**?
      Any **reservations**?
      Do we have **consensus**?
If you have a block, or too many stand-asides you will need to go back a stage, and amend the proposal further, or create a new one.

Stage 7: Work out how to implement the decision
Work out what needs to happen, by when, and who will do it!

Key messages:

Consensus enables a more just and equitable decision-making process. By definition, no decision is made against the will of an individual or a minority. The whole group has to work hard to find win-win solutions that address everyone's needs.

Consensus requires that certain conditions are in place in a group. These include: a common goal, commitment to consensus, truth and openness, sufficient time, a clear process, and active participation.
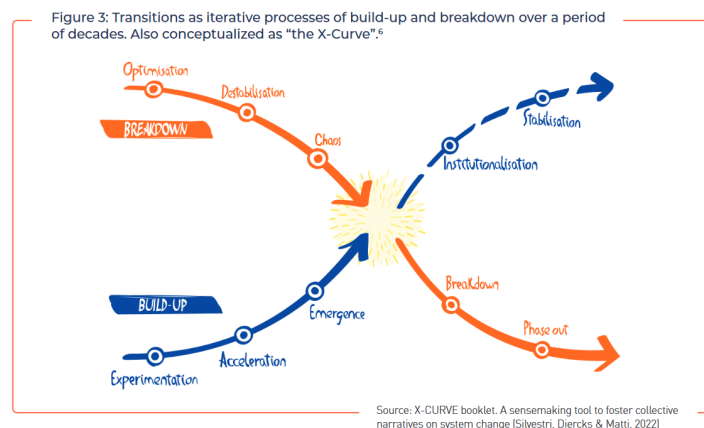
3.4.6 UrbanA project, Dutch Research Institute for Transitions (2022). *Just arenas guide for designing collaborative spaces for just sustainability transitions* (No. 822357). https://drift.eur.nl/publications/just-arenas-guide-for-designing-collaborative-spaces-for-just-sustainability-transitions/

Aim: This guide shows how to design and facilitate a collaborative process for accelerating transitions towards more just and sustainable cities, through the creation of a space where translocal learning, community building and transformative action are combined. This space is called a "just arena".

Context: The guide draws from the experience of the EU-funded UrbanA project, which organised a transition arena process. As part of this, communities in European cities mobilised in the face of climate breakdown and the global pandemic to transform systems such as energy, food, housing, social security and local democracy.

Method: Just arenas are based on 5 conceptual building blocks: 1. Sustainability and justice as orienting principles 2. Transitions and transformative innovation 3. Governance and co-creation 4. Trans-locality 5. Matter of care. According to the first two principles, the idea of just arenas draws from transitions research, an interdisciplinary field of research that focuses on processes of long-term structural transformation of societal systems. As illustrated in the picture below (Figure 14), transitions involve parallel processes of build-up and breakdown, taking place over several decades.

Figure 14: X-Curve: transitions as iterative processes of build-up and breakdown over a period of decades

Figure 3: Transitions as iterative processes of build-up and breakdown over a period of decades. Also conceptualized as "the X-Curve".[6]

Source: X-CURVE booklet. A sensemaking tool to foster collective narratives on system change (Silvestri, Diercks & Matti, 2022)

The third principle refers to governance and co-creation and draws from transition management approaches, and the related theories of social learning, complex systems, sustainability science and network governance.

The final principle on matter of care refers to activities to maintain and repair the web of live. It manifests in the way time is created for informal encounters as a community; and the way it makes the invisible and marginalised visible and heard.

Key messages:

The guide provides useful case studies about how to implement a just arena. Some interesting experiences are highly relevant to designing just transition processes. We list some examples below.

- Creating a diverse group of participants. It is important to consider who to involve and when.

- Building communities of practice (CoP). The authors frame a CoP as having a clear common ground among participants. Moreover, they distinguished different types and levels of engagement within this CoP, such as organisers, fellows of the arena events, participants of arena events, followers and the policy group. Additionally, there are different types of activities within the CoP, such as community conversations or side events.

- Tips for organising and facilitating workshops. The guide suggests workshop formulas that were useful for them, as well as many action research and other participatory methods contributing to procedural justice.

- Using digital and open knowledge platforms for community building.

4   Transitions management, guides and toolkits

This section reviews frameworks, guides and toolkits for managing transitions. Transitions occur within complex adaptive societal systems and can result in fundamental nonlinear changes in society. Important dimensions to consider when managing a transition include: social inclusion, distributional impacts, and intention. Social dialogue is an essential element of just transitions. Sector specific approaches are often required.

4.1   Botta, E. OECD (2018). *A review of "transition management" strategies: Lessons for advancing the green low-carbon transition* (p. 64). https://www.oecd.org/greengrowth/GGSD_2018_IssuePaper_Transition_Management.pdf

Aim/context/method: This report discusses expected changes associated with a transition to low carbon and synthesizes lessons learnt from various countries.

Key messages:

- A sector-specific approach to a low-carbon transition is necessary as not all sectors will be impacted in the same way.

- A suite of policy instruments will be necessary to facilitate workers relocation across sectors.

- The workforce of both extractive industries and energy utilities (two of the most negatively impacted sectors) is primarily composed of men. In contrast, the renewable energy industry (which is expected to grow under a low-carbon scenario) is composed of a relatively more gender-balanced workforce. This means female employment may increase in the traditionally male-dominated energy sector.

- There is some evidence indicating that older workers are overrepresented in "carbon intensive" industries in certain OECD countries.

- The impact of the transition is likely to be geographically concentrated. Locations where job loss occurs may not align with locations of new "green" jobs.

- "Available evidence suggests that most green jobs will simply require a "topping up" of existing skill sets."

4.2   Brookes, H., McVeigh, P., & Wilson, D. (2020). *A guide to local and regional recovery and reimagination*. Economic Development New Zealand, MartinJenkins and Cities and Regions NZ. https://www.economicdevelopment.org.nz/guide-to-local-and-regional-economi

Aim: The aim of this guide is to help economic development professionals in New Zealand successfully lead their region through the COVID-19 crisis.

Context: COVID-19 crisis

Key messages:

The guide contains three stages, each consisting of three steps.

- Leadership

    o   Convene an economic crisis leadership team

    o   Partner with emergency management institutions

    o   Create a communications framework

- Strategy

  - Review of economic strategies, plans and global trends

  - Build response and recovery scenario(s)

  - Develop a monitoring and evaluation framework

- Action

  - Response

  - Recovery

  - Resilience & reimagination.

4.3 Montmasson-Clair, G. Trade and Industrial Policy Strategies (TIPS). (2021). *A policy toolbox for just transitions [Working paper].* https://www.tips.org.za/research-archive/sustainable-growth/green-economy-2/item/4152-a-policy-toolbox-for-just-transitions

Aim: To provide a policy toolbox for just transitions.

Context: Climate change.

Key messages:

- A key aspect of just transition planning is determining the range of beneficiaries. At one end, workers (and possibly communities) directly impacted by a transition would be considered. At the other end of this continuum are more inclusive approaches that consider not only those directly impacted by a transition but also those indirectly affected. This inclusive approach is sometimes extended to include society as a whole; caution is recommended though as such an approach can dilute the focus on vulnerable stakeholders. The authors argue that all vulnerable stakeholders who may be directly or indirectly impacted by a transition should be the focus on just transition planning.

- A second key aspect of just transition planning is the degree of ambition/action associated with the transition. Three types of transitions can be identified along a spectrum of low to high ambition: managerial reform, structural reform, and transformation.

- Transitional justice can be grouped into three dimensions: procedural justice, distributive justice, restorative justice. The authors argue that a just transition is only effective when all three dimensions of transitional justice are addressed.

- A fundamental challenge of transitions is that often the costs are socialised while the benefits are privatised.

4.4   CSIS and CIF. (2021). *A framework for just transitions. Just Transition Initiative.* https://justtransitioninitiative.org/wp-content/uploads/2021/01/Framework-for-Just-Transitions_Download.pdf

Aim: To provide a framework for just transitions

Context: Climate change poses an unprecedented threat to life on earth and requires significant economic and social transformations.

Key messages:

This framework highlights three key dimensions of just transitions:

- ***Social inclusion*** refers to the individuals and groups that are involved in decision-making processes related to a transition. At one end of the continuum, specific stakeholders are involved in some aspects of the transition process. A more comprehensive approach to social inclusion ensures a diverse range of stakeholders are included and empowered throughout the transition process.

- ***Distributional impacts*** refers to the fair allocation of benefits and harm associated with transitions. A more focused view of distributional impacts concentrates on the direct impacts of a transition (e.g., workers in specific sectors who may lose their job). On the other end of the spectrum, distributional impacts are viewed more broadly and encompass impacts across many sectors and groups.

- A third, cross-cutting element of just transitions is ***intention***. This relates to the underlying vision of the transition. At one end of this spectrum is the "reform" approach, and at the other end is the "transformation" approach. The reform approach seeks to bring about change through the existing social and economic structures, while the transformation approach seeks to transform existing political and economic structures so that they align with sustainable development and social equity.

4.5   European Environment Agency. (2019). *Sustainability transitions: Policy and practice (Publication No. 09/2019).* https://www.eea.europa.eu/publications/sustainability-transitions-policy-and-practice

Aim: To explore the practical implications of transitions research for policy and practice.

Context: Global.

Method: The authors draw on historical evidence and case studies.

Key messages:

- Transitions are non-linear, society-wide processes, with a central role for bottom-up processes of innovation, experimentation, learning and networking.

- Achieving the EU's long-term sustainability objectives will require a fundamental transformation of core societal systems.

- It is important to acknowledge multi-causality and systemic causes (rather than just focusing on linear cause-effect principles). In a policy context, this means shifting from targeted policies towards integrated and systemic policy frameworks.

- "Addressing increasingly globalised environmental challenges will require a functioning system of global governance with shared commitments." Decision-making processes at the global scale are frequently slow and enforcement mechanisms are often lacking. "These reflections suggest that a purely hierarchical, top-down approach to achieving sustainability objectives will not work."

- The authors hold that the role of government is to enable society-wide transformation.

- The report presents 10 main messages for policy.

  - Promote experimentation with diverse forms of sustainability innovation and build transformative coalitions.

    - Innovation policy could be broadened beyond technology to also address infrastructural, social and business model innovation.

  - Stimulate the diffusion of green niche innovations

    - Uptake of innovations in business could be supported using funding instruments, regulations and direct infrastructure investment.

  - Support the reconfiguration of whole systems, phase out existing technologies and alleviate negative consequences.

    - Important to promote synergies between multiple innovations

  - Leverage and strengthen the role of cities in sustainability transitions.

    - Cities are hubs for innovation and experimentation; they have a key role to play in sustainability transitions.

- ○ Reorient financial flows towards sustainable and transformative innovations

  - ■ Greater investment in sustainability-oriented research and experimentation is needed.

- ○ Promote clear direction for change through ambitious visions, targets and missions.

  - ■ Ambitious long-term visions, targets and missions are essential to guide transitions.

  - ■ Short-, medium- and long-term targets are important for measuring progress.

- ○ Align policies between different domains to improve policy coherence for transitions

  - ■ Transition processes are influenced by policies in a range of domains. Policy coordination and policy integration are two key strategies for achieving coherence.

- ○ Promote coherence of actions across EU, national regional and local governance levels

  - ■ Sustainability transitions involve actions at multiple levels of governance. Coordination between all levels of governance is key.

- ○ Monitor risks and unintended consequences and adjust pathways as necessary.

  - ■ Transition processes are highly unpredictable, open-ended, and complex.

  - ■ Transitions can have unintended consequences. It is important to continuously identify and evaluate any risks associated with a given transition.

- ○ Develop knowledge and skills for transitions governance and practice

  - ■ Effectively supporting sustainability transitions requires fundamental changes in the knowledge system supporting governance.

4.6   Hussey, S. (2022). *Future skills for engagement practitioners.* IAP2 - International Association for Public Participation.

Aim: Identify fundamental challenges that face community engagement practitioners

Context: Australia.

Method: Research & interviews

Key messages:

- The concept of community engagement does not have an agreed upon definition.

- In the context of top-down decision making, legally requiring community engagement often does not lead to successful engagement outcomes.

- Major challenges facing engagement practitioners include:

    o A disconnect between engagement methodology and practice

    o The need for internal alignment within organisations

    o A lack of understanding on what community engagement is

    o The need to address and increase equity in public decision-making.

- It is important for engagement activities to have values-based outcomes.

4.7   International Labour Organisation (ILO). (2015). *Guidelines for a just transition towards environmentally sustainable economies and societies for all.* https://www.ilo.org/wcmsp5/groups/public/@ed_emp/@emp_ent/documents/public ation/wcms_432859.pdf

Aim: In this document the International Labour Conference presents conclusions on sustainable development, decent work and green jobs in the context of just transitions.

Context: Providing advice to governments and social partners on developing a policy framework for just transitions.

Method: International conference

Key messages:

- Important building blocks of sustainable development include: social dialogue, social protection, rights at work and employment.

- Sustainable development encompasses three important dimensions: economic, social and environmental.

- It is important to consider the greening of economies, enterprises and jobs in the context of sustainable development and poverty eradication.

- Sustainable development is only possible with the active engagement of governments, employers and workers.

- Addressing employment challenges is central to a just transition.

- Ensuring skill development policies align with the future expected job market is important.

4.8   Just Transition Toolbox. (2022). *Just transition toolbox for coal regions.* (2022). Just Transition Toolbox. https://www.coaltransitions-toolbox.org/

Aim/context: To present the most important aspects of a just transition for coal regions.

Method: The insights for this toolbox were largely drawn from experiences of transitions in coal regions in Europe.

Key messages:

- A just transition should combine the goals of environmental sustainability, social equity and economic prosperity.

- The toolbox is built around five main themes:

  - Developing strategies for a just transition in coal regions

    - Effective transition strategies combine short-term goals with the long-term goal of carbon neutrality.

  - Designing effective governance models

    - The governance of regional transitions away from coal mining and coal-based energy generation is a complex process requiring collaboration from multiple actors.

    - Effective governance encompasses the following principles: transparency, participation, rule of law, equity and inclusiveness, effectiveness and efficiency, and accountability.

    - The viewpoints and priorities of marginalised groups should be incorporated in transition policies.

  - Making the shift from fossil to renewable energy

- The energy system of the future will ideally align with: environmental sustainability, energy security and energy equity.

  ○ Decarbonising energy-intensive industries

  - Energy-intensive industries account for about 25% of total CO_2 emissions globally and therefore play an important role in the transition.

  ○ Paving the way to new business opportunities and sustainable employment

  - It is important to provide workers with skills for future jobs.

- There are many different perspectives on just transitions. Four main approaches are described below.

  ○ Status quo transitions

  - This approach does not seek to change existing rules. Status quo transitions tend to focus on the benefits for businesses and consumers, and largely view a just transition as one that creates new employment.

  ○ Managerial reform transitions

  - While aiming to achieve greater equity and justice than a status quo transition, a managerial reform largely seeks to accomplish a just transition within the existing economic and political system.

  ○ Structural reform transitions

  - This approach calls for changes to governance structures that expand citizen participation.

  ○ Transformative transitions

  - This approach seeks to transform (or even overhaul) existing economic or political systems. Moreover, transformative transitions "promote alternative development pathways that aim to overcome the primarily growth oriented economic system."

- Important to align social and economic development goals. A properly managed transition has the potential to lead to new and better employment opportunities.

4.9   Just Transition Centre and The B Team. (2018). *Just transition: A business guide*
         https://bteam.org/assets/reports/Just-Transition-A-Business-Guide.pdf

Aim: To give operational advice to companies on how to implement a just transition. The focus of the guide is on ensuring a just transition for a company's workers and the communities where the company operates.

Context: Global, climate change, business focus

Key messages:

- A just transition is defined as: "an economy-wide process that produces plans, policies, and investments that lead to a future where all jobs are green and decent, greenhouse gas emissions are at net zero, poverty is eradicated, and communities are thriving and resilient."

- For companies the goal of a just transition is to: reduce emissions and increase resource productivity in a way that retains and improves employment, and maximises positive effects for workers and local communities.

- Companies can support communities in transition through: funds, supporting skills training and working with local government and other employers to create new jobs and improve existing jobs.

- There are several opportunities associated with transitioning. For example, companies that have strong climate targets and good labour practices will likely have a competitive advantage in recruitment and retention. Moreover, strong climate targets and good labour practices can provide reputational benefits leading to increased customer loyalty and brand recognition.

- A just transition at the company level involves three stages of action:
  - Engage
    - Social dialogue between employers and workers and their unions, along with a range of stakeholders, is foundational for a just transition.
    - The ability to organise and collectively bargain is essential for giving workers a meaningful voice in the planning process.

- Plan

    - Plans should result in the net creation of decent jobs (i.e., jobs with fair income, security in the workplace, social protection and the effective right to organise and collectively bargain). Providing workers with opportunities for reskilling and redeployment is also important.

    - Long-term planning and worker retraining/reskilling is essential for being prepared for any new climate regulations.

- Enact

    - Delivery of company plans should go alongside regular monitoring, reporting and social dialogue.

4.10 Just Transition Commission, Scottish Government. (2022). *Making the future—Second Just Transition Commission: Initial report*. https://www.gov.scot/publications/making-future-initial-report-2nd-transition-commission/pages/5/

Aim: To set out strategic priorities to ensure the decarbonisation of Scotland's economy is delivered fairly.

Context: Scotland. Most of the report focuses on four sectors: energy, buildings and construction, transport, agriculture and land use.

Key messages:

- Commissioners were guided by five principles when setting out priorities: urgency, clarity, credibility, justice.

- Key priorities include:

    - **Close the investment gap.** The success of a just transition depends on delivering high quality investment to: create highly-skilled, secure, well-paid jobs; tackle inequality; and build an innovative industrial base and more resilient social and physical infrastructure. Increased investment "will ultimately stabilise the public finances in the long term."

    - **Establish industrial planning for the economy of the future.** A whole system transformation will be required to meet the challenges of large-scale decarbonisation, the cost-of-living emergency, and the climate emergency. This transformation will require a new approach to industrial planning, and goes

beyond a narrow focus on "green jobs". Workers, communities, industry and business will all require support through this process. Tangible, annual milestones are essential.

- **Tackle inequalities at every level.** Policy development should prioritise engagement with the most marginalised groups. In addition, it is important to ensure decarbonisation policies do not result in negative spillover effects to other countries.

- **Measure progress to secure implementation.** A robust monitoring and evaluation framework for assessing progress on Just Transition Outcomes is essential.

4.11   Krawchenko, T. A., & Gordon, M. (2021). How do we manage a just transition? A comparative review of national and regional just transition initiatives. *Sustainability*, *13*(11), 6070. https://doi.org/10.3390/su13116070

Aim: This paper identifies and compares strategies, policies and practices that are currently being implemented to manage a just transition across 25 countries and 74 regions.

Context: Global, climate change.

Method: Literature review.

Key messages:

- Managing a just transition is a multi-level government challenge requiring integration across policy areas.

- The authors found that in many cases economic development strategies were poorly integrated with workforce development planning.

- Proactive initiatives are needed. Often policies in support of a transition have been adopted after the transition is already underway.

- Of the just transition initiatives they examined, jobs-focused and environment-focused initiatives were the most common; society-focused initiatives were less common.

- They identify three implementation gaps.

  - Land management is a key part of the transition process. However, land use is rarely seen as an important policy lever for managing a just transition.

- Social security systems have the potential to facilitate a just transition but are currently an underused policy mechanism.

- Direct funding for community level economic development was not common among the regions the authors examined.

- Finally, accountability mechanisms for tracking, measuring and reporting on the effectiveness of policy instruments in addressing justice and equity is fundamental. These accountability mechanisms should encompass distributional, procedural, and recognitional justice.

4.12   Loorbach, D., Frantzeskaki, N., & Huffenreuter, R. L. (2015). Transition management: Taking stock from governance experimentation. *The Journal of Corporate Citizenship*, *58*, 48–66. doi.org10.9774/GLEAF.4700.2015.ju.00008

Aim: This paper summarises advances in the field of transition management.

Context: Global.

Method: Literature review.

Key messages:

- Transition management examines complex adaptive societal systems that go through fundamental nonlinear changes in cultures, structures, and practices.

- Transitions are complex; they cannot be fully comprehended or steered directly. Instead, transitions can be viewed as "patterns of change that can be anticipated."

- Transitions provide opportunities for "accelerated reorientation towards sustainability."

- A central concept in the study of the transitions is the idea of regimes. Overtime dominant and locked-in configurations emerge that are dynamically stable. These regimes are often reinforced by positive feedback loops: transition to a different regime is often difficult, requiring fundamental systemic change. In other words, persistent challenges are embedded in dominant regimes within complex societal systems.

- It is important to realise that small-scale, everyday individual actions have a cumulative impact on a societal system. We must shift from passively observing societal problems to realising that our actions have an influence.

- Empowering pioneers and innovative niche players is key.

- Small-scale actions should be directed to areas in which a small intervention can 'tip' a system toward larger change, or changes that can cascade toward broader system innovation.

- It is important to acknowledge existing power relations along with path dependencies.

4.13   Loorbach, D., & Rotmans, J. (2010). The practice of transition management: Examples and lessons from four distinct cases. *Futures, 42*(3), 237–246. https://doi.org/10.1016/j.futures.2009.11.009

Aim: This paper presents four different cases of transition management to highlight advantages and difficulties of managing transitions.

Context: Netherlands

Method: The authors draw insights from four different cases of transition management.

Key messages:

- Managing transitions requires:

  o   Dealing with uncertainty

  o   Being prepared for the unexpected.

  o   Keeping options open and dealing with fragmented policies

  o   Having a long-term perspective

  o   Being aware of influences at different scales (e.g., local, regional, global) and finding solutions at the right scale

- Frontrunners (pioneers, niche players) are key to transition processes. Supporting frontrunners while also giving them space to develop and implement innovative ideas is essential.

- It is important for the group of frontrunners to be diverse and representative.

Tension can form between regular policy and the transition shadow trajectory. This can result in the regime resuming a command-and-control mode. Consequently, free space created for frontrunners can be reduced.

4.14   NZCTU. (2010). Just transition: A working people's response to climate change. https://union.org.nz/just-transition/

Aim: To provide advice for ensuring a just transition for working people in Aotearoa.

Context: Climate change, New Zealand.

Key messages:

- This guide presents three central pillars to achieving a just transition:

  - **Industry policy** that supports investment and diversification of New Zealand's economy in ways that adapt to, or take advantage of, developments like climate change.

  - **Employment law** that strengthens collective bargaining so that benefits of change and productivity growth can flow through into wages and better job security.

  - **A capable state** including a social security system that provides security and training for workers who lose their jobs.

- The involvement of Māori is essential to any meaningful just transition in Aotearoa. It is important to ensure that the Māori world view and values are incorporated as we move forward.

- Engaging working people

  - Participation of working people and their unions in decision-making processes from the beginning is essential. It is important for working people to have a meaningful voice throughout the process, and for their participation to be supported.

  - The authors recommend a return of the "Employment Relations Education Contestable Fund" to "help build capacity of workers to engage in just transition planning"

  - It is important to enable working people to manage the change process for themselves (i.e., "active labour market policies").

  - Increased support for workers in transition is also important.

- The more we are able to plan for change, the higher our likelihood of securing better outcomes. Planning and proactively negotiating our future is better than reacting to one imposed on us.

- Economic diversification is important.

- Businesses who have benefited from fossil fuel extraction have a "social obligation to reinvest in the transition for the workforce and communities that have supported these industries."

- A strong emphasis on market-based climate mitigation policies (e.g., fuel taxes) will disproportionately impact low-income working people.

4.15   OECD. (2011). *Tools for delivering on green growth.*
        https://www.oecd.org/greengrowth/48012326.pdf

Aim: This document outlines a range of policy options for driving green growth.

Context: Global.

Key messages:

- There are a range of constraints which can prevent green growth.

  - ***Low overall economic returns*** can constrain the expansion of new or innovative production techniques or technologies. Market failure and market imperfection can both contribute to constraining green growth. Low economic returns to R&D is an example of a market failure, while network effects and bias towards existing technologies are examples of market imperfection.

  - ***Low appropriability of returns***. This is where market and government failures prevent people from capturing the full value of improved environmental outcomes and efficiency of resource use. Fossil fuel subsidies are an example of a government failure, while failing to reduce air pollution is an example of a negative externality.

- The strength of various constraints depends on the level of development, socio-economic context, and existing economic and environmental policy settings.

- Resolving government and market failures should be the focus in places where human capital is relatively abundant and infrastructure relatively well-supplied.

- Regulatory uncertainty is likely to be a constraint in both places with low and high development.

- The goal should be to integrate green growth into policy processes, rather than create stand-alone policy documents or agencies.

- Strategic priorities for integrating green growth into economic policy:

- Assess the enabling environment (e.g., policy process, public dialogue)

- Identify key actors (e.g., government actors, opinion formers)

- Identify opportunities to shape organisational incentives

- Identify awareness and knowledge gaps

- Identify analytical tools to be adopted and develop relevant training

- Address options for policy influence

- Policy initiatives should be based on the following criteria: cost-effectiveness, adoption and compliance incentives, and ability to cope with uncertainty.

- Many environmental challenges may be best addressed through a combination of instruments. However, overlapping policies (i.e., those that cover the same individuals, firms or public administrations) may be counterproductive or lead to unexpected outcomes (e.g., the combined effect of two policies may lead to a vastly different outcome compared with the outcome of each policy acting alone).

4.16   Sharman, A. (2021). Taking a just transition approach to practical decision making. *Policy Quarterly, 17*(3), Article 3. https://doi.org/10.26686/pq.v17i3.7131

Aim: To provide concrete guidance in achieving a just transition in a practical sense. The article presents two frameworks (one at the project level and one at the organisational level) for assessing alignment with a just transition.

Context: Energy, New Zealand.

Key messages:

- A just transition aims to achieve emissions reductions while at the same time improving people's lives through better work opportunities, conditions and outcomes.

- Achieving a just transition in the energy space is important because:

  - Energy emissions comprise over 40% of New Zealand's total net emissions.

  - Inequality is high in New Zealand: 70% of household wealth is held by the top 20% of households.

- All those working in the energy sector have a responsibility to work towards a just transition. Although the transition to a low-emissions future is primarily policy driven, the business community and civil society also have a fundamental role to play.

- Important elements of a just transition at a ***project level*** include:

  ○ Emissions reduction goals

  ○ Commercial opportunity

  ○ Supporting gender equality

  ○ Iwi and community involvement and benefits

  ○ Poverty eradication

  ○ Strategic fit

  ○ Workers

- Organisation level

  ○ It is important for organisations to consider the following elements when aligning itself with the goal of a just transition.

    ■ Emissions reduction goals

    ■ Dialogue and engagement

    ■ Taking responsibility

    ■ Iwi and community involvement

    ■ Action

    ■ Future focus

  ○ Each of these elements can be assigned to one of four groups (unaware, aware, building capacity, integrated into decision making). This can serve as a starting point for further discussions and provides a framework for measuring the extent to which just transition principles are incorporated into decision-making processes within an organisation.

- The project level and organisation level frameworks are intended to work together. The organisational scale framework is intended to ensure "that there is alignment between project decisions and the overarching goals and direction of the organisation."

4.17   The University of Queensland and University of Southern Queensland. (2008). *Building resilience in rural communities toolkit.* https://learningforsustainability.net/pubs/Building_Resilience_in_Rural_Communities_Toolkit.pdf

Aim: To provide ideas and information that could be included in new or existing social programmes or workshops in communities to enhance people's resilience.

Context: The project was conducted in collaboration with the community of Stanthorpe (a rural town in Australia). Although the toolkit focuses on the Stanthorpe community, the ideas and information they provide are relevant to other communities seeking to build resilience.

Method: Interviews with Stanthorpe residents.

Key messages:

- Rather than a fixed quality that is either present or absent within a person or group, resilience can be viewed as a dynamic process that can vary across circumstances and time.

- The toolkit describes 11 resilience concepts. We present key messages from a selection of these concepts below.

  - Social networks and support

    - Strong social networks can provide emotional and practical support, information, and resource sharing.

    - Some theorists view a community not as a place but as a network of meaningful social connections.

    - Closely knit communities may not always produce uniformly beneficial outcomes (e.g., newcomers or subgroups may be excluded).

  - Positive outlook

    - People who believe more strongly in their capabilities tend to show greater persistence in their efforts.

  - Learning

    - The ability to reflect and learn from previous experiences is valuable especially when facing new challenges.

- - Listening to survivors and storytelling are both ways of learning from others' experiences.

    - ○ Diverse and innovative economy

        - ■ Important for businesses to cooperate rather than compete to bring economic welfare to an area.

    - ○ Leadership

        - ■ A transformational leader "helps their followers to achieve greater heights by addressing higher needs and aspirations, and by sharing and engaging them in a mission or vision that transforms their perspective or outlook."

4.18   Transition Network team. (2016). *Essential guide to doing transition.* https://transitionnetwork.org/resources-essential-guide-transition/

Aim: Provide advice on achieving just transitions.

Context: Global.

Method: Based on previous experiences of transitions

Key messages:

- Principles that guide the work of the Transition Network team include:

    - ○ Inclusivity and social justice

    - ○ Freely sharing ideas and power

    - ○ Collaborating and looking for synergies

        - ■ Encouraging positive visioning and creativity

- A successful transition involves a balance between: the head (acting on the best information available), the heart (working with compassion), and hands (turning shared visions and ideas into reality).

- Seven essential ingredients for doing Transition:

    - ○ Healthy groups. Learning how to work well together.

        - ■ Co-creating a group culture based on trusting, caring and compassionate relationships

- Vision. Imagining the future you want to co-create.

    - Ideas include: urban agriculture, participatory democracy, local economy.

- Involvement. Involving a diverse range of individuals and groups.

    - Involving the wider community and developing relationships beyond friends and natural allies.

    - Important principles for ensuring transition groups are diverse and inclusive include: listening, meeting everyday needs, deepening inclusion, building bridges, celebration, exploring rank and privilege, embedding diversity.

- Networks and partnerships. Collaborating with others.

    - Successful collaborations can enable groups and individuals to: meet new people, develop new opportunities, ideas and solutions, scale up work to address challenges, and develop joint approaches to co-creating impactful long-lasting solutions.

    - Ways for working in partnership: sharing information, asking good questions, deciding together, harnessing "the power to convene", and delivering projects together.

- Practical projects. Inspiring others and building new infrastructures.

    - Making tangible changes to the place where you live.

- Part of a movement. Connecting with other transition leaders.

- Reflect and celebrate.

    - Reflecting on how things are going can help any conflicts be addressed early on.

    - Celebrating is a good opportunity to bring people together and to re-inspire people for future projects.

5   International case studies

International case studies reviewed here about just transitions are mainly concerned with transitions in North America and Europe. The literature ranges from attempting to draw out

principles of just transitions from case studies of historical transitions, to attempting to understand the conditions that may help just transitions occur or may foster and strengthen ideas of just transitions between and within actors. This section contains academic journal articles and one report for the OECD. A key theme from the literature is the extent to which the idea of just transition has moved beyond its foundation in the labour movement and the extent to which this idea can be more deeply understood, developed, and applied to the diverse drivers of climate change.

5.1   Hatch, C. J., Tremblay, D.-G., & Cazabon-Sansfaçon, L. (2017). The role of social actors in advancing a green transition: The case of Québec's cleantech cluster. *Journal of Innovation Economics & Management, 24*(3), 63–87. https://doi.org/10.3917/jie.024.0063

Aim: 'The purpose of this paper is to investigate the role of a local cleantech cluster as a mechanism in addressing the institutional challenges of a green transition, with a focus on how local cluster dynamics and intermediaries shape the position and collective mobilization of actors.'

Context: Écotech Québec, an intermediary organization that links stakeholders within Québec's energy ecosystem and establishes conditions for knowledge sharing.

Method: 'Research is based on a review of the literature as well as detailed semi-structured interviews with Écotech actors representing the full diversity of the cleantech industry, conducted in 2016 and 2017.'

Key messages:

- This paper suggests the importance of intermediary actors in 'creating the local institutional conditions that foster the multi-dimensional aspects of a transformation to a green economy: economic, social and environmental.'

- In a traditional intermediary role:

  ○ Écotech introduces actors, allowing them to develop relationships and collaborate both within and beyond the intermediary.

  ○ Écotech mobilises stakeholders to develop innovative frameworks

  ○ 'Écotech supports the commercialization of cleantech by linking producer firms with the end-user market and promoting its adoption and use'

- In a non-traditional role:

    ○ By fostering collaboration between diverse actors, the process helps to position actors regarding the green transition. Through interaction with unions, workers, NGOs etc, traditionally apolitical actors take on a political stance geared towards social justice.

    ○ Actors involved in the process become collectively 'mobilised in the fight against climate change.'

5.2   Mayer, A. (2018). A just transition for coal miners? Community identity and support from local policy actors. *Environmental Innovation and Societal Transitions, 28*, 1–13. https://doi.org/10.1016/j.eist.2018.03.006

Aim: To understand local policy actors' views about transition policies for displaced coal miners in Colorado and Utah during the era of energy transition. The purpose was to understand which policies were likely to receive support and who should be responsible for financing and effecting them.

Context: Colorado and Utah.

Method: A survey was distributed to local policy actors in Colorado and Utah. The survey asked participants to rate policy options on a scale from strongly oppose to strongly support. The survey also asked questions such as 'who should pay for x?' with discrete options for answers. Each survey contained a sentence called an 'accountability frame' whereby the decline of coal was attributed to a certain variable; the rise of alternate fuels, government regulations, or a combination of both. These frames were randomly distributed among the surveys. Each survey also attempted to characterise 'economic identity' by asking respondents to rate the importance of coal to their communities. Survey respondents were also asked to provide their political identity.

Key messages:

- The policy options in the survey were retraining, relocation of miners, and pension protection. Most policy actors strongly supported all three.

- The accountability frames did not appear to influence which policies received support, implying that who policymakers blame for the decline of coal did not have a large influence on the policies they supported. However, implying multi-causal factors were behind the decline of coal was slightly more likely to engender support for JT policies.

- Economic identity based on fossil fuel extraction did not appear to increase support for JT policies.

- Moreover, political affiliation or identity did not affect support for policies. This is significant as it shows paths forward beyond partisan binaries.

5.3   Smith, S. Just Transition Centre. (2017). *Just transition: A report for the OECD.* https://www.oecd.org/environment/cc/g20-climate/collapsecontents/Just-Transition-Centre-report-just-transition.pdf

Aim: This report introduces and summarises ideas of just transitions (JT). The authors provide a history and context of JT, introduce the key concepts and principles of JT, identify stakeholders and their roles throughout the JT process, and provide overviews of case studies.

Context: Case studies at the level of international organisations such as the ILO, as well as diverse case studies from New Zealand, Europe, American, India, Colombia, and Australia.

Key messages:

- The JT movement emerged from the labour movement, which continues to have significance in the evolution of the concept through the ILO.

- JT principles:

    ○ Is a system-based change towards sustainability, where governments, business, and workers are the main players that collaborate to produce effective and fair outcomes.

    ○ Is based on foundations of 'decent work' where workers can enjoy rights such as fair income, security, and social protections.

    ○ Has at its core the concept of social dialogue between unions and employers or may also include governments.

- The role of actors is different depending on scale and level.

    ○ for enterprises: restructure, ensure social floor, create new decent jobs, and retrain

    ○ for sectors: promote strong all-round targets, production, and commercialisation of new technology

    ○ at regional and national levels: to play an active role in the formulation of strong climate, public investment into decent jobs, sustainable infrastructure etc.

- Considerations for policymakers:

  ○ Action can be top down or bottom up

  ○ Absence of adequate policies and funds makes JT difficult; assertive action from governments is required.

  ○ Decarbonisation needs to happen rapidly

- Recommendations for policymakers:

  ○ Commit to social dialogue at all levels as an integral part of formulating plans

  ○ Establish plans, strategies, funds for JT, including training

  ○ Provide public and employer support for retraining, reskilling, and formalisation of employment for vulnerable workers

  ○ Invest in low-emissions infrastructure that creates decent jobs

  ○ Ensure that climate related disclosures by companies also include disclosure of employment risks and just transitions plans to address them.

5.4   Vögele, S., Kunz, P., Rübbelke, D., & Stahlke, T. (2018). Transformation pathways of phasing out coal-fired power plants in Germany. *Energy, Sustainability and Society, 8*(1), 25. https://doi.org/10.1186/s13705-018-0166-z

Aim: To understand how existing technology may phase out and which transition pathways are possible. The authors move beyond traditional technological framing of energy transitions to additionally consider economic, social, and political aspects.

Context: Germany coal sector.

Method:

- Multi-level perspective approach (MLP). Elements of a system are assigned levels.

  ○ Landscapes: demographic trends, political ideologies, social values; A landscape changes slowly and is generally independent from the considered system.

  ○ Regimes: reflect the interactions of science, technology, politics, user preferences

  ○ Regimes have a high level of stability, despite the dynamics within a regime resulting from learning effects and other kinds of ongoing incremental changes.

- ○ Niches: systems where radical innovations emerge. Niches are characterised by expectations or visions, the building of social networks, learning and articulation processes.

- Possible transition paths:

  - ○ 'Transformation: The regime changes without recourse to one dominant technology.

  - ○ Technological substitution: The dominant technology is replaced by new radical technologies.

  - ○ De-alignment and re-alignment: Great problems evolve in the regime, multiple niche innovations emerge, the innovation or combination of innovations which suits best comes to dominate the regime.

  - ○ Reconfiguration: The regime does not only change in terms of the used technologies but also in terms of organizational structures.'

Key messages:

- MLP approach allows the authors to trace the evolution of the energy regime in Germany, understanding the social, economic, and technological forces behind the phase out of coal energy. Political decisions at an EU and national level, along with social attitudes, and technological competition from gas, all resulted in the decline of coal in Germany.

- Coal energy is likely to exist within a niche in the future in order to support the transition to gas or renewable, or in order to be a fallback.

- The MLP process may be used to effectively to assess technological transitions in other contexts, in order to understand factors that cause phase-out of existing technologies.

6   New Zealand case studies

The papers in this section are mostly a mixture of transition plans and academic articles looking at climate finance opportunities in Aotearoa New Zealand. The transitions plans all take a different approach to a just transitions; however, all have a comprehensive focus that takes into account economic and social effects of transitions. Furthermore, engagement is an important focus of each plan, with the plans having been created through engagement with the local

community. Relationships with iwi and Māori are central within the plans. In terms of climate finance, there is a focus on changing the enabling environment to encourage increasing investments.

6.1   Hall, D. J., & Lindsay, S. Mōhio Research. (2020). *Scaling climate finance: Forest finance instruments.*
https://www.mohio.co/_files/ugd/e24b0e_2327023cbf8b42a997e8a207aff94eb7.pdf

Aim: 'To explore forest finance instruments that enable opportunities in sustainable and impact-first forestry'

Context: Aotearoa New Zealand

Method: 'Literature review of sustainable finance innovation internationally; localised analysis of the New Zealand context.'

Key messages:

- o Establishment of new forests will become increasingly important in producing climate related benefits, in addition to environmental benefits e.g. habitat for native biodiversity, as well as social benefits such as green jobs.

- o Forest finance instruments will play an important enabling role in creating a more diverse and integrated landscape by mobilising capital for non-conventional forest management systems

- o The policy instruments suggested by this paper are as follows:

    - o Environmental Impact Bond (EIB)

    - o Leveraged Carbon Fund (LCF)

    - o Continuous Cover Forestry Fund ("the Fund")

    - o Green Covered Bond

    - o Climate Risk-Adjusted Loans (CRALs)

    - o Community Funding Programme (the Programme)

    - o Natural Climate Solutions Exchange ('the Exchange')

- o The authors also identify the need to change the enabling environment, including regulatory reform, in order to increase the viability of these instruments. This includes

increasing the range of payments for ecosystems services available and making changes to the NZETS which require a certain percent of NZUs to come from native forest.

6.2   Hall, D., & Lindsay, S. Mōhio Research. (2018). *Climate finance landscape for Aotearoa New Zealand: A preliminary survey.* https://environment.govt.nz/publications/climate-finance-landscape-for-aotearoa-new-zealand-a-preliminary-survey/

Aim: This report gives a summary and overview of the state of climate finance in New Zealand and internationally. The report gives several recommendations for steps that the government may take in order to create an enabling environment to allow effective climate finance flows in New Zealand.

Context: New Zealand.

Method: Literature review.

Key messages:

- The report seeks to find ways to achieve "blended finance for integrated impacts." 'Finance is blended in the sense that public investments are used to catalyse private investments (or vice-versa); and integrated in the sense that finance is directed towards combined social, environmental and economic benefits.' This approach capitalises on the wide variety of actors that the government can coordinate in order to produce climate outcomes.

- The report makes the following recommendations to achieve an enabling environment (Figure 15):

Figure 15: Ten recommendations for creating a more facilitative enabling environment for climate finance in New Zealand

Recommendations	Description
1: Disclosure and Reporting	More robust disclosure and reporting of climate-related financial risks and liabilities in the public and private sectors.
2: Climate Finance Tracking	Selective tracking of climate finance flows within New Zealand to identify baselines and opportunities.
3: Climate-friendly Principles for Existing Institutions	The adoption of climate-friendly investment principles by existing entities and organisations across the investment spectrum.
4: Pipeline of Climate-aligned Projects	Establish a pipeline of investable projects to enhance transparency and to support long-term investment planning.
5: Structural Realignment to Climate Objectives	Address structural and policy misalignments that incentivise high-emissions activities and that dilute or counteract enabling factors for climate finance.
6: Climate Change Leadership	Support climate leadership across government and non-governmental sectors, whether by administering or enabling climate-aligned activities, or through adaptive leadership.
7: Alternative Organisational Forms	Encourage alternative organisational forms, especially in the social enterprise sector, to encourage companies and entities that take an integrated approach to business activities.
8: Project-oriented Intermediaries	Support project-specific intermediaries that can facilitate finance flows between supply and demand for climate-aligned projects.
9: Green Investment Fund	Explore the potential of a green investment fund as a single national entity to advance multiple aspects of climate finance simultaneously, by functioning as an intermediary, knowledge repository, and champion of climate-friendly principles.
10: Carbon Pricing	Determine a consistent carbon price for policy planning that provides an adequate signal of climate-related risks for short- and long-term investment decisions.

6.3   Hall, D., & Lindsay, S. Mohio Research. (2021). *Scaling climate finance: Biodiversity instruments [Concept Paper*]. http://data.bioheritage.nz/dataset/biodiversity-instruments

Aim: This paper proposes five instruments that could be used to fund biodiversity protection in New Zealand.

Context: New Zealand.

Methods: Literature review, 'combined with a localised analysis of the Aotearoa New Zealand and its unique cultural and biophysical context.'

Key messages:

o Financial innovation could play a catalytic role in reversing biodiversity decline. However, systems change is a necessary precondition for biodiversity financing to occur at scale.

o The suggested instruments are as follows:

   o Hauraki Gulf Blue Bond: 'debt instrument for which the use-of-proceeds are linked to the protection, rehabilitation and enhancement of the mauri (or life force) of the Hauraki Gulf/Tīkapa Moana/Te Moana-nui-ā-Toi. Investors are paid an interest rate on a fixed schedule and will receive their initial investment (principal) upon maturity.'

   o Debt-for-Nature Swaps: 'treated as a risk management tool for banks to alleviate debt-related stress on agricultural borrower and thereby avoid the systemic risk of widespread defaults. A proportion of the debt stock or service is voluntarily cancelled under the agreement, then savings are redirected into biodiversity improvements that reduce the exposure of farms to forthcoming environmental prices and regulations, and enhance their resilience to climate-related shocks.'

   o Paradise Bonds: 'The issuer uses the bond's proceeds to finance land from landowners, which would be retired from agricultural use and returned into natural ecosystems that generate public environmental value.'

   o Regional Biodiversity Fund: 'A closed-end fund to invest in 10–20 companies in mature biodiversity-related markets'

   o Biodiversity Notes: 'Biodiversity Notes are issued by a private entity that raises capital to finance biodiversity efforts… Repayment is not tied to revenue streams from the use of proceeds, rather from the issuer's general business and/or fundraising activities.'

6.4   Litmus. (2021). *Research into partnership approaches for transition planning: Learning from the Taranaki 2050 Roadmap process.* https://www.mbie.govt.nz/assets/research-into-partnership-approaches-for-transition-planning-learning-from-the-taranaki-2050-roadmap-process.pdf

Aim: 'The research purpose is to gain insights to refine and strengthen the Just Transitions Unit/Partnership's role in regional transitions. To undertake qualitative research to learn from the Taranaki experience about what to consider when designing, implementing and supporting partnership approaches with other regions, places, communities or sectors in transitioning to a low emissions economy'.

Context: Taranaki, November 2019 to January 2020.

Method: 'interviewed 31 stakeholders from central and local Taranaki government, NGOs, community, union, iwi, and business'. A literature review was also carried out.

Key messages:

- o Important lessons learned from Taranaki's transition planning:

    - o Having a strong foundational partnership with iwi

    - o Establishing regional partnerships and balancing local autonomy with the national perspective

    - o Having effective leadership and operational structures

    - o Collectively creating a shared and long-term transition vision

    - o Advocating for an equity lens to foster inclusion in a just transition

    - o Having sufficient resource allocation and managing partners' expectations

    - o Clarity of communications and effectively negotiating tension points

    - o Sustaining communication and engagement to maintain momentum

    - o Working efficiently and avoiding repetitive activities

- o The JTP needs to be agile, based on a principles-based way of working

    - o Lead with Te Tiriti o Waitangi

    - o Apply an equity lens

    - o Work in partnership relationships

- o Transparent and open communication

- o Courage to challenge and disrupt.

6.5   MacKenzie, J., Bond, S., & Stephenson, J. University of Otago. (2022). *Stories of Kelso: Experiences of relocation and lessons for planned retreat.* https://ourarchive.otago.ac.nz/handle/10523/12865

Aim: 'to inform our understanding of the impacts and implications of planning for and managing the retreat of communities from hazardous locations'

Context: ex-settlement of Kelso, West Otago. Flooding in the late 70s and early 80s caused its residents to relocate, leaving the settlement abandoned by 1982.

Method: seven semi-structured interviews with twelve ex-Kelso residents. Archival analysis using newspaper articles from 1978-1995, correspondence, and minutes.

Key messages:

The paper observed several lessons in the wake of the natural disasters in Kelso along three themes:

- o Community: importance of maintaining community through the disaster and the relocation process. This involves involving the community in the development of relocation plans; maintain a sense of community through offering to relocate to the same area and maintaining institutions; anticipating risk to community wellbeing ahead of an event.

- o Support: Importance of giving adequate support to residents before, during, and after an event. This includes recognising emotional turmoil of relocation; targeted, rather than ad-hoc, funds for owners facing costs of relocation; anticipating how quickly insurance retreat can occur.

- o Organisation: Importance of adequate organisation. This includes need for a lead agency rather than various agencies with mixed responsibilities; investigating the ability of local authorities to completely extinguish existing use rights in situations of increasing natural hazards.

6.6   Ministry of Business, Innovation and Employment. (2022). *Southland's just transition workplan*. Southland just transition. https://southlandjusttransition.nz/

Aim: Development of a just transition plan for Southland. 'Planning for and managing the social, economic, and environmental impacts of climate change…The process has worked to define the

challenges and opportunities facing the region, assess existing planning documents, and develop an understanding of the region's competitive advantages.'

Context: Southland, New Zealand.

Method: Working with regional leaders and engaging with a consultation process with community over a period of 12 months.

Key messages: The report identified 3 themes where changes will need to occur in order to achieve a just transition:

- o New industries and employment

    - o Clean energy: Southlanders have expressed a strong desire for new industries built on the region's renewable energy advantage.

    - o Land use: Southland's existing strengths in the primary industries, and new opportunities in the sector, can support workers and firms affected by the planned closure.

    - o Aquaculture: Existing regional strategies and community engagements highlighted substantial local opportunities in open ocean aquaculture.

- o Transitioning business and skills

    - o Business transitions: Many local businesses provide goods and services to NZAS. These firms may need support to transition to new sectors or buyers.

    - o Worker transitions: The just transition process needs to focus on education and training for emerging industries, and tools to transition affected workers into new roles.

- o Long-term planning and capability

    - o Long-term planning: Southland's existing long-term plan is well regarded by many in the community. The smelter closure, COVID-19, and changing markets and regulations mean the strategy needs to be refreshed to continue to guide Southland's development.

    - o Community capability building: Building the community's skills to enable more equal participation in long-term efforts to develop an inclusive community, and sustainable and prosperous regional economy.'

6.7   Taranaki 2050 Lead Group, Venture Taranaki. (2020). *Food & fibre: Transition pathway action plan.* https://www.taranaki.co.nz/assets/Uploads/Like-No-Other/Food-Fibre-TPAP.pdf

Aim: To produce a plan to move Taranaki towards a low-emissions economy, taking into consideration that the transition will not simply be economic but will impact all aspects of the lives of Taranaki residents.

Context: Taranaki (2019-2050).

Method: Community engagement; the draft emerged from 29 workshops that were undertaken on 12 transitions topics. Community outreach, surveys, and youth workshops. More than 1,000 people were involved. Following the draft; public consultation at more than 40 locations, as well as online based feedback. This is the co-design process.

Key messages:

- The roadmap identified 12 transition pathways. Some of these pathways were sectors, while others are enablers, and some are a combination of both:

    o   Energy

    o   Food and fibre

    o   Tourism

    o   Māori economy

    o   People and talent

    o   Innovation, research & development.

    o   Infrastructure and transport

    o   Health and well-being

    o   Arts

    o   Environmental sciences

    o   Regulatory

    o   Metrics and evaluation.

- The report takes a unique approach to envisioning each of these pathways.

- o For each, the report identifies a future vision for the sector in 2050 drawn from the public engagement process. This is how the community imagines Taranaki will look in 2050.

- o The report identifies themes for the sector emerging from the co-design process. These are more holistic ways in which transition will occur, incorporating ideas of fairness and balance.

- o Emerging opportunities are more concrete steps towards achieving the vision and incorporating the themes.

6.8   Venture Taranaki. (2020). *Metrics & evaluation: Transition pathway action plan.* https://www.taranaki.co.nz/assets/Uploads/Like-No-Other/Metrics-TPAP-FINAL.pdf

Aim: To identify 'indicators and measuring changes within Taranaki's people, places and sectors to assess progress towards our Taranaki 2050 vision'.

Context: Taranaki, 2019-2050.

Method: Part of the plan is developing the metrics that will be used to measure the success of the Taranaki roadmap. The intention is 'work with the pou and the Taranaki community to build a set of indicators considering local, national and bespoke sources of data.'

Key messages: The approach taken in this report is expressed through the following graphic (Figure 16):

OUTCOMES
- Are Taranaki 2050 regional indicators and outcomes moving toward our desired outcomes statements?
- Annual public-facing update
- Review every 2 years
- Detailed review every 5 years to inform evaluation

GOALS
- Are the Taranaki 2050 Roadmap goals being met?
- Target review every 2 years
- Detailed review every 5 years to inform evaluation

ACTIONS
- How are the Taranaki 2050 actions progressing?
- What do the **inputs and outputs** look like?
- Annual review to adapt work programme and inform strategy and planning
- Future actions collated into a 2050 Roadmap action register every 5 years

EVALUATION
- **Outcomes**: How effectively are our outputs and actions contributing to our goals and outcomes?
- **Process**: Is our planning and implementation fit for purpose and are we partnering effectively?
- Undertaken every 5 years to inform strategy and planning

6.9   Wakatū Incorporation. (2020). *Te Tauihu intergenerational strategy.*
        https://www.tetauihu.nz/#introduction

Aim: To develop a framework and strategy to move Te Tauihu forward.

Context: Te Tauihu, New Zealand.

Method: Engagement with the local community through social media, live events, and workshops. Overall, 25 live events were held, with 1000 people attending. 30,000 were reached through social media.

Key messages: The framework developed through engagement is expressed through this graphic (Figure 17):

Figure 17: Intergenerational wellbeing framework

7   Indigenous views

This section consists mostly of academic journal articles and book sections. One focus of this literature is highlighting differences between Western worldviews and Indigenous worldviews. Indigenous worldviews have much to offer and distinctly contrast with modernist visions of sustainability; indigenous worldviews are relational and view nature as sacred and indivisible from humans. Papers in this section cover a limited number of countries (including New Zealand, the US and Mexico).

7.1   Doyon, A., Boron, J., & Williams, S. (2021). Unsettling transitions: Representing Indigenous peoples and knowledge in transitions research. *Energy Research & Social Science, 81*. https://doi.org/10.1016/j.erss.2021.102255

Aim: To contribute to "the broadening of the conceptual lenses used in transitions research and highlight emerging themes."

Context: CANZUS countries (Canada, Australia, Aotearoa, the US). These countries are settler-colonial states.

Method: Integrative literature review.

Key messages:

- Research that extends beyond Western theorists and human-centred impacts is essential.

- It is important to acknowledge that there are many views and approaches to transitions within Indigenous communities.

- Place-based solutions that reflect local values are important. Connection to land and territory is important to many Indigenous peoples.

- Indigenous peoples often bear the cost of resource extraction projects while the benefits accrue elsewhere.

- Justice is central to transitions. An unjust transition is not sustainable and erodes political support and community buy-in.

- It is important for transition processes to: (i) address colonial legacies, and (ii) not further disenfranchise Indigenous populations.

- For a renewable energy project to be truly sustainable, the project design must reflect "community values, incorporate community control, and incentivise Indigenous ownership."

- In transition processes, it is important to have a stronger focus on self-determination and sovereignty, rather than focussing exclusively on ensuring Indigenous peoples are participating in, or receiving benefits from, transitions.

- For researchers engaging with communities, it is important for them to uphold the following principles: respect, relevance, relationship, and reciprocity.

- This paper identifies several emerging research directions

  - ***Epistemological superiority***. It is important that the knowledge, power, and privilege of researchers is put at the same level as community stakeholders and practitioners.

  - Issues with research methods.

    - Only three of the papers included in their review had Indigenous authors or co-authors.

    - A focus on increasing Indigenous representation in research on transitions without acknowledging systemic barriers to Indigenous participation and leadership in transition practice is unlikely to succeed.

    - Challenges to ensuring Indigenous peoples are fully engaged in sustainability transitions include: historical exclusion from decision-making processes, inadequate resources, colonial biases in research and practice.

7.2   Hall, D. (Ed.). (2019). *A Careful Revolution—Towards a low emissions future*. *Chapter 2*. Bridget Williams Books Limited.

Aim: To outline a tika transition.

Context: New Zealand, climate change.

Key messages:

- For a low-emissions transition to be enduring it must be tika.

  - Tika relates to "that which is right or just"

- Tikanga Māori refers to "a flexible set of values and practices that change and can be adapted over time."

- A breach of tika or tikanga requires a rebalancing or resolution.

- Many tikanga aspects are relevant to transitions:

  - Whanaungatanga (relationships)

    - Relationships are an important part of tikanga Māori.

  - Kaitiakitanga (environmental guardianship)

  - Utu (balance)

    - Central to the concept of Utu is the idea that "for everything given or taken a return of some kind is required."

  - Mana (authority)

    - The mana or authority to make decisions about areas of land or waterways can come from several sources.

  - Tapu (a spiritual aspect to all things)
    - It is important for the Crown to acknowledge that people can have intangible connections to place that need to be respected.

- Three Treaty principles that are particularly relevant to climate change policies are: partnership, active protection and reciprocity.

  - To uphold the principle of reciprocity, it is important for the Crown to assess how processes and policies will provide mutual benefit to Māori and the Crown.

- Māori communities are disproportionately vulnerable to "adverse social and economic conditions and are likely to disproportionately experience the negative effects of climate change."

- A tika transition is one that "upholds tikanga Māori, recognises and addresses Treaty obligations, and takes guidance from international legal standards."

7.3   Hall, D. (Ed.). (2019). *A careful revolution—Towards a low emissions future*. *Chapter 4*. Bridget Williams Books Limited.

Aim: To outline the importance of an intergenerational view.

Context: Global.

Key messages:

- Intergenerational equity is essential. Intergenerational equity refers to the principle that "each succeeding generation will inherit a world in at least as good condition as the one before it."

- Moments like the birth of a child can highlight connections between past, present and future, and encourage us to consider the individual and collective legacies we want to leave behind.

  - In te ao Māori, kaitiakitanga captures the "inherent obligation we have to our tūpuna and mokopuna to safeguard and care for the environment."

- It is important to understand and address systems or structures that perpetuate unsustainability. If we rush to adopt the most ready green "solutions" we risk creating further problems in the future, while failing to address real issues.

- Responsibility for climate change is not shared equally. Energy use is concentrated among the wealthiest in our societies. Those responsible for high emissions rates often hold high levels of political power. There is a real risk that transition processes will deepen social injustice.

- Principles of equality, inclusion and diversity must be central to transition processes. We cannot neglect these principles in our rush to develop and fund new technologies.

- The scale of transformation needed cannot be made by individuals alone. We must address the deep and lasting influence of structural drivers of unsustainable energy use. These include the emphasis placed on GDP and economic growth.

7.4   MacArthur, J., & Matthewman, S. (2018). Populist resistance and alternative transitions: Indigenous ownership of energy infrastructure in Aotearoa New Zealand. *Energy Research & Social Science, 43*, 16–24. https://doi.org/10.1016/j.erss.2018.05.009

Aim: This research paper examines Indigenous led energy transitions in Aotearoa New Zealand.

Context: Aotearoa New Zealand

Method: Critical reading of scholarship on populist resistance and protectionist responses to energy market liberalisation.

Key messages:

- Populism and protectionism could play a role in energy transitions.

- Populism

    o There are many ways of conceptualising populism. One view holds that populism is a political style with three identifying features: (i) it appeals to the people pitched against the elite, (ii) the populist leadership denounces dominant political conventions, and (iii) the leadership promotes a discourse of crisis, collapse or threat.

    o By strengthening a sense of shared identity, populism can inspire change.

- Protectionism

    o The authors argue that backlash against current trade liberalisation is not necessarily a rejection of international exchange, investment or collaboration. Rather, it "reflects a deep unease over the economic model implicitly promoted in the neoliberal order."

    o Indigenous people often form a strong part of this backlash.

- Marginalised communities are likely to disproportionately bear the costs of both the climate transition and its impacts.

- Energy systems are conceptualised as socio-environmental assemblages within Te Ao Māori (the holistic Māori worldwide).

- Practices that enhance mana and mauri are central to Māori sustainability.

- Ideas and practices relating to tikanga Māori differ from one tribal region to another.

- Reciprocal benefits, consultation and partnership are important for current and proposed energy projects in ancestral areas.

7.5   McMeeking, S., Kururangi, K., & Kahi, H. University of Canterbury. (2019). *He Ara Waiora background paper on the development and content of He Ara Waiora*. https://ir.canterbury.ac.nz/handle/10092/17576

Aim: This paper aims to provide background information on the development of He Ara Waiora.

Context: New Zealand.

Method: Hui, discussions, and literature reviews.

Key messages:

- He Ara Waiora is a model for measuring and analysing wellbeing.

- There are two versions of He Ara Waiora.

- In version 1.0, waiora anchors the framework in a conception of human wellbeing that is connected to the four capitals (Natural, Human, Social, Financial/Physical). Waiora is expressed through four tikanga derived values of wellbeing: kaitiakitanga (stewardship of all our resources), manaakitanga (care for others), ōhanga (prosperity) and whanaungatanga (the connections between us).

- In version 2.0, the domains of wellbeing have been expanded. This version endeavours to convey the following principles:

    - Wairua is central to wellbeing

    - A wellbeing model should not be human centric, instead, it should reflect the fundamental importance of the Taiao as a predeterminant of human wellbeing.

    - Māori approaches to wellbeing are relational; the model should reflect this.

7.6   Velasco-Herrejón, P., Bauwens, T., & Calisto Friant, M. (2022). Challenging dominant sustainability worldviews on the energy transition: Lessons from Indigenous communities in Mexico and a plea for pluriversal technologies. *World Development*, 150. https://doi.org/10.1016/j.worlddev.2021.105725

Aim: This research paper addresses the following question: "how do Indigenous worldviews contrast with modernist visions of sustainability in the context of the energy transition?"

Context: Energy transition. The paper focuses on the case of wind energy developments within the territory of three Zapotec communities located in southern Mexico.

Method: The paper uses a combination of: semi-structured individual interviews, focus groups, and participant observations.

Key messages:

- The current definition of sustainable development is: "development which meets the needs of current generations without compromising the ability of future generations to meet their own."

- Ecological modernisation theory argues that "it is possible to reconcile economic progress with the well-being of the environment, and that ecological problems can be resolved through technological and business innovations."

- The concept of sustainable development, alongside the theory of ecological modernisation, promotes a win-win vision of sustainability in which nature, if used productively, sustainably and efficiently, can serve as an endless source of "green growth". This vision stems primarily from a Western materialist, individualist and positivist worldview.

- However, sustainable development is viewed by some as an anthropocentric and ethnocentric concept that "naively assumes the possibility of endless 'sustainable' growth on a finite planet."

- There is growing recognition that Indigenous epistemologies, science and ethics have much to offer to the sustainability debate. Indigenous peoples "offer an approach to sustainability and wellbeing that radically differs from hegemonic Western worldviews."

- There are many Indigenous concepts, and while these Indigenous visions of sustainability and well-being have inherently different and diverse philosophies, they also have many common elements that clearly distinguish them from modernist views of sustainable development. Below we list some differences.

  o Indigenous worldviews are relational; society, nature and spirituality are viewed as interrelated and interdependent elements.

  o Nature is seen as sacred and indivisible from humans in indigenous worldviews, whereas modernist worldviews tend to see nature as a resource (or form of capital) to be used sustainably and efficiently.

- Case study: wind energy developments within the territory of three Zapotec communities

  o Comunalidad is central to Zapotec cultural identity. Comunalidad is governed by the following principles: (1) collaborative forms of work; (2) mutual respect; and (3) reciprocity.

  o Wind energy companies did not uphold the value that local people place on communal decision-making.

- It is important the perspectives of people on the ground are heard and taken into account. This is essential for developing a more diverse and holistic vision as to how an inclusive and sustainable energy transition can be achieved.

8   Index of reviewed documents

2   Conceptual and theoretical literature

2.1   Abram, S., Atkins, E., Dietzel, A., Jenkins, K., Kiamba, L., Kirshner, J., Kreienkamp, J., Parkhill, K., Pegram, T., & Santos Ayllón, L. M. (2022). Just Transition: A whole-systems approach to decarbonisation. *Climate Policy*, *22*(8), 1033–1049. doi.org/10.1080/14693062.2022.2108365

2.2   Abson, D. J., Fischer, J., Leventon, J., Newig, J., Schomerus, T., Vilsmaier, U., von Wehrden, H., Abernethy, P., Ives, C. D., Jager, N. W., & Lang, D. J. (2017). Leverage points for sustainability transformation. *Ambio*, 46, 30–39. https://doi.org/10.1007/s13280-016-0800-y

2.3   Bennett, N. J., Blythe, J., Cisneros-Montemayor, A. M., Singh, G. G., & Sumaila, U. R. (2019). Just transformations to sustainability. *Sustainability, 11*(14), 3881. doi.org/10.3390/su11143881

2.4   Chambers, R., & Conway, G. R. (1991). *Sustainable rural livelihoods: Practical concepts for the 21st century*. IDS Discussion Paper, 296. https://www.ids.ac.uk/download.php?file=files/Dp296.pdf.

2.5   Corais, F., Bandeira, M., Silva, C., & Bragança, L. (2022). Between the unstoppable and the fFeasible: The lucid pragmatism of transition processes for sustainable urban mobility: A literature review. *Future Transportation, 2*(1), 86–114. doi.org/10.3390/futuretransp2010006

2.6   Crawford, I. (2021). *What makes a transition 'just?' A just transition analytic framework.* [Dissertation for a Master of Public Policy, Victoria University of Wellington]. School of Government.

2.7   European Environment Agency. (2017). *Perspectives on transitions to sustainability* (Publication No. 25). https://www.eea.europa.eu/publications/perspectives-on-transitions-to-sustainability

2.8   Hall, D. (2021). Consent in a changing climate. In *The Palgrave handbook of climate resilient societies* (pp. 1–24). Springer International Publishing. doi.org/10.1007/978-3-030-32811-5_114-1

2.9   Healy, N., & Barry, J. (2017). Politicizing energy justice and energy system transitions: Fossil fuel divestment and a "just transition." *Energy Policy*, 108, 451–459. doi.org/10.1016/j.enpol.2017.06.014

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2.11   Henry, M., Bazilian, M., & Markuson, C. (2020). Just transitions: Histories and futures in a post-COVID world. *Energy Research & Social Science*, 68(101668). www.ncbi.nlm.nih.gov/pmc/articles/PMC7351418/

2.12   Loorbach, D., Frantzeskaki, N., & Avelino, F. (2017). Sustainability Transitions Research: Transforming Science and Practice for Societal Change. *Annual Review of Environment and Resources*, 42(1), 599–626. doi.org/10.1146/annurev-environ-102014-021340

2.13   McCauley, D., & Heffron, R. (2018). Just transition: Integrating climate, energy and environmental justice. *Energy Policy*, 119, 1–7. doi.org/10.1016/j.enpol.2018.04.014

2.14   Newell, P., & Simms, A. (2021). How did we do that? Histories and political economies of rapid and just transitions. *New Political Economy*, *26*(6), 907–922. doi.org/10.1080/13563467.2020.1810216

2.15   Scoones, I., Leach, M., & Newel, P. (2015). *The Politics of Green Transformations*. London: Routledge.

2.16   Söderholm, P. (2020). The green economy transition: The challenges of technological change for sustainability. *Sustainable Earth*, 3(1), 6. doi.org/10.1186/s42055-020-00029-y

2.17   Tribaldos, T., & Kortetmäki, T. (2022). Just transition principles and criteria for food systems and beyond. *Environmental Innovation and Societal Transitions*, 43, 244–256. doi.org/10.1016/j.eist.2022.04.005

2.18   White, D., & Leining, C. (2021). Developing a policy framework with indicators for a 'just transition' in Aotearoa New Zealand. *Policy Quarterly, 17*(3), Article 3. doi.org/10.26686/pq.v17i3.7125

2.19   Winkler, H. (2020). Towards a theory of just transition: A neo-Gramscian understanding of how to shift development pathways to zero poverty and zero carbon. *Energy Research & Social Science*, 70. https://doi.org/10.1016/j.erss.2020.101789.

3   Methods

3.1   Compilations of methods and tools for participatory research and practice applicable to sustainability

3.1.1   Allen, W. (2023, June 22). *Learning for Sustainability—Supporting engagement, co-design and adaptation [Knowledge Hub].* Learning for Sustainability. https://learningforsustainability.net/

3.1.2   Allen, W., Kilvington, M., & Horn, C. (2002). *Using participatory and learning-based approaches for environmental management to help achieve constructive behaviour change* (Contract Report LC0102/057). Landcare Research. https://www.landcareresearch.co.nz/uploads/public/researchpubs/mfe_0102-057.pdf

3.1.3   Brouwer, H., Woodhill, J., Hemmati, M., Verhoosel, K., & van Vugt, S. (2016). *The MSP guide: How to design and facilitate multi-stakeholder partnerships*. https://doi.org/10.3362/9781780446691

3.1.4   Chambers, R. (2017). Can we know better? Reflections for development. Chapter 5: *Power, participation, and knowledge: knowing better together*. Practical Action Publishing. https://doi.org/10.3362/9781780449449

3.1.5   Institute of Development Studies. (2023). *Useful methods and ideas*. Participatory Methods. https://www.participatorymethods.org/methods

3.1.6   The University of Kansas. (2022, June 22). *Community toolbox*. https://ctb.ku.edu/en

3.1.7   Wilcox, D. (1996). *The guide to effective participation*. Partnership Books. http://www.partnerships.org.uk/guide/main1.html

3.2   Visioning and making choices

3.2.1   Antunes, P., Karadzic, V., Santos, R., Beça, P., & Osann, A. (2011). Participatory multi-criteria analysis of irrigation management alternatives: The case of the Caia irrigation district, Portugal. *International Journal of Agricultural Sustainability*, 9(2), 334–349. doi.org/10.1080/14735903.2011.582358

3.2.2   Dean, M. (2021). Participatory multi-criteria analysis methods: Comprehensive, inclusive, transparent and user-friendly? An application to the case of the London Gateway Port. *Research in Transportation Economics*, 88. doi.org/10.1016/j.retrec.2020.100887

3.2.3   Department of the Prime Minister and Cabinet. (2022, June 22). *Futures thinking*. https://dpmc.govt.nz/our-programmes/policy-project/policy-methods-toolbox/futures-thinking

3.2.4   Kowalski, K., Stagl, S., Madlener, R., & Omann, I. (2009). Sustainable energy futures: Methodological challenges in combining scenarios and participatory multi-criteria analysis. *European Journal of Operational Research*, 197(3), 1063–1074. doi.org/10.1016/j.ejor.2007.12.049

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3.2.6   Robinson, J., Burch, S., Talwar, S., O'Shea, M., & Walsh, M. (2011). Envisioning sustainability: Recent progress in the use of participatory backcasting approaches for sustainability research. *Technological Forecasting and Social Change*, 78(5), 756–768. doi.org/10.1016/j.techfore.2010.12.006

3.2.7   Scott, L. (2005). Participatory multi-criteria decision analysis: A new tool for integrated development planning. *Development Southern Africa*, 22(5), 695–716. doi.org/10.1080/03768350500364232

3.2.8   STEPS Centre. (2023, June 22). *Pathways to sustainability*. STEPS Centre. https://steps-centre.org/

3.2.9   Vergragt, P. J., & Quist, J. (2011). Backcasting for sustainability: Introduction to the special issue. *Technological Forecasting and Social Change*, 78(5), 747–755. doi.org/10.1016/j.techfore.2011.03.010

3.3   Community engagement and procedural justice in energy infrastructure

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3.3.3   Willis, S., Stephenson, J., & Day, R. (2012). *Blueskin people power: A toolkit for community engagement*. https://ourarchive.otago.ac.nz/handle/10523/6949

3.4   Other methods

3.4.1   Harrison, S., Macmillan, A., Bond, S., & Stephenson, J. (2022). *Climate change adaptation decision-making for health and wellbeing in South Dunedin: Report on the use of causal mapping for stakeholders*. ourarchive.otago.ac.nz/handle/10523/13589

3.4.2   The KM Training Package. (2022). *Net-Map. The KM Training Package*. https://www.kmtraining.org/content/net-map

3.4.3   McKercher, K. A. (2021, Jan 25). *Who cares? Introducing a model of care for co-design*. [Article]. LinkedIn. https://www.linkedin.com/pulse/who-cares-model-care-co-design-kelly-ann-mckercher-them-they-/

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4 Transitions management, guides and toolkits

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4.4 CSIS and CIF. (2021). *A framework for just transitions. Just Transition Initiative.* https://justtransitioninitiative.org/wp-content/uploads/2021/01/Framework-for-Just-Transitions_Download.pdf

4.5 European Environment Agency. (2019). *Sustainability transitions: Policy and practice (Publication No. 09/2019).* https://www.eea.europa.eu/publications/sustainability-transitions-policy-and-practice

4.6 Hussey, S. (2022). *Future skills for engagement practitioners.* IAP2 - International Association for Public Participation.

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4.9 Just Transition Centre and The B Team. (2018). *Just transition: A business guide* https://bteam.org/assets/reports/Just-Transition-A-Business-Guide.pdf

4.10 Just Transition Commission, Scottish Government. (2022). *Making the future—Second Just Transition Commission: Initial report*. https://www.gov.scot/publications/making-future-initial-report-2nd-transition-commission/pages/5/

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4.14 NZCTU. (2010). Just transition: A working people's response to climate change. https://union.org.nz/just-transition/

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4.18 Transition Network team. (2016). *Essential guide to doing transition.*
https://transitionnetwork.org/resources-essential-guide-transition/

5   International case studies

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6   New Zealand case studies

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