CHAPTER 8

Leave No One Behind: Engaging Communities in the Just Transition Process Towards Climate Neutrality

Ricardo García-Mira, Nachatter Singh Garha, Serafeim Michas, Franziska Mey, Samyajit Basu, and Diana Süsser

Policy Highlights To achieve the recommendation stated in the title, we propose the following:

- Equip key actors with the transformative capacities to support the development and implementation of regional visions, plans, and narratives.

R. García-Mira (✉) · N. S. Garha
University of A Coruna, A Coruña, Spain
e-mail: ricardo.garcia.mira@udc.es

N. S. Garha
e-mail: nachatter.singh@udc.es

S. Michas
University of Piraeus, Pireas, Greece
e-mail: michas@unipi.gr
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- Develop structures and participatory mechanisms that encourage a wide social dialogue and citizen involvement in just transition projects.
- Use insights from science and practice from participatory processes, as well as methods and tools developed in different contexts, to enable just transitions.
- Involve local stakeholders in the intersectional analysis of compensatory measures for holistically mitigating negative impacts of policies or interventions.
- Make use of the full spectrum of SSH and STEM tools to support local transition processes.

Keywords Just transition · Community engagement · Stakeholder participation · Just transition plans · Socio-economic impact

Introduction

Phasing out fossil fuels in a just manner is essential for achieving EU climate objectives. Currently, the closing down of fossil fuel industries and the transition towards a renewable energy system in Europe and beyond are taking place unevenly, with very different decarbonisation strategies. This is partly caused by regions having different levels of dependence on fossil fuels, transformative capacities, and the availability of

F. Mey
Research Institute for Sustainability, Helmholtz Centre Potsdam, Potsdam, Germany
e-mail: franziska.mey@rifs-potsdam.de

S. Basu
Mobilise Mobility and Logistics Research Group, House of Sustainable Transitions, Vrije Universiteit Brussel, Ixelles, Belgium
e-mail: samyajit.basu@vub.be

D. Süsser
Institute for European Energy and Climate Policy, Amsterdam, The Netherlands
e-mail: diana@ieecp.org

human and natural resources. As a result, the way the energy transition locally unfolds has a diversified agenda, which means there is no silver bullet for all coal- and carbon-intensive regions (CCIRs). The term "just transition" is high on the political agenda (Lee & Baumgartner, 2022), and an increasing number of countries have developed transition plans. However, the policy interpretation of a just transition varies from country to country (Hermwille et al., 2023). The debate is generally moving towards a more holistic understanding of the transition to a more sustainable energy system. This involves taking into account the environmental, social, demographic, and economic impacts of the transition on all members of society (Abram et al., 2022; Wang & Lo, 2021).

The European Green Deal aims to leave no one behind in the transition, although implementing this goal in practice is not exempt from challenges. In this sense, the Just Transition Mechanism is a crucial mechanism that promotes social and economic justice and enables structural change in the regions most affected. It consists of three pillars: (1) the Just Transition Fund; (2) a dedicated scheme under the InvestEU package, and (3) a new public sector loan facility. To access the different funds, eligible regions across Europe must submit their Territorial Just Transition Plans (TJTP) to the European Commission (European Commission, n.d.). However, despite these efforts, some authors have warned that the European Green Deal policies fail to address the social dimension and thus might exacerbate social inequalities (Akgüç et al., 2022). When it comes to implementation, meaningful engagement will again be critical for giving citizens and communities ownership of the process. In this book chapter, we highlight common overarching challenges that need to be addressed to achieve just transitions: the persistence of top-down approaches from the EU or national level in formulating just transition plans, the inadequate representation of affected communities and stakeholders in developing strategies and solutions for their own regions, and the lack of exploratory assessment of solutions considering diverse contexts and place-based challenges. Finally, we draw recommendations for meaningful stakeholder and community engagement in transition processes to address these challenges.

This chapter draws on SSH and energy modelling applied in four European projects: TIPPING+, JUSTEM, ENTRANCES, and TANDEM. Researchers from different fields, such as psychology, sociology, economics, geography, political science, energy research, and

demography, participated in two internal workshops to identify overarching challenges, approaches, and solutions to enable place-based and citizen-centred transitions. The results from these projects show that science can provide important insights and methods and tools, including scenarios, for policymaking to enable just transitions.

Community Engagement for a Just Transition

Scientific evidence underscores the pressing need for achieving climate neutrality by 2050 while also emphasising the necessity for societies to benefit from the transition process, thereby requiring active engagement from affected communities (Devine-Wright, 2007; Schot et al., 2016; Sovacool et al., 2022). However, a better understanding of different social groups' barriers and the impact of engagement strategies on them is essential (Hanke et al., 2021).

Stakeholder Engagement Challenges and Opportunities

This section provides insights into the opportunities and challenges of community engagement from four European projects. Evidence from the JUSTEM project indicates large differences in how citizens and stakeholders have been engaged in preparing TJTPs in coal regions (Koasidis et al., 2023). For example, in Poland and Spain, stakeholder engagement followed a more structured approach to ensure the involvement of a large number of stakeholders. Romania has employed multi-level stakeholder participation and set up a stakeholder registry with around 290 identified organisations and/or persons, which helped to involve local stakeholders. In Croatia and Bulgaria, regional authorities had a minimal role in preparing the TJTPs. In Greece and Bulgaria, whether comments from public consultations were considered is not evident. Overall, citizens have been insufficiently involved in drafting transition plans in all studied regions. Despite the very active discussions and the great need to be listened to expressed by participants, experiences from the JUSTEM project also revealed challenges in gaining the interest of citizens in participating in workshops (KAPE et al., 2023). In any case, there has been a lack of transparency on how stakeholder views and contributions have been incorporated into the plans (Koasidis et al., 2023). This fact highlights the need for new ways of meaningful and continuous collaboration

between national and regional authorities that truly value and consider local knowledge, concerns, and aspirations.

The TANDEM project identified challenges regarding the involvement of vulnerable groups in the transition initiatives in CCIRs. Based on an analysis of 27 initiatives, the project showed that one-third of these initiatives did not identify or involve vulnerable groups associated with the specific actions. Only 13 out of 27 initiatives promote the participation of vulnerable groups during some parts of the implementation phase. This resulted in undesirable effects, such as the deepening of inequalities or the inaccessibility of compensatory measures to specific groups (e.g., tenants, low-income groups), and direct negative effects (e.g., an increase in energy prices following renovations or the installation of renewable energy sources).

In the ENTRANCES project, the approach to citizen involvement was thoroughly refined, and various methods, such as surveys, focus groups, stakeholder interviews, and co-creation meetings, drawing on SSH and STEM knowledge, were tested and implemented, demonstrating their effectiveness. To this purpose, a comprehensive framework of knowledge co-creation for the CCIRs in transition was developed. It specifically considered the views, opinions, representations, and tacit knowledge of a variety of stakeholders at local, regional, European, and international levels who were involved in the research process and in the production of the project's recommendations. This co-creation process consisted of a fact-based dialogue involving representatives of the Quintuple Helix, i.e., researchers, policymakers, businesses and industry, citizens, and defenders of the natural environment (Carayannis & Campbell, 2010). The dialogue was supported by the different results of the project: regional case studies, a taxonomy of challenges and coping strategies, socio-ecological and technical scenarios, and socio-economic simulations. Three subsequent meetings were conducted. The objective of these meetings was to gather insights on the strategies and approaches adopted or planned for regional development in each region, as well as on the main barriers and facilitators from the perspectives of the different stakeholders. In addition to the co-creation meetings, thirteen focus groups (one in each CCIR) were conducted to collect qualitative data and co-create knowledge on the socio-cultural component of the multidimensional analytical framework used to study the social impacts of decarbonisation and energy transition processes in the CCIRs. The semi-structured interviews with local stakeholders, considered key informants of the research, were conducted to

collect primary data as well as the viewpoints of the different stakeholders on the socio-ecological and socio-technical (SETS) aspects of the energy transition in the different CCIRs (Garha & Garcia Mira, 2023). These meetings helped researchers assess the transformative capacities (Strasser et al., 2019) of the CCIRs in transition, which refer to the ability of these areas to adapt, innovate, and transition towards more sustainable and less carbon-intensive economic activities, and contributed to the formulation of policy recommendations.

In TIPPING+, the researchers also applied various methods, such as desk research, stakeholder interviews, workshops, and energy modelling, to explore just transition pathways. By iteratively combining these methods, stakeholder engagement was facilitated and led to the identification of positive transition narratives in selected communities, which deviate from not-so-just marginal transition pathways. One of the case studies, the City of Megalopolis in Greece, highlighted how the integration of energy modelling in stakeholder engagement strategies could support the creation of transition pathways with direct benefits for the citizens. Megalopolis is a city whose workforce has largely been employed in lignite mining and coal-based power generation since the 1970s. Following national mandates, lignite power plants in the city will be shut down, leading to the loss of jobs and the loss of the lignite-fuelled district heating network, which supplied cheap space heating for the households of Megalopolis. To counter the loss of district heating, a natural gas distribution network is being developed, and all households in Megalopolis are being supplied with a new natural gas boiler free of charge. The local community embraced this decision, as the cost of purchasing a new heating boiler was avoided, and natural gas was still cheap at the time of the decision. To initiate discussions on the topic, a first "get-to-know" stakeholder workshop was held, where participants shared their perspectives. The discussions led to the elaboration of alternative heating transition scenarios for the residential sector of Megalopolis, where instead of using natural gas as an intermediate fuel, heat pumps are deployed from the beginning. To quantify the effect of such scenarios, the DREEM model (Stavrakas & Flamos, 2020) was used to compare the energy consumption, environmental footprint, and potential extra charge on households for residential heating. The results of the DREEM model were presented during a field visit to Megalopolis, during which the findings were discussed with the city mayor, the local energy-producing company, academic representatives, and a non-profit organisation. The

discussion led to the idea of transforming Megalopolis into a green city by prioritising renewable energy from the 550 MW of planned photovoltaics in the region for direct consumption in the city with the aid of batteries, maximising the synergies with heat pumps. To quantify such a scenario, the STREEM model (Michas & Flamos, 2023) was used to calculate the required renewable energy production to cover 90% of the city's demand with green energy, the accompanying storage capacity to enable this, and the cost of renewable energy supply, comparing it to the cost of purchasing electricity from the grid. The analysis showed that covering 90% of the city's electricity demand with direct solar energy and using heat pumps instead of natural gas for heating could save households up to 1700 euros per year compared to the current transition scenario. The relevant results were presented at the second and final stakeholder workshop, where participants were able to understand the trade-offs and long-term benefits of accelerated green transition pathways compared to using fossil fuels as intermediate solutions. The entire process highlighted that using energy modelling and communicating the results to stakeholders in an easily digestible manner can enhance the common understanding among various stakeholder groups towards long-term sustainable transition pathways.

Cross-Project Learnings on the Added Value of Community Engagement

Building upon the insights from the preceding section, we identified challenges and opportunities for just transition implementation processes. The evidence from the different EU projects suggests persistent issues with local stakeholder and community engagement in the systematic transition of CCIRs, specifically in developing future strategies and plans such as the TJTP. Our examples emphasise that this can lead to undesired outcomes when, for example, policy measures do not align with local needs and inequalities deepen. Consequently, a lack of local buy-in may fuel resistance and social tension. This has been particularly evident in the JUSTEM and TANDEM projects, emphasising the need to involve local and regional stakeholders and citizens across the entire policy process, from policy development through implementation. To achieve this goal, we find that stakeholders and citizens must be equipped with the necessary knowledge, skills, and funding to fulfil their roles and strengthen their transformative capacities to support and own the transition process

in their regions. Multiplicity and interdependence of vulnerability factors may result in unintentional overlooking of social groups or individuals in policy decisions (e.g., negative effects of the closure of a thermal power station on women from lower socio-economic groups involved in maintenance or cleaning jobs or in a staff canteen). Therefore, the projects highlighted the need to involve local stakeholders and community members in the intersectional analysis of compensatory measures for holistically mitigating the negative impacts of the policy intervention.

Projects like ENTRANCES and TIPPING+ have set out to test and apply methods for stakeholder and citizen participation in addressing these issues in different engagement formats. Learnings from these projects confirmed the added value and importance of local voices for, on the one hand, a better understanding of the transition process in CCIRs and, on the other hand, showcasing how to empower community members to express their needs and concerns. In particular, integrating SSH and STEM expertise has provided an enhanced set of tools and processes for knowledge transfer, learning, and co-creation at the local level. In fact, our projects have offered a set of strategies and concrete measures to encourage dialogue and meaningful engagement. We find that participatory mechanisms should be developed for iterative stakeholder consultation procedures, which will foster a deeper understanding of the local context and address the concerns of vulnerable groups. Regional workshops have enabled project partners to identify central issues, capture the visions and ideas of citizens for a just transition, communicate research and modelling results back to various stakeholder groups, and ultimately highlight topics of interest that must be considered when adapting local plans and developing local projects.

Our project results also emphasise the importance of research in CCIRs and the need for continuous engagement of SSH and STEM scientists in CCRIs in order to identify the challenges but also empower stakeholders and citizens to have a say in the decisions that affect their livelihoods, facilitating processes that have their needs and concerns addressed.

Conclusions and Recommendations

The overall findings of the previous section led to the synthesis of policy recommendations towards people-centred just transition processes. First, involving local stakeholders with an intersectional approach is crucial in analysing the compensatory measures for holistically mitigating the

negative impacts of decarbonisation policies or interventions. Defining new ways to meaningfully engage affected communities and citizens in the ongoing transition processes is essential. We call for empowering citizens to participate actively in the energy transition, e.g., through community-owned renewable energy projects, to gain more control over their power generation and consumption habits and increase their knowledge. Therefore, their opinion of what actually is a just transition becomes evidence-based.

Second, it is important to equip key actors with the transformative capacities to support the development of regional visions, plans, and narratives at the local level. Citizens should be informed and prepared to participate in the design and implementation of decarbonisation plans. The development of industrial and service sectors will depend on the entrepreneurial capacities and availability of skilled labour. Education and training activities are very important for improving human capital and regional development. More investment in research and innovation is required to meet the new challenges posed by just transition processes.

Third, the governance of just transitions requires a bottom-up approach and the decentralisation of power. To achieve this, structures and participatory mechanisms to encourage the active participation of a large number of stakeholders at the regional and local levels should be developed to ensure a diverse and inclusive social dialogue. Instead, the local stakeholders should be involved in the intersectional analysis of the compensatory measures for holistically mitigating the negative impacts of the policy or the intervention. To ensure compensatory measures are accessible to all sections of society that are either directly or indirectly affected by the transition policies or initiatives, it is imperative to identify measures that can enhance livelihoods before the implementation of the policy or initiative and that all local stakeholders, including citizens from all sections of society, are involved in that process.

Fourth, insights from science and practice stemming from participatory processes and methods and tools developed in different contexts to enable just transitions should be used in policymaking. The decarbonisation policies should not be politically motivated to please the voters of specific groups; instead, they should be based on scientific facts and a multiple-impact analysis of different measures. Governments should initiate multi-level governance and multi-stakeholder processes to provide agency to relevant local actors and enable a co-creation of solutions between science, policy, and practice.

Overall, we conclude that the active participation of well-equipped local stakeholders and citizens, the provision of appropriate tools and mechanisms for citizen engagement, science-based and co-creative policymaking, and the involvement of local stakeholders in the intersectional analysis of the compensatory measures planned for the vulnerable groups can accelerate the pace of just transition in CCIRs.

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