



GreenPaths

EUROPEAN KNOWLEDGE HUB ON
JUST TRANSITION PATHWAYS

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1 Context

The GreenPaths project has developed 15 case studies to evaluate the social and environmental impacts of just transition policies in diverse contexts. Due to the geographical, sectoral, methodological, and conceptual diversity of these cases, it is challenging to establish a systematic comparison that yields clear conclusions. The Analytical Framework (D2.4) and the Conceptual and Methodological Matrix (D3.1) were designed to help align the case studies and were already used throughout the execution of T3.2 (“Carry out a set of 15 case studies”) and thus, in the production of contributions for D3.2 and D3.3.

To address the diversity of results, an internal webinar was organised, aimed at identifying common patterns or specificities linked to sectors or cases, as well as insights that can inspire the redesign and improvement of just transition policies. The purpose of this session was to invite reflection and discussion in an argumentative, critical and open tone, and the outcomes led to the present discussion paper.

The webinar and the corresponding discussion paper contribute to the alignment of case-study questions and the overarching project questions, inspired and guided by the Analytical Framework (D2.4). This exercise aims at improving the coherence and quality of the inputs generated for subsequent stages of the project, especially in what concerns the co-design of green transition pathways (WP5).

2 Methodology

The case study webinar took the form of an online roundtable in two sections. Given the number of partners and cases, 11 participating case studies are divided into two groups (broadly done so through connecting the key concepts of the case studies)¹.

Group 1 was composed of the following case studies:

- Case study 1: Lithium mining in Barroso, Portugal
- Case study 3: Coal mine and thermal power plant closures in the region of Bierzo-Laciana (Spain)
- Case study 9: How ‘just’ is the ‘just transition’? A regional analysis of climate finance in the European Union

¹ Cases 5 to 8 regarding green industrial policies in Latin America, Southern Africa, Southeast Asia and North Africa, were not presented during the webinar. The TNI researchers responsible for the four case studies on green industrial policy in Global South regions had to travel to Brazil to participate in the climate summit (COP30) in Belém do Pará and were therefore unable to attend the webinar. However, the findings and conclusions of those case studies were considered in the production of this report.

- Case study 10: Effects of green transition policy interventions on environmental sustainability and social wellbeing in EU countries and in 24 selected countries in the Global South
- Case study 12: Mining Lithium in Serbia

Group 2 was composed by the following case studies:

- Case study 2: Europe's Yellowstone? An analysis of the social impacts of forest conservation in Romania
- Case study 4: Common Agricultural Policy (CAP) on land use in Slovenia
- Case study 13: Green transformation of tourism industry – Case of Croatian urban tourist destinations
- Case study 15: Public food procurement as a lever to foster the just and green transition – Dordogne case study
- Case study 11: The European Hydrogen Economy: A Carrier for the Green and Just Transition?
- Case study 14: Energy poverty in Central and South-Eastern Europe

Each group worked as a roundtable, led by a different discussant, with reflections on the case study findings prompted by 2 questions that are designed to a) align with GreenPaths central research and empirical questions and b) encourage cross-case discussion on the key findings of partners' diverse case studies. Each group of case studies reflected on the same 2 questions:

Q1. To start, let's return to the first GreenPaths guiding question: How are green transition policies impacting environmental sustainability and social wellbeing? Based on this overarching question, could you now elaborate on the specific social impacts—costs and benefits—that have been most evident in your case study?

Q2. What are the primary challenges and most promising initiatives your case study identified regarding how different actors (e.g., local communities, the State, social movements, private companies, or the EU) responded to the socio-economic or environmental impacts of green transition policy? In your response, you are welcome to explore different aspects—depending on your main findings—such as governance and coordination issues at different scales, as well as initiatives related to mitigation, adaptation and restoration.

The research questions of the case study were also a key reference to guide the discussion:



- *How do the proposed lithium mining projects impact the social and ecological well-being of the Barroso region?*
- *How do forest conservation policies impact rural communities in Romania?*
- *How do Just Transition Agreements impact the social well-being of communities affected by the closure of thermal power plants and mining operations in the Spanish region of Bierzo-Laciana?*
- *How does the Common Agricultural Policy (CAP) contribute to the transformation of land use patterns, agricultural practices and rural livelihoods of small farmers in partner countries?*
- *To what extent has Spain's national development bank (ICO) targeted sustainable finance towards those regions in Spain that are most vulnerable to the green transition?*
- *How do green transition policy interventions in the EU, such as the Environmental Policy Stringency Index, contribute to a just green transition in the European Union, i.e., in the countries in which these policies are implemented? How do green transition policy interventions in the EU contribute to a just green transition in countries in the Global South?*
- *How does the introduction of a hydrogen economy impact the distribution of wealth and social well-being of citizens?*
- *How are decarbonisation and energy transition EU policies impacting extractivist policies and practices in Serbia, with a focus on lithium extraction process being planned?*
- *What is the transformative potential for ecological transition of the tourism industry in Croatia, with focus on main urban touristic destinations?*
- *How do the planned measures in reducing energy poverty address the social dimension of housing? What is the relation of energy poverty of households in post-socialist countries in Central and South-eastern Europe to the ownership and tenancy structure?*
- *How do public food procurement practices affect social equity, particularly in terms of providing fair opportunities for marginalized communities? What role does policy innovation play in facilitating the integration of green and just transition principles in food public procurement?*

During the discussion, partners were encouraged to share their results and deliberations regarding positive and negative social and environmental impacts, differences in the impacts for collectives and key stakeholder problematics as well as responses from actors to these impacts, and policy design issues at different levels. Reflections on opportunities, best practices or promising initiatives, primary challenges and future scenarios were also welcome.

3 Analytical Framework

The GreenPaths Analytical Framework was described in Deliverable D2.4 and it is designed to provide overarching guidance to and consistency with case study research around the impacts of green transition policy. The framework comprises key concepts, indicators, and tools. It also establishes overarching processes of social impact associated with green transition policy and identifies three conceptual tiers that link together the purpose and aims of GreenPaths case studies.

1. Processes of Social Impact (cross-sectoral and holistic typologies that infuse the framework):

- **Injustice/Inequality:** This process focuses on poverty and vulnerability, looking at equity in the distribution of the costs and benefits of the transition, the recognition of the rights of affected communities, and participation in decision-making.
- **Loss and Damage:** Investigates non-economic and economic consequences, which may include impacts on mobility, life, species/biodiversity, heritage/culture, and health/well-being, among other elements.
- **Labour:** This process focuses on the dynamics of production/consumption, evaluating the quality of the employment generated, working conditions and changes in production and consumption systems within the transition.
- **Mitigation/Adaptation:** Refers to strategies aimed at reducing greenhouse gas emissions (mitigation) and measures to adjust to the current and future effects of climate change (adaptation).
- **Recovery/Resilience/Restoration:** Assesses the capacity of social and environmental systems to recover from shocks, their long-term resilience, and restoration (regeneration) initiatives.
- **Governance/Policies:** This process examines the role of policies and governance, including management, and how the transition is articulated in terms of transparency and democratic decision-making.

2. Concepts. The framework is structured to draw a line of conceptual continuity from the broad project goals down to specific case study inquiries.

- *Project Concepts:* These articulate the core purpose of the project across diverse sectors.
 - Sustainable growth: innovation, digitalisation, nature-based solutions, circular economy, post/de/growth, green taxes
 - Decarbonisation (low carbon, net-zero, carbon footprint)
 - Eco-social State/ Public Services

- Employment & Green Decent Work
- *Sectoral Concepts*: These distil the project concepts into specific sectors.
 - Fossil fuel phase out/carbon pricing, standard setting/green labelling
 - Renewables (energy/communities, law-energy demand), prosumership
 - Green finance (taxes/bonds/etc.)
 - Urbanisation: smart (et al.) cities & infrastructure
 - Green jobs/climate jobs, re-skilling/retraining
 - State aid (social assistance, public services)
 - Organic/Agriculture, agroecology
- *Case Study Concepts*: These articulate the specific and localized inquiries of the WP3 studies.
 - Phasing-out (nuclear, coal, thermal)
 - New Extractivism, green industrial policy, lithium mining; Raw Materials Act
 - Hydrogen economy
 - Sustainable finance: taxes, trading/emissions etc.
 - Sustainable urbanisation: residential energy, housing, tourism
 - Public food procurement, school food policy, nutrition
 - Green/Landgrabbing, conservation, green certificates, biodiversity protection, biosphere/wilderness reserves.

The framework serves as an ontological and epistemological foundation for approaching the case studies and the accompanying conceptual and methodological matrix (D3.1) guides the selection of indicators and methodological tools. Due to the overarching guidance and consistency provided by this framework, the discussion that took place during the webinar also tried to frame the impacts and reflections into the set of Social Impact processes.

Figure 1. Impacts and Concepts of GreenPaths Analytical Framework (Extracted from GreenPaths D2.4)



4 Summary

The green transition brings significant environmental benefits, such as emissions reduction, biodiversity protection, and ecosystem restoration, alongside potential social gains like job creation, energy security, and improved living standards. However, these benefits are often unevenly distributed and remain largely aspirational, while negative impacts are immediate and tangible. Key challenges include degraded public participation, governance fragmentation, and persistent inequalities affecting vulnerable groups and regions. Extractivist practices, “green grabbing” of land, and carbon leakage perpetuate global asymmetries, while precarious employment, rising costs, and social conflicts deepen injustice, foster fragmentation and endanger mutual trust. Methodological gaps in data collection and impact measurement further hinder accountability.

Promising initiatives aim to strengthen democratic governance and transparency through participatory mechanisms, legal reforms, and free, prior, and informed consent processes. Civil society mobilises through activism, litigation, and territorial defence movements, while innovative frameworks promote social dialogue. State-led strategies advance renewable energy and industrial capacity, complemented by technology transfer and skills training. Local initiatives, including sustainable public procurement and agricultural diversification, demonstrate socially inclusive models. At the international level, tools for the monitoring of climate funding and offshoring of emissions enhance financial transparency and mitigate carbon leakage.

5 Discussion

5.1 Overview of environmental and social wellbeing impacts

The environmental and social costs (negative impacts) and benefits (positive impacts) can be listed by case study or analysed according to the GreenPaths framework social impact typology. They can be also clustered by the types of sectors covered (Social Welfare, Equality, Employment, Accessibility and Inclusion; Food, Land Use and Agriculture; Finances and Industrial Production; Energy and climate). Furthermore, the discussion indicated that distinguishing strictly between environmental and social impacts, even useful, is not always meaningful, due to the overlapping and mutual connection between socioeconomic and socio-environmental impacts.

Positive impacts are predominantly focused on the environmental objectives of the transition, with notable social benefits when policies involve state planning and investment in human capital and social protection. They are mostly linked to **climate protection** initiatives derived from the reduction of emissions (GHG, especially CO₂) and to the **energy transition** processes and decarbonisation strategies taking place in Europe. Other benefits mentioned are related to **conservation and restoration**: Rewilding, protection of forests and biodiversity, and endangered species, restoration of ecosystems (e.g. former mining operations), lesser use of pesticides, and reduction of criminal logging.

Another category of advantages of just transition policies is linked to the **deployment of a 'green economy'** and are expressed in terms of both industrialisation and diversification, in a general context of renewable energy adoption. While the funding of environmental sustainability projects and the rise of circular economy initiatives are included as positive environmental impacts, more specific aspects include: the fostering of an agro-ecological economy, increasing sustainable practices in tourism and ecological restoration employment programmes. Consumers also perceive advantages like the promotion of public transport and the reduction of household energy consumption, based on improved building performance.

These are also bound to **social and economic empowerment**, related to energy security and resource autonomy/sovereignty: reduction in fossil fuel imports and, in the case of critical mineral extraction projects, the reduction of dependence on imports of minerals such as lithium from outside the EU. Furthermore, potential benefits include the stabilisation of agricultural land, the creation of domestic value chains (wind/solar sector), the regional cooperation on climate adaptation and the technology adaptation to local contexts or the community-based conservation models.

Social benefits mainly stem from strategic planning, although they are often presented as promises or potential impacts. There is a trend towards strengthening state capacity for strategic planning and sectoral coordination, highlighting state-led development and industrialisation. References to positive impacts are commonly related to **material aspects** (economy, employment, wealth, quality of life, and development), including in most of the case studies references to economic prosperity, social development, job creation and improved social protection. There are, however, more specific allusions to domestic-oriented economic empowerment, support for farming activities (large facilities) and rural development, improved domestic access to energy or reduction of energy spendings, and improved housing quality.

Another category of positive impacts entails **investments for the long-term and future generations**, like the update of skills and training opportunities, including the improvement of public education and training. Technology transfer and sovereignty are also mentioned, exemplified in aspects like the transfers of knowledge on renewable technologies or the development of digital infrastructures. These factors contribute to a sound positioning in green global value chains.

Policy and governance benefits are related to achievements in public participation and co-governance; improved strategy, coordination and planning, and policy innovation; empowerment of regional policy spaces; geopolitical significance and positioning; building of regional knowledge networks (interregional / transnational cooperation); and the strengthening of civil society engagement and awareness.

While positive impacts rely commonly on the *possible* effects of these policies (linked to 'long-term' effects and plans or 'potential' impacts, 'promises', and 'opportunities'), these are forthcoming scenarios, whereas just transition costs and risks are more tangible in the present or the near future.

Negative impacts can also be grouped into various areas, being the bad practices concerning **natural resources** one of the most discussed: pollution, water insecurity and contamination, soil degradation, loss of biodiversity, deforestation, and increasing



human-wildlife interactions. There are also negative impacts derived from the conception of the environment or natural resources as an asset, which may influence the allocation of costs and benefits of their protection and exploitation, leading to: commodification of nature, overregulation of green areas, export-oriented extractivism, dependency on public funds for restoration (which may be considered inadequate or insufficient in some cases), and in general, relegating environmental protection to a secondary priority. In this group, it is crucial to highlight the problems related to **resources and land ownership or management**, and the power imbalances connected to them: green grabbing of lands (private and communal), foreign ownership of green industries, 'forest feudalism', land concentration, exclusion of small farms. reproduction of colonial patterns, and wild urbanisation. This commodification of natural resources shows a key connection between social and environmental impacts, and it is related to decision-making processes and interest conflicts that take place in the policy debates. Another cluster of negative impacts is composed by pitfalls of green industries, consequences of the adoption of green energies and effects of the implementation of a green economy in general. Here the displacement of pollution acquires a relevant role, in form of relocation of emissions or 'carbon leakage'. Other concerns relate to energy and resource management: an increased energy demand from industry, the intense consumption of resources (including energy), or the unequal access to renewable energy (vulnerable groups remain using fossil fuels).

Jobs and employment head the social negative impacts of just transition. Job creation is commonly referred as scarce or insufficient, and precarious (temporary, low-skilled). Moreover, even job loss is referred as one of the impacts of these policies. This leads to a loss of livelihoods and is worsened by another related issue: the disempowerment of trade unions. Income-related difficulties are relevant, since lower income groups are more adversely affected by climate policies in EU, where populations are suffering a rising pre-tax and post-tax income inequality. However, beyond income, other factors to be taken into account when considering **inequalities** include increased housing prices, living costs and energy poverty. According to the case studies, vulnerable groups are excluded from funding schemes and vulnerable regions are less developed and receive less finance. These territorial and regional imbalances (including urban over rural, affluent neighbourhoods over disadvantaged areas) contribute to the uneven distribution of burdens between and within countries. The persistent inequality outlined is connected to the previously mentioned power imbalances concerning land and resources ownership, and favours both private enterprises and politically connected elites.

Several **impacts on local communities** range from risks to traditional ways of life in rural environments (which include local culture and knowledges like those related to water management, farming, agriculture) to population movements (migration to more populated locations, 'renoviction', displacement of indigenous communities, etc.), through the deterioration of public services, misrecognition of indigenous rights, and resistance of local suppliers doing conventional farming.

Social negative impacts are to be explained, facilitated and worsened by **policy and sociopolitical relationships** mentioned along the costs of just transition: a low democratic perspective (degraded public participation, limited consultation, and lack of

transparency), and social fragmentation (social conflicts and reduced mutual trust). Untargeted policies and an uneven climate finance are important factors to understand these dynamics.

In general terms, the negative impacts draw a pattern of ‘green sacrifice’ and distributional inequality, where environmental and social benefits are unevenly distributed costs are externalised to vulnerable communities or peripheral regions. Environmental benefits are being offset by localised ecological degradation, green grabbing and commodification of nature. These phenomena are facilitated by a situation where technocratic governance is sidelining democratic processes through limited community participation and transparency.

According to the GreenPaths framework, the impacts can be classified into the six categories mentioned previously (see Table 1). It is worth to highlight that ‘Injustice/Inequality’, and ‘Loss & Damage’ impacts are the most common types of undesired effects reported by the researched cases.

Table 1. Social and environmental impacts of the case studies by social impact process

Social Impact Processes	Positive impacts	Negative impacts
<i>Injustice / Inequality</i>	<ul style="list-style-type: none"> • Social and economic empowerment • Improved social protection • Better housing quality • Reduction in energy spending • Domestic-oriented economic empowerment 	<ul style="list-style-type: none"> • Energy poverty and vulnerability • Exclusion of vulnerable groups from funding • Territorial and regional imbalances • Rising housing prices and living costs • Land concentration, “green grabbing”, forest feudalism • Misrecognition of indigenous rights
<i>Loss and damage</i>	<ul style="list-style-type: none"> • Conservation and restoration of ecosystems • Rewilding and forest protection • Protection of biodiversity and endangered species • Preservation of cultural heritage through community-based models 	<ul style="list-style-type: none"> • Loss of biodiversity and species • Soil degradation and deforestation • Water contamination and scarcity • Migration and displacement of communities • Risks to traditional ways of life • Deterioration of public services • Health and well-being affected by pollution

Social Impact Processes	Positive impacts	Negative impacts
<i>Labour</i>	<ul style="list-style-type: none"> • Job creation in green sectors • Employment programmes in ecological restoration • Skills development and training opportunities • Support for farming and rural development 	<ul style="list-style-type: none"> • Job losses in traditional sectors • Precarious employment (temporary, low-skilled) • Disempowerment of trade unions • Increased resource and energy consumption
<i>Mitigation / Adaptation</i>	<ul style="list-style-type: none"> • Reduction of GHG emissions • Energy transition and decarbonisation • Technology transfer and sovereignty • Regional cooperation on climate adaptation 	<ul style="list-style-type: none"> • Carbon leakage and relocation of emissions • Increased energy demand from industry • Unequal access to renewable energy for vulnerable groups
<i>Recovery / Resilience / Restoration</i>	<ul style="list-style-type: none"> • Ecosystem restoration • Strengthening community resilience • Long-term investments for future generations 	<ul style="list-style-type: none"> • Dependency on public funds for restoration • Insufficient or inadequate restoration measures
<i>Governance / Policies</i>	<ul style="list-style-type: none"> • Improved strategic planning and coordination • Policy innovation and co-governance • Enhanced public participation • Building regional knowledge networks 	<ul style="list-style-type: none"> • Lack of transparency and limited consultation • Social fragmentation and conflicts • Untargeted policies and uneven climate finance

In what concerns the **sectors**, only four categories were covered by the case studies ('Social Welfare, Equality, Employment, Accessibility and Inclusion'; 'Food, Land Use and Agriculture'; 'Finances and Industrial Production'; and 'Energy and climate'). The classification of the identified impacts by sector is shown in Table 2.

Table 2. Social and environmental impacts of the case studies by sector

Sector	Positive impacts	Negative impacts
<i>Social Welfare, Equality, Employment, Accessibility and Inclusion</i>	<ul style="list-style-type: none"> • Social and economic empowerment • Improved social protection • Better housing quality • Job creation in green sectors • Skills development and training opportunities 	<ul style="list-style-type: none"> • Energy poverty and vulnerability • Exclusion of vulnerable groups from funding • Territorial and regional imbalances • Rising housing prices and living costs

	<ul style="list-style-type: none"> • Reduction in energy spending 	<ul style="list-style-type: none"> • Job losses in traditional sectors • Precarious employment • Disempowerment of trade unions • Misrecognition of indigenous rights • Migration and displacement of rural communities
<i>Food, Land Use and Agriculture</i>	<ul style="list-style-type: none"> • Support for farming and rural development • Stabilisation of agricultural land • Agro-ecological economy • Community-based conservation models 	<ul style="list-style-type: none"> • Land concentration, “green grabbing”, forest feudalism • Soil degradation and deforestation • Water contamination and scarcity • Risks to traditional ways of life • Dependency on public funds for restoration
<i>Finances and Industrial Production</i>	<ul style="list-style-type: none"> • Domestic-oriented economic empowerment • Creation of domestic value chains (e.g., wind/solar sector) • Circular economy initiatives • Technology transfer and sovereignty • Industrial diversification 	<ul style="list-style-type: none"> • Commodification of nature • Export-oriented extractivism • Increased resource and energy consumption
<i>Energy and Climate</i>	<ul style="list-style-type: none"> • Reduction of GHG emissions • Energy transition and decarbonisation • Improved building performance • Regional cooperation on climate adaptation • Renewable energy adoption 	<ul style="list-style-type: none"> • Carbon leakage and relocation of emissions • Unequal access to renewable energy for vulnerable groups • Increased energy demand from industry • Overregulation of green areas • Pollution displacement

Certain topics appear both in the groups of positive and negative impacts (biodiversity/protection of species; job creation; public participation; farming support; access to energy). This may be related to the timespan of the impacts (e.g. job creation may be just a potential benefit). However, the fact that these negative and positive outcomes vary from one case study to other is also important to understand the impact divergence and contradictions. Moreover, the transversal effect of inequalities and the uneven distribution of impacts play a crucial role for the analysis of the just dimension of green transition policies.

When talking about positive and negative outcomes of just transitions, it is crucial to talk about distribution and balance. The uneven allocation of burdens and benefits, both between and within countries, undermines the positive sides of policies and worsens the negative ones. Offshoring of emissions is one of the most obvious reflections of this tricky

pattern. In this sense, if both sides are to be compared, negative impacts may represent a higher weight, since a group can be deprived from the rewards of these policies while assuming a disproportionate burden. For this reason, it is crucial to think beyond a simple listing of impacts and ask ourselves: ‘positive where?’, ‘positive for whom?’, ‘positive for how long...?’. Additionally, talking in terms of ‘costs and benefits’ may contribute to the commodification of both environment and human beings, since costs are factors that may be assumed or counterweighted, and calculated as a market value. A more complex context-based stakeholder analysis can contribute to understand the effects of policies in terms of ‘winners and losers’, in order to refine policies for a harmonised result².

5.2 Responses from actors: challenges and initiatives

During the webinar, participants were asked to identify the primary challenges and most promising initiatives identified in the case studies, regarding how different actors (e.g., local communities, the State, social movements, private companies, or the EU) responded to the socioeconomic or environmental impacts of green transition policy.

Primary Challenges

The main challenges identified in the case studies cover a wide range of structural, political and social issues that compromise the justice of the green transition, and many of them overlap across regions and sectors.

A recurring challenge is the **degradation of public participation** and the exclusion of communities in the consultation and approval phases of projects. Public participation and transparency are often seen as insufficient, as local communities rarely have a significant say in decisions about the future of their territories. Their concerns and oppositions are systematically ignored, especially in initiatives such as the hydrogen economy, where citizen participation is ineffective or limited to very late stages of the decision-making process. The policies are applied under a logic of urgency and geopolitical competitiveness, accelerating projects without substantive consultations. In addition, there is still a lack of recognition of the rights of local communities and their conservation practices, relegating them to a sacrificial role. This technocratic approach to transition leaves little room to consider those who are directly affected.

The persistent inequalities’ **asymmetrical distribution of costs and benefits** are also a central issue, leading to the settlement and deepening of unfair practices. There is a marked unequal distribution of impacts, disproportionately affecting women, young people, lower-income population, rural areas, disempowered regions and territories, Global South countries, among others. Some of the factors identified are: a scarce and precarious employment (characterised by temporary contracts and low-skilled roles), pre-tax and post-tax income inequality, uneven climate finance (vulnerable regions and

² O’Brien, K. L., & Leichenko, R. M. (2003). Winners and Losers in the Context of Global Change. *Annals of the Association of American Geographers*, 93(1), 89–103. <http://www.jstor.org/stable/1515325>

groups have more difficulties to access finance), and other factors like rising housing prices or unequal access to renewable energy. This specific challenge implies an additional difficulty: there are structural asymmetries that are transversal to all the socioeconomic structures, so they need to be analysed, understood and addressed with a more ambitious gaze.

The **reappropriation of resources** is also a common issue; since green transition processes often reproduce extractivist and colonial models, while the benefits are concentrated in elites or corporations. Instances of ‘green grabbing’ of land, including both communal and private areas, are increasingly reported, often justified through climate policies such as biodiversity protection or carbon credit schemes. There is also a growing risk of green reprimarisation in the Global South, where these regions are confined to supplying critical raw materials without achieving technological progress. Project benefits tend to be privatised while costs are socialised, with substantial public investments redirected to private actors. The extractivism of minerals essential for the green transition exacerbates water stress, soil degradation, and the displacement of indigenous communities. Furthermore, the outsourcing of EU emissions to less regulated economies in the Global South (‘carbon leakage’) undermines global climate effectiveness. Green energy export agreements also perpetuate asymmetrical North–South relations.

Political and administrative fragmentation and complexity hinder the implementation of fair policies, leading to **coordination and governance challenges**. Governance fragmentation hinders effective communication between EU, national, and municipal levels. This lack of coordination contributes to the limited scope of many measures, which often fail to address the needs of the most vulnerable groups, thereby exposing a significant gap between national strategies and their practical effectiveness. Moreover, the complexity of these policies makes them difficult for municipalities to interpret, discouraging companies and communities from active participation, worsening the uneven finance previously mentioned. In the agricultural sector, this challenge is compounded by the heavy administrative burden that ecological measures impose on small farmers. At the same time, certain industries—such as tourism—continue to resist systemic transformation, preferring to maintain a ‘business as usual’ approach. Underlying these issues is a persistent inability to reconcile economic growth with environmental and social impacts, a constraint that is further aggravated by ongoing legal conflicts and procedural obstacles.

Abrupt changes in policies and lack of transparency may generate **mistrust and social conflicts**. Trust in institutions has been eroded in some cases, largely due to political pressure to secure contracts and the failure to account for non-economic losses. This distrust is further deepened, for instance, when communities affected by mine closures, who had anticipated a gradual process, instead experienced abrupt and traumatic shutdowns, leading to widespread rejection of the policies. At the same time, a profound social conflict emerged between those who sold their land and those opposing extractive projects, creating significant social fragmentation within local communities.

Lastly, the difficulty in **measuring and tracking impacts** and financing is a methodological and policy obstacle. Data collection remains highly challenging, with large amounts of climate funds proving difficult to trace back to their actual investment

locations. These gaps in information highlight a broader lack of political recognition of the problem, particularly when it comes to assessing the environmental and social impacts of sectors such as tourism. Compounding this issue is the absence of robust indicators to measure or evaluate critical forms of impact, including losses and intangible damage, which makes comprehensive monitoring and accountability even more difficult.

Promising initiatives

Interesting initiatives and actors' responses to the challenges of the green transition in the case studies manifest themselves at multiple levels, from community mobilisation and legal activism to innovation in governance and state-led industrial strategies.

Among the most promising initiatives stands out the goal of **strengthening governance and participation**. In the face of the frequent degradation of public participation and the dismissal of local concerns, various initiatives seek to ensure a fairer and more democratic process. In Spain, particularly in the context of coal mine closures in El Bierzo–Laciana, initiatives promoting public participation and co-governance have been identified, alongside proposals for participatory evaluation and enhanced corporate accountability. Improving legal and procedural transparency has also been emphasised, with calls to guarantee substantive democratic participation through processes such as free, prior, and informed consent (FPIC), ensuring communities have a legal and feasible right to reject projects. Furthermore, a reform of participatory mechanisms—specifically the Aarhus Convention—has been suggested to provide more effective tools for public involvement, as community voices are often heard only at very late stages of decision-making.

Regarding **social responses, mobilisation and slow justice**, communities, non-governmental organizations (NGOs), and activists have developed strategies to oppose negative impacts, often using legal and social tools. In response to the “slow violence” of environmental degradation, communities have increasingly turned to activism and litigation as tools for transparency and democratic accountability. In Romania, for instance, social mobilisation and conflict have been employed to challenge opaque practices, while slow justice processes—through litigation—remain essential for opposing environmental devastation. Similarly, territorial defence movements have emerged in Slovenia, affected by the Common Agricultural Policy (CAP), and across Latin America, where extractivism poses significant threats. These movements mobilise communities around specific risks, strengthen public awareness, and encompass anti-extractivist campaigns, environmental justice activism, and indigenous rights advocacy. In addition, civil society plays a pivotal role in advancing energy justice, particularly in addressing energy poverty in Central and South-Eastern Europe. Acting as an intermediary between regulatory frameworks and end-users, civil society fosters policy development and serves as a vital bridge between vulnerable communities and policymakers.

Another group of initiatives is linked to **innovation in industrial policy and state development**. In the Global South, in particular, government initiatives focus on

strengthening state autonomy and capacity to lead the transition to local benefits. State-coordinated industrial strategies have shown significant potential for advancing decarbonisation and local development. In Latin America, renewable energy programmes in countries such as Uruguay and Costa Rica illustrate how state-led approaches can deliver both climate benefits and local value creation. Similarly, in North Africa, industrialisation strategies driven by the state have focused on building institutional capacity to support the transition. In Southern Africa, innovative just transition frameworks have emerged, notably in South Africa through mechanisms such as the Presidential Climate Commission, which emphasises social dialogue as a cornerstone of policy design. Complementing these efforts are initiatives centred on capacity building and technology, including public renewable energy programmes that generate employment, strategies for transformative beneficiation linking mining to manufacturing, and technical training schemes to strengthen job skills. A key priority in this context is mandating technology transfer as a condition for investment. Finally, in response to the growing threat of new extractivist projects—such as lithium mining in Serbia—advocacy initiatives call for non-extractivist policies that reduce dependency on resource extraction and promote alternative economic models, including degrowth and post-growth approaches.

Local and social economy proposals are also referred along the initiatives mentioned. Some case studies provided concrete examples of locally-based initiatives that manage to align social and environmental benefits. Sustainable public procurement offers a promising pathway for strengthening local economies and reducing social inequalities. A notable example comes from Dordogne (France), where public food procurement initiatives have reinforced local farming communities by improving working conditions and professional recognition for kitchen staff, reducing disparities in children's diets, and leveraging digital platforms such as *AgriLocal* to ensure inclusive market access for small and medium-sized producers. In Slovenia, farmers have demonstrated resilience and creativity through agricultural diversification, embracing mixed production, local markets, and ecotourism as strategies to overcome barriers posed by the Common Agricultural Policy (CAP). Meanwhile, in Serbia, debates surrounding lithium mining have highlighted the importance of recognising non-economic losses and damages within governance frameworks, ensuring that intangible impacts are properly addressed in decision-making processes. In relation to economic aspects, allusions to diversification were also made, in order to promote a more resilient economy.

Finally, in what concerns **transparency of financing and regulation**, improvements in transparency in climate finance are brought by the European Investment Bank (EIB) through the EIB Tracker, a mechanism designed to address longstanding challenges in monitoring the location and allocation of climate funds. At the international level, the European Union has taken steps to mitigate the effects of 'carbon leakage' implementing legislation for the Carbon Border Adjustment Mechanism (CBAM), which aims to ensure a fair and effective global climate strategy.

6 Final conclusions and recommendations

The green transition offers environmental gains (such as emissions reduction and biodiversity protection) and potential social benefits, including job creation and energy security. However, these advantages remain unevenly distributed, while negative impacts like precarious employment, land grabbing, and social fragmentation are immediate. Governance gaps, degraded public participation, and persistent inequalities undermine the justice dimension of transition policies. Extractivist practices and carbon leakage perpetuate global asymmetries, while data and monitoring deficiencies hinder accountability.

Generating a comprehensive and timely understanding of the potential positive and negative impacts of just transition policies is crucial for their effectiveness to contribute not only to the purposes for which they were designed (a fair approach to climate and environmental challenges) but also to ensure their legitimacy and social acceptance. Beyond the global, local, sectoral impacts, or those linked to specific solutions (technologies or energy production alternatives), the transversality of inequalities and the asymmetrical nature of the effects of the green transition forces us to rethink the way in which these policies are understood. They cannot be conceived in isolation, but as part of a framework of policies with structural challenges that cannot be addressed only in terms of 'just transition'.

Green transition is characterised by multiple dualisms and power imbalances that separate people from nature, production from reproduction, in a capital-extractivism model of investor-ownership. The discussion emphasised the difficulty and danger of separating social and environmental impacts: separating human and non-human nature could contribute to the commodification of nature. Green transitions, as implemented, are characterised by dualities of power (global vs. local, urban vs. rural, Global North vs. Global South, sacrifice zones vs. benefited zones, winners vs. losers). In this sense, the separation of social and environmental impacts is seen as a reproduction of colonial and extractivist dualist thinking at the base of the capitalist system, where nature is considered exploitable, and justice requires analysing the conflict and interconnection between both aspects. Moreover, it is possible to envisage two realms which can be defined as 'institutional' or 'formal' spaces (strategies, actions, and decision-making linked to governments, banks, companies, etc.) and 'grassroots' spaces (perceptions, narratives, and options linked to workers, families, activists, etc.).

In what concerns specifically the dualism of Global North vs. Global South, there are some aspects common to both geopolitical areas (labour organising, job quality, ecological damages), but in general terms, it is possible to identify specific impacts and trade-offs which occur more often in the geographic Global South. In the Global North, EU policies reduce emissions but exacerbate inequality. Meanwhile, in the Global South, green industrialisation risks reproducing extractivist dependencies and neocolonial patterns. Moreover, North-South asymmetries may be reinforced by carbon border adjustments and technology dependence.

Increasing the collection of information and the generation of knowledge is essential not only to improve just transition policies, but also to provide them with an in-depth



reflection that helps to address different dimensions of justice (distributional, procedural, recognitional). It will also help to avoid biases when communicating and generating narratives on the long road to real sustainability. A multidimensional approach will help to avoid techno-optimist solutionism and narrow perspectives merely focused on the relationship between energy and climate.

It is essential to highlight the calls to improve the levels of participation and commitment of the affected communities, as well as the levels of transparency. While the starting point refers to a global community, both the effects of climate change and the policies aimed at combating it are unevenly distributed. Thus, the need for greater participation must be conceived in a complex way, with multiple layers, taking into account the complete maps of actors, the concept of 'agency', and the need to guarantee shared benefits. All this must be designed with realistic and acceptable timeframes that guarantee planning and strategies that are proactive and representative, not conditioned by emergencies and competencies that entail unnecessary damage.

Achieving just transitions requires embedding democratic governance, participatory mechanisms, and social safeguards into green transition policies. Policy priorities include:

- **Expanding just transition frameworks** beyond energy to encompass agriculture, finance, and conservation.
- **Addressing intersectional inequalities** by prioritising vulnerable groups.
- **Strengthen democratic governance** through participatory mechanisms and legal reforms.
- Enforcing **transparency and accountability** in climate finance via robust tracking tools and international measures
- Promoting **South-South cooperation** and **technology transfer** to counteract green colonialism.
- **Rejecting sacrificial logics** in favour of holistic approaches linking ecological sustainability with social wellbeing.
- **Promote state-led strategies** for industrial development, technology transfer, and skills training to maximise local benefits.
- **Support community-based initiatives** such as sustainable procurement and agricultural diversification.



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