

Just Socio-Ecological Transition:

*Bases, progress and
challenges in Chile*

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Acronyms and abbreviations

AFIDE	Agency for Development Financing and Investment
CITHJ	Interministerial Committee for a Just Water Transition
CITSEJ	Interministerial Committee for a Just Socio-Ecological Transition
COP	Conference of the Parties
CORECC	Regional Committee on Climate Change
CORFO	Production Development Corporation of Chile
CRAS	Council for Environmental and Social Recovery
DIPRES	National Budget Directorate
EBS	Social Well-being Survey
ECLAC	Economic Commission for Latin America and the Caribbean
ENTSEJ	National Strategy for a Just Socio-Ecological Transition
EU	European Union
GCF	Green Climate Fund
GDP	Gross Domestic Product
GHG	Greenhouse Gas
ILO	International Labour Organization
IPCC	Intergovernmental Panel on Climate Change
JT	Just Transition
KCI	Katowice Committee of Experts on the Impacts of the Implementation of Response Measures
LMCC	Framework Law on Climate Change
LTSC	Long-Term Climate Strategy
MERCOSUR	Southern Common Market
MERH	Strategic Water Resources Working Groups

MINAGRI	Ministry of Agriculture
MINECON	Ministry of Economy, Development and Tourism
MINENERGIA	Ministry of Energy
MMA	Ministry of the Environment
MOP	Ministry of Public Works
MTERD	Ministry for the Ecological Transition and the Demographic Challenge of Spain
NDC	Nationally Determined Contribution
OECD	Organisation for Economic Co-operation and Development
OTSEJ	Office for a Just Socio-Ecological Transition
PERHC	Strategic Basin Water Resources Plans
PRAS	Environmental and Social Recovery Programme
SBAP	Biodiversity and Protected Areas Service
SDG	Sustainable Development Goals
SEA	Strategic Environmental Assessment
SEA	Environmental Assessment Service
TSEJ	Just Socio-Ecological Transition
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	General Assembly of the United Nations
WMO	World Meteorological Organization



Foreword

Achieving truly sustainable and inclusive development calls on us to gradually—but decisively—change the way we produce, consume, distribute, and interact with ecosystems and territories.

This transformation in how we move, feed, heat, and build our cities should help ensure the conditions for the progress and well-being of people and communities, while also enabling us to address the triple environmental crisis, significantly reducing greenhouse gas (GHG) emissions, lowering pollution, and halting the loss and degradation of nature.

It is precisely this vision that summarized the concept of Just Socio-Ecological Transition, an approach that considers social justice as a key factor in decision-making and seeks to address challenges that are simultaneously productive, environmental, and territorial in an integrated manner, to ensure sustainability and social inclusion.

This perspective, therefore, allows us to move toward the reconciliation of development and the environment, and presents a forward-looking vision that incorporates nature-based solutions and the participation of local communities. In this way, it emerges as an

opportunity to create quality jobs, promote more rational use and exploitation of natural resources, build cleaner living environments, and enhance the capabilities and quality of life of future generations.

Accordingly, this publication aims to present the long and fruitful debate surrounding Just Transition, which has shaped reflections between the labor, environmental, productive, and academic sectors—who for a long time developed their proposals separately and that today converge thanks to this concept. In this context, the document addresses the bases of the transition and traces the evolution of the concept from its origin, also highlighting Chile's pathway in this area. It then presents the challenges relevant to advancing the agenda for a just socio-ecological transition in the country.

We hope this document contributes as a technical and conceptual input that enables analysis, thought, and discussion on transitions toward sustainability in Chile, actively contributing to the national debate on this matter.

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Introduction

In November 2023, the Interministerial Committee for a Just Socio-Ecological Transition (CITSEJ) approved the definition of Just Socio-Ecological Transition (TSEJ) as: “The process of transformation and/or adaptation of sociocultural systems toward ecosystem balance, human well-being, and sustainable production models, within the framework of the triple crisis of biodiversity loss, climate change, and pollution, ensuring a focus on human rights, gender equality, and decent work.”

The concept of Just Transition (JT) has been integrated into multiple government, corporate, and organizational agendas, especially since 2015 following the publication of Guidelines for a Just Transition Towards Environmentally Sustainable Economies and Societies for All (ILO, 2015) and its inclusion in the preamble of the Paris Agreement (UNFCCC, 2015). Since then, numerous countries have advanced in incorporating principles of a just transition into their international climate commitments, explicitly cited in 38% of Nationally Determined Contributions (NDCs) and in 56% of long-term climate strategies (UNDP, 2022). Among these countries, Costa Rica has stood out for emphasizing inclusion, equity, and productive and labor diversification in its just transition policies (UNDP, 2022); while Spain has institutionalized the just transition through the creation of the Ministry for the Ecological Transition and the Demographic Challenge (MTERD), approving in 2019 its Strategy for a Just Transition—as a pillar of its Strategic Energy and Climate Framework, which describes and proposes the just transition of different economic sectors as

an opportunity to generate employment, improve competitiveness, and strengthen social cohesion, among other objectives (MTERD, 2019).

Chile has also made significant progress in this area. For instance, the country incorporated the concept of just transition into the 2020 update of its Nationally Determined Contribution (NDC) (MMA, 2020a) as part of its social pillar “Just Transition and Sustainable Development”, which included a commitment to create a strategy for the decarbonization process, resulting in the formulation and approval of the “Strategy for a Just Transition in the Energy Sector” (MINENERGÍA, 2021).

To reaffirm Chile’s commitment to social and environmental justice, recognizing the link between safeguarding human rights and achieving sustainable development goals, the country established in 2022 that processes would now be guided by the Just Socio-Ecological Transition (TSEJ). For this purpose, it created the Office for a Just Socio-Ecological Transition (OTSEJ) within the Ministry of the Environment (MMA, 2022b); new institutional coordination mechanisms through the Interministerial Committees for a Just Socio-Ecological Transition (CITSEJ; MMA, 2022c) and for a Just Water Transition (CITHJ; MMA, 2022d); and established two local TSEJ governance bodies to support the closure processes of operating thermal power plants in the communes of Tocopilla and Mejillones; in addition, it developed the National Strategy for a Just Socio-Ecological Transition (ENTSEJ).

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line with this definition and in response to the crises, the TSEJ calls for a comprehensive change in the way human activity develops within each ecosystem where they are carried out.

Since this TSEJ definition brought about by CITSEJ, the concept of just transition has been broadened. From early perspectives focused on employment impacts due to increasing environmental requirements on industries, progress has been made toward recognizing the interrelations between social and ecological systems, as well as the multidimensional dependence on and consequences of productive processes.

Therefore, the challenge is to implement a Just Socio-Ecological Transition process that not only promotes low-carbon development models but also addresses historical environmental inequalities, preventing the emergence of new forms of inequity within the framework of the transition.

Given the complexity of the sectors and challenges involved, and the ongoing political and academic discussion on what implementing a just socio-ecological transition entails, it is considered appropriate to provide conceptual and technical tools to foster dialogue and action among the multiple actors promoting the TSEJ agenda in Chile.

This document forms part of these tools and aims to briefly present the main conceptual changes regarding Just Transition at the international and national levels; report on Chile's progress in designing and implementing transition-related instruments; and review challenges associated with defining and implementing TSEJ policies.

To address these objectives, the text is divided into four sections: the first addresses the bases of the transition, highlighting the crises driving it and the evolution of the concept from its origins within international and academic discussions; the second outlines Chile's journey toward a just socio-ecolog-

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ical transition, detailing its current agenda and the dimensions and principles that guide it; the third identifies the challenges relevant to advancing the TSEJ agenda in the country; and the fourth presents concluding considerations that summarize the main points discussed in the document.







Bases of a just transition

The concept of just transition (...) also represents a deepening of the discussion on the relationship between human development and the environment, which emerged during the 1970s amid mobilizations related to labor rights and their convergence with environmental concerns.

Human development has undergone unprecedented changes over the past 150 years, achieving significant progress in multiple areas (health, medicine, technology, among others). However, the effects of this progress are unequal, with substantial portions of humanity still living in poverty or extreme poverty, and human development being faced to other asymmetries. Furthermore, these advances have been achieved by increasing pressures on the planet—which have grown exponentially over this period, to the extent that the scientific community now debates whether the Earth has entered a new geological era, the Anthropocene, characterized by human activity and by the fact that the greatest threat to our own survival is ourselves (UNDP, 2020).

This has led to the global emergence of various environmental challenges, including those that make up the so-called triple environmental crisis, which brings together the causes and effects of climate change, biodiversity loss, and pollution (UNFCCC, 2022a).

a. The dimension of the problem

Acknowledging and addressing the triple crisis means accepting the complexity of its problems, its relational and multidimensional characteristics, as well as the existing boundaries at a global and ecosystem scale within which humanity can operate

safely. If the boundaries are disregarded, stability of the system as a whole, and its capacity to sustain life while providing conditions for human well-being and development, fall under risk (Rockstrom et al., 2009; UNDP, 2020; Richardson et al., 2023; Hellweg et al., 2023). Consequently, these challenges interfere with the achievement of the SDGs and threaten to exacerbate inequalities, pushing millions of people into poverty (Khoday, 2020). For this reason, we must design and implement innovative, transformative, and interconnected strategies across multiple areas (energy, production, finance, etc.), grounded in principles of justice that expand human freedoms while alleviating planetary pressures at all levels of governance (UNDP, 2020).

The concept of Just Transition points precisely in this direction and also represents a deepening of the discussion on the relationship between human development and the environment. This discussion emerged during the 1970s, driven by mobilizations associated with labor rights and their convergence with environmental concerns. It gradually secured a place on the international political agenda, particularly following the United Nations Conference on the Human Environment and the adoption of the Stockholm Declaration, from 1972 onwards. These milestones marked the beginning of dialogue among countries on issues such as economic growth, air, water, and ocean pollution, and the well-being of people around the world—a dialogue that has continued and deepened through subsequent conferences, with a key milestone being the 1992 Earth Summit in Rio de Janeiro (UN, 1992), which highlighted the interdependence and joint evolution of social, economic, and environmental factors.

Following the Rio Declaration, the idea of a new development model has been widely disseminated and endorsed globally, culminating in the adoption of the

2030 Agenda for Sustainable Development in 2015 (hereinafter the SDGs or 2030 Agenda). This agenda has been reinforced by multilateral instruments such as the Paris Agreement, the Sendai Framework for Disaster Risk Reduction, and the Kunming-Montreal Global Biodiversity Framework.

Latin America and the Caribbean are not exempt from these global processes of change and risk. The countries of the region have consistently prioritized the fight against poverty, employment generation, minimum income, and basic health among their key policy concerns. Furthermore, since their economies are largely based on the intensive use of natural resources and primary sectors (agriculture, forestry, fisheries, mining, etc.), they have had a strong impact on ecosystems and biodiversity (ECLAC, 2024a). If current trends in biodiversity loss and degradation in the region persist, it is estimated that a “partial collapse scenario of several essential ecosystem services” could arise (ECLAC, 2024a, p.13). This would not only jeopardize services such as marine resource extraction and food provision but also result in an estimated economic loss of 3.4% in GDP—significantly higher than the projected global loss of 2.3% in GDP (ECLAC, 2024a). Such a situation could escalate the persistent problems of inequality and low growth that characterize regional development (UNDP, 2021), increase vulnerability (WMO, 2024), undermine the development gains achieved so far, and limit the capacity of countries to improve the well-being of their populations in a sustainable manner (ECLAC, 2024b).

b. Transition as a response: origins in the labor movement and the international agenda

The transition toward sustainable and just models, as a response to the triple crisis, with particular emphasis on the climate crisis, has emerged as a global objective (UNFCCC, 2022b). In a much broader sense than when adopted in the 1970s, today Just Transition applies to socio-economic, labor, and energy dimensions, among others, recognizing social protection as a means to mitigate the impacts of the transition itself. This calls for “inclusive and participatory approaches that leave no one behind” (UNFCCC, 2023, p.34).

While Just Transition aims to generate positive outcomes, it can also create disruptions that, if not properly managed, may entail high social costs (Alatorre et al., 2023). The key question is no longer whether a

The origins of just transition trace back to the U.S. labor movement of the 1970s and 1980s, which called for the protection of workers affected by the closure of energy and chemical industries.

transformation toward sustainability is necessary on a global scale, but rather how to make it a reality now and in a just manner, addressing the structurally unequal distribution of the costs and benefits of current models (UNEP, 2024).

b.1. Origin in the U.S. labor movement

The origins of just transition trace back to the U.S. labor movement of the 1970s and 1980s, which called for the protection of workers affected by the closure of energy and chemical industries that were unable to adapt to new regulations on water and air pollution (Stavis & Felli, 2015; UNDP, 2022). The term “just transition” is widely thought to have been coined by the US labour and environmental activist, Tony Mazzocchi (Trade Union Congress, 2008), who adopted it in his proposal for a “Superfund” to compensate affected workers with minimum income, education, and support to help them move out of hazardous occupations. The proposal began to gain traction among trade unions and environmental groups, becoming a union-led response to the challenge of reconciling emerging environmental policies with the fate of workers (Mazzocchi, 1993; Goods, 2013).

Since the early 1990s, trade union organizations started to advance their proposals into the international agenda, particularly following their integration into the Commission on Sustainable Development, established in 1992 (Silverman, 2006). However, it was not until 1997 that the Oil, Chemical and Atomic Workers’ Union (OCAW)—to which Mazzocchi belonged, adopted a resolution explicitly calling for a just transition, thus paving the way for its subsequent inclusion in other organizations such as the Canadian Labour Congress in 2000 and the British Trades Union Congress in 2007 (Stavis & Felli, 2015).

From the 2000s onward, trade unions became key advocates of just transition in various global events, such as the Earth Summit 2002, and—along with green jobs initiatives—these ideas became the cornerstones of labor environmentalism (Stavis et al., 2018). Both elements, just transition and green jobs, began to strongly influence United Nations institutions, particularly UNEP,

United Nations Framework Convention on Climate Change (UNFCCC), and the International Labour Organization (ILO). This influence is reflected in UNEP's role in the 2006 Trade Union Assembly on Labour and Environment (UNEP, 2007), contributions to the climate debate starting with COP15 in 2009 (Rosemberg, 2020), and the prominent place given to just transition at the 102nd Session of the International Labour Conference (2013), which laid the groundwork for the publication of the "Guidelines for a just transition towards environmentally sustainable economies and societies for all" (ILO, 2015).

The first formal inclusion of the term appeared in the Cancun Agreements adopted at the COP16, where the need to ensure a just transition of the workforce and the creation of decent work and quality jobs in the context of climate change was recognized.

Specifically regarding the ILO Guidelines, these defined a set of principles and operational tools around which to design national-level policies and measures for a just transition, aiming to address environmental change and prevent negative impacts on workers through the creation of decent work (ILO, 2022; Gambhir et al., 2018). They constitute the first global guidelines established by a specialized United Nations agency, agreed upon by governments, employers' and workers' organizations from 187 countries, recognized as a major victory for the international trade union movement after years of advocacy (International Trade Union Confederation, 2017; Dell'Amico et al., 2024).

b.2. The international agenda: integration of labor and climate agendas

Driven by the momentum of trade union organizations, just transition has progressively gained prominence in the international agenda over the past decade, becoming one of the central topics in global climate negotiations and policies.

Regarding climate negotiations, the first formal inclusion of the term appeared in the Cancun Agreements adopted at COP16, where the need to ensure a just transition of the workforce and the creation of decent work and quality jobs in the context of climate change was recognized (UNFCCC, 2010). One year later, "just

transition of the workforce" was established as one of the work areas of the newly created Forum on the Impact of the Implementation of Response Measures (UNFCCC, 2011). The language used in both documents reflects the prevalence of a labor-centered approach, which was reinforced through its inclusion in the final document of the Rio+20 Conference (UN, 2012) and in the preamble of the Paris Agreement (UNFCCC, 2015), where the relationship between just transition, sustainable development, and climate action was further strengthened.

Countries have developed much of their diverse policies, programs, and institutions on just transition through their Nationally Determined Contributions (NDCs) and pursuant to what has been established under the Paris Agreement (Annex). By 2022, 65 countries had explicitly included the concept in their NDCs, and 29 had incorporated it into their Long-Term Climate Strategies. However, most of these initiatives have focused on the energy sector and on male-dominated industries, posing the risk of perpetuating existing vulnerabilities and overlooking systemic inequalities by failing to address the broader consequences of the transition for entire communities and across diverse sectors and industries. This is particularly relevant given the differentiated impacts of the transition on territories, sectors, and communities that are more dependent on fossil fuel use and have lower levels of economic diversification (UNDP, 2022).

The growing inclusion of the concept in governmental programs prompted 53 heads of delegation to sign, in 2018 during the "Just Transition COP" in Katowice, the "Silesia Declaration on Solidarity and Just Transition." Later, in 2021, 30 signatories endorsed the "Declaration on Supporting the Conditions for a Just Transition Internationally" (Government of the United Kingdom, 2021). Both declarations drew heavily from the ILO Guidelines, establishing principles primarily focused on workers.

A key milestone occurred at COP27, with the creation of the "Just Transition Work Programme," which broadened the concept's scope to encompass "energy, socio-economic, labor, and other dimensions" (UNFCCC, 2022b), and established a dedicated forum for its discussion within the UNFCCC framework at least until 2026, when its continuation will be evaluated (UNFCCC, 2023). This broader perspective has been reaffirmed by other international organizations, with just transition being described as "a large-scale transformation with implications for countries at all levels of development, across all industry sectors, and in urban and rural areas alike, toward sustainable economies and societies" (ILO & UNEP, 2023). At the same

time, it seeks to “ensure that all people, societies, and countries benefit from the opportunities generated by building future economies aligned with the 1.5°C goal” (UNDP, n.d.).

c. Insights from academia

Interest in the concept of Just Transition within academic circles has increased since the 2000s, initially approached from a historical perspective of the concept and later expanding to its applications in contemporary contexts (Wang & Lo, 2021). Over the past 20 years, this interest has evolved in line with debates on sustainable development, human rights agendas, and climate change concerns (Gerrard & Westoby, 2022).

During this period, beyond the labor domain, various forms of “just transitions” have been explored in relation to specific dimensions, including energy and decarbonization (García-García, Carpintero & Buendía, 2020; Jenkins, 2023), agriculture and rural areas (Bizikova et al., 2020; Otlhogile & Shirley, 2023), urbanization and transport (Hughes & Hoffman, 2020; Ternes et al., 2024), mining (Sadan et al., 2022; Measham et al., 2024), and capabilities and education (Majekolagbe, 2023; Droubi et al., 2023), among others. Recently, Neuhuber (2025) identified five topics as the most common in the literature associated with just transition: work and employment, environmental adaptation, sustainable transition, justice and redistribution, and climate policy.



Gentil Igon Rencoret

The diversity of perspectives in the academic-scientific literature, along with the multiple proposals from researchers and institutions, reflects the heterogeneity of views on just transition and the absence of a universally agreed definition or framework for “transitions,” which complicates communication, debate (Wang & Lo, 2021), and practical applications (Snell, 2018).

Aware of these challenges, and for the purposes of global climate policy, the Intergovernmental Panel on Climate Change (IPCC) conducted an extensive literature review and proposed the following definition in its Sixth Assessment Report (Pathak et al., 2022, p. 75):

[Just Transition] refers to a set of principles, processes, and practices aimed at ensuring that no individual, worker, place, sector, country, or region is left behind in the transition from a high-carbon economy to a low-carbon economy. It includes respect and dignity for vulnerable groups, the creation of decent work, social protection, labor rights, equitable access to and use of energy, and social dialogue and democratic consultation with stakeholders.

...A just transition involves specific and proactive measures [...] to ensure that any negative social, environmental or economic impacts of transitions across the economy are minimized, while maximizing benefits for those disproportionately affected. These proactive measures include poverty eradication, regulation of prosperity, and job creation in “green” sectors. Furthermore, governments, polluting industries, corporations, and those with higher capacity to pay higher associated taxes can bear the costs of the transition by providing social safety nets and adequate compensation to individuals, communities, and regions affected by pollution, marginalized, or experiencing negative impacts brought about by the transition from a high- or low-carbon economy and society.

This definition establishes a close relationship between just transition and climate mitigation, emphasizing that the impacts and benefits of transitions to low-emission economies must consider all people and sectors. However, this mitigation-focused approach has drawn criticism regarding the needs for adaptation and resilience, particularly in developing countries, leading to the view that “climate mitigation will only succeed if it is part of a just transition that promotes human well-being” (Jakob et al., 2019). In this context, some

institutions have suggested the idea of “just resilience” to refer to climate adaptation measures applied fairly and equitably, serving as the mitigation-equivalent of just transition (Lager et al., 2023). Beyond this debate, the shift of just transition from being primarily a goal of labor movements to being part of the global framework to address climate change demonstrates the mobilizing potential of the term (Gerrard & Westoby, 2022).





Progress in Chile: from environmental and social recovery to a just socio-ecological transition

Chile has been advancing its environmental institutional framework, beginning in 1994 with Law No. 19,300 on the General Bases of the Environment, and strengthened in 2010 with the creation of the Ministry of the Environment, the Environmental Assessment Service, the Environmental Superintendency, and Environmental Courts (Law No. 20,417, Ministry General Secretariat of the Presidency). These advances have been further reinforced in recent years with the approval of the Framework Law on Climate Change (LMCC), the establishment of the Biodiversity and Protected Areas Service (SBAP), and the ratification of the Escazú Agreement.

Despite these efforts, the country continues to face challenges related to air, water, and soil pollution, biodiversity loss, and the overexploitation of natural resources, among others. These issues reflect the structural characteristics of a small, open economy based on the extraction and use of natural resources (OECD, 2016) and highlight the close link between economic growth and environmental pressures (OECD, 2024).

In this regard, the report by the Special Rapporteur of the UN High Commissioner for Human Rights (UNGA, 2024) emphasized the connection between environmental impacts and the well-being of the population, as evidenced in the so-called “sacrifice zones,” with issues such as air pollution, access to safe and sufficient water supply, adaptation to the climate crisis, and the effective enforcement of environmental laws and policies. Under this diagnosis, the report highlighted that one of the objectives of the current government is to “achieve a just social and ecological transition, moving away from an ‘extractivist’ approach that exploits both people and nature” (UNGA, 2024, p.17). Therefore, it is necessary to strengthen institutional progress with

this approach, incorporating policies and actions that directly improve environmental and social conditions to promote well-being.

a. First steps: initiatives from the territories

In Chile’s pathway toward the adoption of a Just Socio-Ecological Transition (TSEJ) policy framework (Figure 1), a key factor was the influence of adopting the Paris Agreement in 2015. While the Agreement primarily focused on mitigation, adaptation, and means of implementation for climate change, it also allowed for greater emphasis on “climate justice” within actions addressing the climate crisis (UNFCCC, 2015).

However, even prior to this international commitment, Chile had initiatives aimed at addressing disparities in environmental costs and benefits, particularly in territories that have historically served as hubs for mining and energy development and who have suffered the negative impacts of high-carbon production activities. In this context, with the objective of “improving the environment and the quality of life of residents in environmental sacrifice zones” (MMA, 2022a, p.51), the Environmental and Social Recovery Programmes (PRAS) were launched in 2014 in four of the most affected communes by industrial activities: Huasco, Quintero, Puchuncaví, and Coronel.

The PRAS include a set of environmental, social, and cross-cutting objectives and measures, developed collaboratively through multi-sector governance bodies known as Councils for Environmental and Social Recovery (CRAS). They have been implemented aiming at “promoting environmentally sustainable development” in these

communes (MMA, n.d.a) and to evidence that “harmonious coexistence between industrial activities, environmental protection, and a good quality of life is possible” (MMA, 2020b). These programs could be considered Chile’s first experiences of a just socio-ecological transition (MMA, 2023a, p.39) and have had significant influence on the National Strategy for a Just Socio-Ecological Transition (ENTSEJ) currently being proposed by CITSEJ.

The PRAS, published between 2017 and 2018, also acknowledge what was described in Chile’s second Environmental Performance Review conducted by the OECD in 2016: by emphasizing the growth of Chile’s “small and open economy” (OECD, 2016, p.22), the review stresses that this economy is based in natural resources, and that their extraction and use, combined with rising consumption, increase environmental pressures and exacerbate associated conflicts (OECD, 2016). In this way, just as socio-environmental injustice and mobilizations in the “sacrifice zones” led to the development of the PRAS, the OECD review also recognized that environmental conflicts at the national level have largely driven the reforms previously undertaken by the government to advance the strengthening of environmental democracy (OECD, 2016).

b. Pathway for integrating Just Socio-Ecological Transition (TSEJ) at the sectoral level

The publication of the Coal-Fired Power Plant Retirement Agreements (MINENERGÍA, 2020a), reached between the Ministry of Energy and five energy-generating companies located in Huasco, Quintero-Puchuncaví, Coronel, Tocopilla, and Mejillones, represented a significant step in advancing the decarbonization agenda. Notably, the first four communes overlap with those where the Environmental and Social Recovery Programmes (PRAS) were implemented.

The following year, the Strategy for a Just Energy Transition was published (MINENERGÍA, 2021), aiming to promote sustainable economic development through clean, safe, and efficient energy, support the transition of jobs toward the renewable energy sector, and mitigate the economic and labor impacts on workers dependent on coal-based energy generation. In the same year, the Ministry of Energy also published the National Green Hydrogen Strategy, envisioning the use of hydrogen to contribute to both energy and productive transition (MINENERGÍA, 2020b).

However, these energy transition policies have undergone certain challenges. Chile’s process of phasing out coal-fired power plants triggered protests, particularly from unions. In response, the Supreme Court instructed the Ministry of Energy to adopt “measures aimed at reintegration or professional retraining of workers affected” by the decarbonization of the energy matrix (Judicial Branch, 2021). In 2022, the National Energy Policy was updated, emphasizing the strengthening of human capital in the energy sector in line with new technologies, industry requirements, and the needs of people and territories. The policy prioritized the participation of indigenous peoples, women, and workers “directly or indirectly affected by the closure of coal-fired generating units, as well as their families and communities” (MINENERGÍA, 2022a, p.43). The policy also committed to the development of people-centered just transition strategies, fostering job creation and environmental protection. In this context, the Energy Agenda 2022-2026, also published in 2022, reinforced this commitment by proposing just energy transition plans in communes hosting coal-fired power plants, aiming to “promote local development, protect employment, and design employability and labor transformation plans” (MINENERGÍA, 2022b, p.69).

These energy transition policies placed employment risks associated with decarbonization at the center of the discussion, underlining the need to address the social and environmental challenges of such processes, which were considered in addition to those already present in communes with PRAS. Consequently, Chile’s 2020 NDC incorporated as part of its climate commitments a social pillar of “Just Transition and Sustainable Development” (MMA, 2020a) to emphasize the close connection between climate and socio-environmental justice dimensions.

The publication of the Coal-Fired Power Plant Retirement Agreements, reached between the Ministry of Energy and five energy-generating companies located in Huasco, Quintero-Puchuncaví, Coronel, Tocopilla, and Mejillones, represented a significant step in advancing the decarbonization agenda.

Under the principle of equity, a just socio-ecological transition paves a path that maximizes opportunities while avoiding negative externalities on the well-being of communities, workers, and ecosystems, ensuring that no one is left behind and that the rights and opportunities of future generations are not compromised.

In this same line, the subsequent strengthened NDC (MMA, 2022e) provided a formal structure to the TSEJ concept, adding the term “socio-ecological” to more explicitly highlight the interconnection between social and ecological systems, aiming “to refocus economic development that underpins the country’s social, economic, and environmental inequities” (MMA, 2025, p.12). In this strengthening of the 2022 NDC, TSEJ is defined as “a process that, through social dialogue and collective empowerment, seeks to transform society into a resilient and equitable one,” indicating that “innovative and sustainable productive sectors at the territorial level” are required to achieve this; that the transition must ensure “decent work, gender equality, territorial and intergenerational equity, climate resilience, and social justice,” and that it must aim “at achieving ecological balance and the physical, mental, and social well-being of people” (MMA, 2022b, p.2).

Under the principle of equity, a just socio-ecological transition paves a path that maximizes opportunities while avoiding negative externalities on the well-being of communities, workers, and ecosystems, ensuring that no one is left behind and that the rights and opportunities of future generations are not compromised.

Pursuant to the definitions of the last NDC¹ and their strengthening (2020 and 2022), many sectors have incorporated TSEJ-related principles, as well as others related to sustainable development and climate action in their programs and policies. This has enabled their adoption by both public and private institutions, at the national, regional and local levels.

¹ During 2025, Chile will issue an update of its Nationally Determined Contributions (NDC) in line with the country’s commitment to review them every five years as from 2020. All undertaken commitments in prior NDCs must be upheld and emphasis must be placed in climate actions planned for the following 10 years.

In this regard, it is worth noting that several of these policies and programs are the result of integrated work among various sectors and ministries that, in defining transition proposals, have recognized the need to coordinate visions, efforts, and instruments.

An example of this is the mining sector, whose policies and instruments have focused on promoting the supply of strategic minerals necessary for the transition to renewable energies—such as copper, lithium, and rare earth elements—through instruments such as the National Mining Policy 2050 (MINMINERÍA, 2023) and the National Lithium Strategy (Government of Chile, 2023b). In addition, instruments have been developed related to just transition processes, particularly those addressing environmental liabilities derived from mining activities, such as abandoned sites and tailings deposits, which are covered in the National Plan for Tailings Deposits for Sustainable Mining (MINMINERÍA, 2019). Complementarily, the Tailings Agenda 2025/2026 was launched, proposing short-term actions aimed at improving the assessment, registry, and visualization of tailings information; encouraging the relocation and remediation of abandoned tailings; and promoting the reprocessing and reuse of tailings (MINMINERÍA, 2025).

In addition to sectoral initiatives that directly or indirectly refer to and contribute to a just socio-ecological transition, it is important to highlight the intersectoral policies and instruments that incorporate this approach. Among them is the National Sovereignty Strategy for Food Security (MINAGRI, 2023), led by the Ministry of Agriculture, which proposes productive transformations in sectors such as agriculture, fisheries, and aquaculture, and integrates the JSET as a cross-cutting dimension that promotes “the development and adaptation of incentives and support instruments for a just agroecological transition and regenerative production” (MINAGRI, 2023, p.31). Along these lines, the Roadmap for a Circular Chile by 2040 (MMA, 2021a), prepared by the Ministry of the Environment, emphasized the need to accelerate the transition toward a circular economy and move toward “economic processes [that] regenerate natural systems instead of degrading them” (MMA, 2021a, p.6). It establishes a set of long-term goals, including the creation of 100,000 green and decent jobs by 2030. This has led to collaboration between the Production Development Corporation (CORFO) and the MMA in implementing the Transforma Program for Circular Territories, derived from this roadmap.

Several of the initiatives described are framed within sustainable development policies, for which the country has set a roadmap in Chile's strategy for the Implementation of the 2030 Agenda (Government of Chile, 2023a), which established "the need to transform the relationship between human beings and nature in order to achieve a just socio-ecological transition" (Government of Chile, 2023a, p.10).

Within the framework of climate policies, the Long-Term Climate Strategy (MMA, 2021b) established "the transition toward sustainable and inclusive development no later than 2050" as its long-term vision, introducing mitigation and adaptation measures for different productive sectors. These measures were reinforced following the enactment of the Framework Law on Climate Change (LMCC), considered a major step forward for incorporating into national legislation a definition of "climate equity and justice"² and the objective of "transitioning toward a low GHG emission and low climate drivers pathway" (MMA, 2022f). This law, in addition to establishing duties regarding adaptation, climate justice, and intergenerational solidarity across different sectoral ministries, ordered the creation of action plans for regional and municipal governments, through which the principles of TSEJ have been replicated at the subnational level (CORECC Atacama, 2023).

Finally, one of the major milestones in terms of environmental justice corresponds to Chile's ratification of the Escazú Agreement, along with the recently approved plan for its implementation (MMA, 2024a). The relevance of this regional agreement lies not only in addressing the tensions generated by increasing socio-environmental conflicts and their consequences, which mainly affect environmental defenders (UNGA, 2024b; Valenzuela-Fuentes, Alarcón-Barrueto & Torres-Salinas, 2021; Carranza et al., 2020), but also in seeking to ensure access to information, participation, and justice mechanisms that promote democratic action in responding to socio-ecological crises (MMA, 2024a).

c. Current TSEJ Agenda

Based on the initiatives that have advanced the Just Socio-Ecological Transition (TSEJ) agenda, such as the Programs for Environmental and Social Recovery; the international agreements ratified and commitments undertaken by Chile through its NDCs; and the public policies and sectoral instruments that have incorporated or contribute to the transition—the Government of Chile has focused its TSEJ agenda on two complementary work streams: one oriented toward water management, and the other focused on territories where decarbonization processes are underway.

In line with the complexity inherent in the just socio-ecological transition, and with the aim of articulating public policies already formulated around it, the Government of Chile deemed it necessary to create intersectoral governance at the central level to coordinate and integrate, with various stakeholders, the initiatives being promoted for the transition. For this purpose, in 2022, as previously mentioned, the Interministerial Committee for a Just Socio-Ecological Transition³ (CITSEJ) and the Interministerial Committee for a Just Water Transition⁴ (CITHJ) were established.

Based on the idea of just socio-ecological transition adopted by these committees, work has been defined at the subnational level. The just water transition agenda is grounded in the concept of water security as established in the Framework Law on Climate Change, which recognizes the importance of water both for consumptive and non-consumptive uses related to subsistence, health, and economic development, as well as for ecosystem conservation and preservation, "taking into account the natural characteristics of each basin" (MMA, 2022f). As described in this definition, actions have been focused at the basin scale, prioritizing one per country's region,⁵ where, in close coordination with

² "It is the duty of the State to ensure a fair allocation of burdens, costs, and benefits, safeguarding the ability of future generations to meet their own needs, with a gender perspective and particular emphasis on sectors, territories, communities, and ecosystems vulnerable to climate change. Climate justice seeks the fair treatment of all people, as well as the prevention of discrimination that may arise from certain policies and decisions intended to address climate change." (Section 2(d)), Law 21,455 [MMA, 2022, p.2]).

³ Established by Supreme Decree No. 57/2022 of the Ministry of the Environment, and composed of nine ministries: Environment; Energy; Social Development and Family; Labor and Social Security; Economy, Development, and Tourism; Mining; Health; Women and Gender Equity; and Education.

⁴ Established by Supreme Decree No. 58/2022 of the Ministry of the Environment, and composed of six ministries: Environment; Public Works; Energy; Agriculture; Mining; and Science, Technology, Knowledge and Innovation.

⁵ Exempt Resolution No. 1190 of the Ministry of Public Works (passed in May 2023 and published in June 2024) provides the details of the prioritized basins.



the Ministry of Public Works (MOP), work has begun with the objective of “promoting the participation of key stakeholders in water resource planning; improving water governance; and prioritizing the human right to water, ecosystem preservation, and sustainable productive use” (MOP, 2024, p.3). This led to the creation of the Strategic Water Resources Working Groups (MERH), the design of their Strategic Basin Water Resources Plans⁶ (PERHC)⁷; and a collaborative work with an intersectoral advising working group⁸ to draft the preliminary bill on River Basin Councils.

⁶ Both the creation, composition, and operation of the Strategic Water Resources Working Groups (MERH), as well as the regulation for the Strategic Basin Water Resources Plans (PERHC), are established under Supreme Decree No. 58/2023 of the Ministry of Public Works.

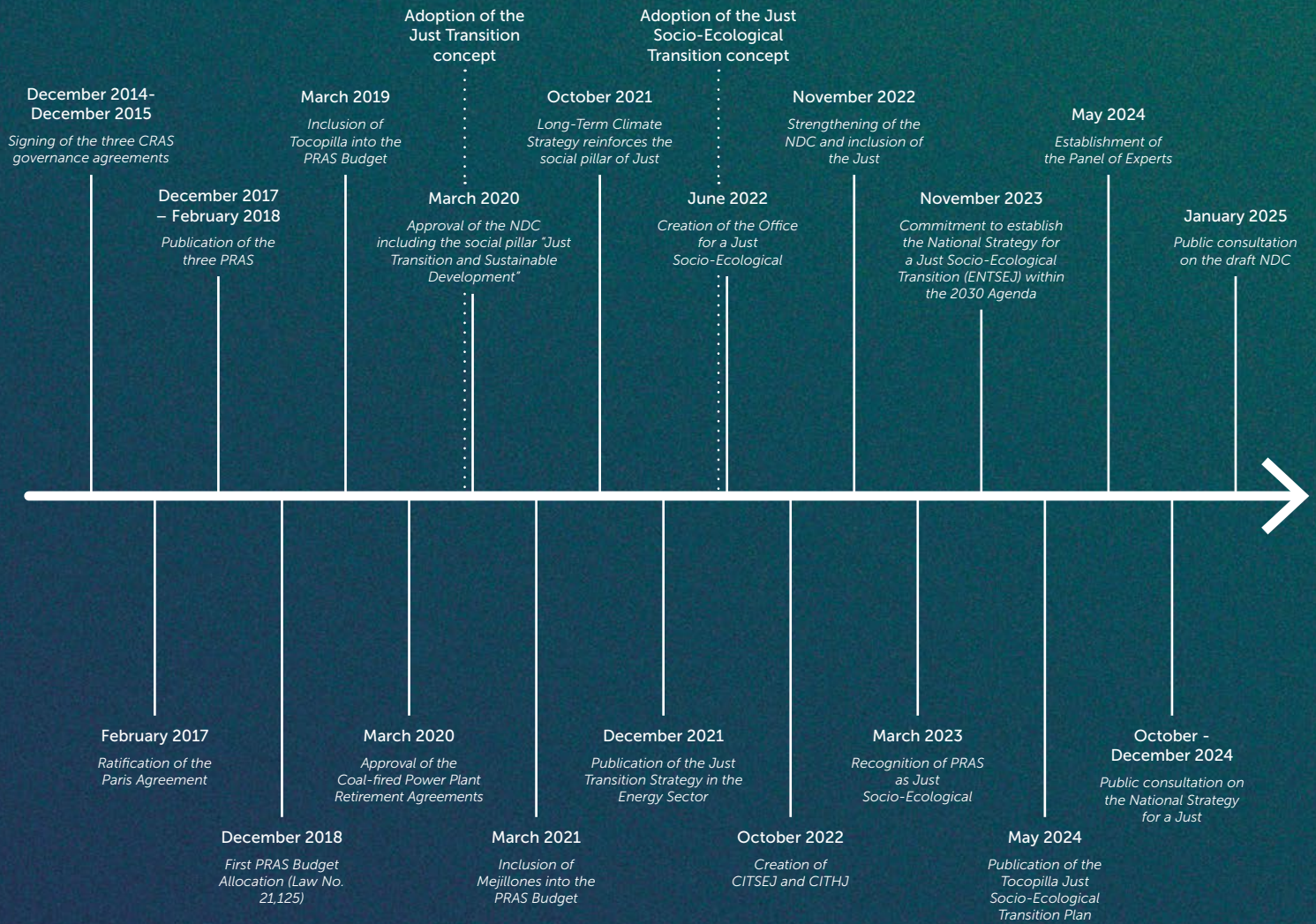
⁷ As of April 2025, eleven MERHs had been established, were operational, and in the process of developing their respective PERHCs. The goal is to prepare a total of twenty PERHCs by 2026, in accordance with Exempt Resolution No. 1190/2024 of the Ministry of Public Works.

⁸ The advising working group to draft the preliminary bill is formed by the Ministries of Public Works; General Water Department; Agriculture; Mining; Science, Technology, Knowledge and Innovation; and Environment (Official Communication No. 243307/2024 of the Ministry of the Environment).

In the case of the Interministerial Committee for a Just Socio-ecological Transition (CITSEJ), as previously mentioned, an agreement was reached on a definition of a just socio-ecological transition as “the process of transformation and/or adaptation of sociocultural systems toward ecosystem balance, human well-being, and sustainable production models, within the framework of the triple crisis of biodiversity loss, climate change, and pollution, ensuring a focus on human rights, gender equality, and decent work.” Based on this definition, the Committee has focused its work agenda on what it has determined as “territories in transition.” These relate, on the one hand, to the communes of Huasco, Quintero-Puchuncaví, and Coronel, where the Environmental and Social Recovery Programmes (PRAS) are already being implemented. The work in these territories focuses on improving the monitoring of compliance with program measures, defining priority actions for implementation, and strengthening governance mechanisms. On the other hand, the communes of Tocopilla and Mejillones, affected by the closure or conversion of coal-fired power plants, are in the process of establishing governance structures and defining their Just Socio-Ecological Transition Plans.

The implementation of the water and territorial agenda is coordinated by the Office for a Just Socio-Ecological Transition (OTSEJ) of the Ministry of the Environment.

Fig 1. Evolution of the Just Socio-Ecological Transition en Chile.



Building on this work and the experience of integrated intersectoral collaboration and its projection, the CITSEJ entrusted the OTSEJ with the preparation of the National Strategy for a Just Socio-Ecological Transition (ENTSEJ), developed with the support of UNDP.⁹ Regarding the preparation of this Strategy, which began in 2023, it is worth highlighting that, procedurally, the ENTSEJ was subject to a Strategic Environmental Assessment (SEA)—a mechanism designed to incorporate environmental and sustainable development considerations into public policy-making (MMA, 2015). The SEA was applied throughout all stages of preparation and approval, including a public consultation process for the draft strategy, which helped strengthen the instrument, improve inter-institutional coordination—engaging 17 Ministries—and expand citizen participation opportunities. As part of this process, seven national-level information sessions were held regarding the assessment, along with 26 in-person and virtual activities across the country's 16 regions. These efforts resulted in over 300 formal submissions and the participation of more than 700 people (357 women and 414 men). At the same time, a Panel of Experts, composed of representatives from 30 organizations from civil society, academia, the private sector, trade unions, and various public bodies, provided inputs and recommendations regarding the key pillars and priority actions for implementing the Just Socio-Ecological Transition at the national level.

The Strategy outlines an Action Plan to 2030 for the implementation of measures agreed upon by the Interministerial Committees for Transition, integrating both nationwide actions and others specifically designed for the territories in transition. Likewise, the ENTSEJ establishes a 10-year horizon to carry out the “institutional, regulatory, social, and productive transformations required to ensure human well-being, ecosystem balance, and sustainable production models” (MMA, 2024b, p.16).

d. Principles of the ENTSEJ and the dimensions of a Just Socio-Ecological Transition in Chile

The bases guiding the implementation of Just Socio-Ecological Transition (TSEJ) in Chile are, on the one

hand, the dimensions part of the definition adopted by the Interministerial Committee for a Just Socio-Ecological Transition (CITSEJ)—ecosystem balance, human well-being, and transition toward sustainable production models—and, on the other hand, the five “fundamental principles” established in the National Strategy for a Just Socioecological Transition (ENTSEJ) to guide both the processes already underway and those to be implemented. These principles are: decent work; ecosystem approach; human rights; gender equality; and productive transformation. Below, we describe the dimensions of the TSEJ adopted by Chile and outline the principles most directly associated with each of them.

i) Ecosystem balance

Several factors contribute to this trend, including land-use change and urbanization, deforestation and the introduction of exotic species—leading to ecosystem fragmentation, as well as soil overexploitation and the concentration of water use in the forestry and agricultural industries (MMA, 2019). As a result, the threat to species and ecosystems jeopardizes the provision of ecosystem services, such as carbon capture and storage, risk reduction associated with climate change (e.g., floods and storm surges), the provision of natural goods for direct human consumption, and the generation of health benefits, landscape and tourism value, among others (SEA, 2022).

In this regard—beyond the intrinsic value of nature—the degradation of ecosystems and the loss of biodiversity pose a threat not only to ongoing ecological processes but also to human well-being and economic prosperity. Understanding this interdependence, as integrated within the socioecological perspective of transition, has fostered convergence between labor movements and environmental movements, united under the slogan “there are no jobs on a dead planet” (Barca, 2015).

Integrating this interdependence into productive activities and sociocultural processes within territories ensures long-term economic development. For this reason, within this dimension, the convergence of the principles of ecosystem approach and decent work proposed in the ENTSEJ's transition processes becomes particularly relevant. Together with the principle of productive transformation, they promote participation, partnerships, and opportunities for innovation and productive diversification required in the territories where TSEJ actions are implemented.

⁹ Based on project “Support to develop Chile's Strategy for a Just Socio-Ecological Transition,” implemented by the Ministry of the Environment assisted by United Nations Development Programme (UNDP).

In this sense, the transition agenda is coherent and in synergy with the approaches adopted in the creation of the Biodiversity and Protected Areas Service and the National System of Protected Areas (Law No. 21,600 of the Ministry of the Environment, enacted in 2023). Notably, these include the incorporation of economic instruments to promote the conservation of both biodiversity and ecosystem services. These measures, alongside the establishment of new conservation categories—such as landscape conservation areas—reinforce the importance of the interdependence between human well-being and the natural environment.

ii) Human well-being

Protecting human well-being is closely linked to the principles of promoting and upholding human rights, gender equality, and decent work, as set out in the ENTSEJ. Understanding well-being in this manner takes away the predominance of GDP as an indicator and aligns with efforts to measure well-being in a way that includes other relevant dimensions, recognizing it as a collective rather than an individual pursuit.

To expand the variables related to well-being and enable the monitoring of related indicators, different indexes have been adopted, such as the Human Development Index, proposed by UNDP. This Index, which acts as a complement to GDP, adds the dimensions of health and education, and, since its introduction in 1990, has enabled cross-country comparisons. Similarly, other tools, such as the Social Progress Index, applied in over 160 countries since 2011, have contributed to this approach. The Social Progress Index captures three main dimensions (basic needs, bases of well-being, and opportunity), which include 12 subdimensions that address areas ranging from material living conditions (such as access to services and housing) to those considering environmental quality, access to justice, and the level of social inclusion.¹⁰

Acknowledging that well-being must be measured at a multidimensional scale—encompassing, at a minimum, domains related to income, consumption and wealth, health, education, employment, participation, social cohesion, the environment, and both economic and natural hazard-related security (Stiglitz, Sen, & Fitoussi, 2009)—since 2021, Chile has measured social well-being through the conduction of the Social Well-being Survey

(EBS). This tool, based on OECD's Better Life Index and Amartya Sen's Capability Approach (MIDESO, 2023) comprises 11 dimensions that reflect social well-being, including subjective well-being, education, work in occupation, use of time, income, health, housing, environment quality, safety, social relationships, and confidence and participation (Undersecretariat of Social Evaluation, 2024, p. 2).

Based on the most recent national survey conducted in 2023, the key well-being stressors associated with TSEJ include, among others, economic insecurity and households' difficulty in covering their monthly expenses with current income; and the limitations that adverse environmental impacts impose on the ability to carry out activities, affecting one-third of the population, either through restrictions on physical activity, health problems, or difficulties in accessing water. It also shows individuals' lack of confidence toward institutions and organizations (Undersecretariat of Social Evaluation, 2024), as highlighted in the most recent UNDP Human Development Report (2024a). In addition, it draws attention to mental health conditions, which affect younger groups in particular, and to the prevalence of adverse outcomes for women relative to men across multiple well-being indicators, emphasizing the relevance of the gender equality principle advocated by ENTSEJ.

In this manner, given that EBS relates directly to the ENTSEJ well-being guiding principles, it also indirectly comprises the principle of an ecosystem-based approach within its dimensions, as it takes into account the effects the environment has on human lives. Therefore, EBS may be a relevant tool for monitoring the expected changes with the implementation of a just socio-ecological transition.

iii) Sustainable Production Models

The ENTSEJ proposed by Chile addresses this dimension mainly based on the productive transformation principle. In reference to the approaches related to the transition to more sustainable economies, it promotes the decoupling of the consumption of natural resources from production, thereby reducing their scarcity, supporting their continuity along with that of associated ecosystem services, and consequently contributing to the promotion of well-being (ECLAC, 2017). At the same time, the ideas aimed at greening the economy enhance resilience and savings, which, when aligned with social protection policies, foster responsible investment and "can become an important driver of job creation" (ILO, 2015, p.6) with a greater projection over time, as mentioned in relation

¹⁰ <https://www.socialprogress.org/social-progress-index>

The transition to more sustainable economies promotes the decoupling of the consumption of natural resources from production, thereby reducing their scarcity, supporting their continuity along with that of associated ecosystem services, and consequently contributing to the promotion of well-being.

mensions of social well-being and ecosystem balance. Such measures help to reduce economic uncertainty and promote the well-being of groups that production models have disadvantaged—such as women and rural populations—since the focus was solely on economic growth (Undersecretariat of Social Evaluation, 2024), and, at the same time, support the provision of ecosystem services that are essential for well-being and economic development, such as water (Cárdenas & Guzmán Ayala, 2020, p. 13).

to the socio-ecological dimension of the transition. This is particularly the case when decent jobs are ensured (which, therefore, directly relates to this ENTSEJ principle) in more diversified areas and with higher added value, enhancing associative entrepreneurship (ILO, 2015).

The decision to propose ENTSEJ and the incorporation of sustainable production models as one of the three dimensions set forth within the TSEJ objective align with the approaches put forward by several international organizations to address the necessary recovery following the “economic disruption” caused by the COVID-19 pandemic. In response to the strong pressures to resume economic expansion at the expense of the natural resources that sustain it, several organizations called for recovery processes to be designed in ways that promote inclusion and sustainability, proposing mechanisms to ensure that reactivation efforts take into account the reduction of emissions and foster both physical and economic resilience in the face of climate change (OECD et al., 2022; Cárdenas & Guzmán Ayala, 2020, p. 12).

Considering that Chile was above the regional average in terms of job losses resulting from the pandemic—ranking fifth among Latin American countries with the greatest employment losses (UNDP, 2023)—its indicators related to the reduction in incidence of income poverty stand out, with the 2022 measurement showing improvement compared to 2017. But the analysis of such decline confirmed that approximately 400,000 jobs have yet to be recovered after the pandemic, and that “income from employment and other freelance activities had no incidence in the reduction of poverty, [but], on the contrary, such negative evolution slowed down what could have been a greater decline [in poverty]” (UNDP, 2023, p.5-6).

From this perspective, adopting guidelines that promote economic growth while fostering resilience and generating employment also contributes to the di-



IV

Challenges of a Just Socio-Ecological Transition in Chile

Based on the description and analysis of the international and national context regarding a just socio-ecological transition, three areas are proposed to be considered to implement and maintain an agenda in this field, such as the one Chile has set out to promote. This is because the combination of uncertainty linked to crises and the proposed changes requires a long-term perspective that, together with collective attention to evolving scenarios, enables the fostering of social change (UNDP, 2024a). From this perspective, the three areas considered in this review—social and institutional coordination, political continuity, and financing—are linked to the importance of being able to make fast decisions without losing sight of the dimensions and principles underpinning the process, thereby maintaining alignment with the long-term vision aspired through the just socio-ecological transition.

The combination of uncertainty linked to crises and the proposed changes requires a long-term perspective that, together with collective attention to evolving scenarios, enables the fostering of social change.

a. Social and institutional coordination

Acknowledging both the significance of international commitments in Chile and the uncertainty stemming from the triple crisis, the outlook for a TSEJ is confronted with widespread pessimism regarding the country's capacity to respond effectively to these crises. This is because of the growing disengagement from public affairs, which is also associated with lack of confidence toward institutions, organizations, and people (UNDP, 2024a): nearly half of the population do not have confidence in local governments (45.5%), other individuals (45.3%), or the

legislative branch (77.8%) (Undersecretariat of Social Evaluation, 2024).

The resulting scenario shows that optimism has been lost regarding the possibility that change processes may result in the implementation of international agreements, and, especially, “the agreements of national elites and the efficiency of the institutional rules” (UNDP, 2024a, p.83). Therefore, the idea of a single actor driving the changes required to address the challenges posed by a TSEJ agenda for the future becomes blurred (without diminishing the responsibility of the State in these matters).

Although international agreements and institutional frameworks are essential for support, they cannot become resistance factors regarding the decisions to be made at the sub-national level regarding short-term actions and facing the particular and changing effects that the climate crisis, contamination and loss of biodiversity have and will still have in each territory.

On this matter, it is widely agreed that the processes for a just socio-ecological transition require making collective, participatory and binding decisions at several levels, which is in line with the decentralized recommendations of definitions, resources and capacities for these purposes (UNDP, 2024b; Pathak et al., 2022). This implies the promotion of entering into agreements among the parties involved, also at the sub-national level, acknowledging and respecting the roles each one of them contributes to the debate (UNDP, 2024a; Velicu & Barca, 2020).

In this regard, the importance of binding and enduring governance structures across different scales is highly significant. However, efforts should not overlap when many governance structures are working toward objectives

that may function in a supplementary and synergistic manner regarding TSEJ, also considering that, many times, the same institutional, business, citizenship, and leadership representations are involved.

On this basis, a particular coordination challenge is to identify the governance structures at the national and subnational levels, whether existing or being developed, that may be relevant to TSEJ. This will allow, together with the stakeholders involved, to determine how these structures cooperate, merge, or subsume one another, in a reorganization of priorities and modes of operation. The governance structures that have been identified as related to TSEJ and that could be considered in this process include, but are not limited to, those promoted by the energy sector (Comuna Energética Program, Decarbonization Strategy, or the National Green Hydrogen Strategy); in water management (Strategic Water Resources Working Groups); those associated with the circular economy (including the governance of the technological observatory proposed in the 2040 Roadmap); in ecosystem and biodiversity conservation (National Landscape Restoration Plan and RECOGE Plans); the committees established following the creation of the SBAP; and in climate change (committees linked to regional and local climate action plans, and CORECC); as well as the governance proposal contained in the Strategy for a TSEJ. For this, a starting point could entail the review of governance structures considered in public policies and instruments addressing at least some of the three dimensions included in TSEJ (Figure 2).

If the four factors driving social change described by UNDP¹¹ (2024a) are taken into account, as well as the promotion, coordination, and regulation of relationships among social actors participating in and influencing decision-making, an institutional framework is required that fosters and addresses the challenges of the multiple dimensions considered in a TSEJ process. Even though the creation of CITSEJ and CITHJ at a central level is a consistent step toward such purpose, similar committees should exist in all territories where the TSEJ processes are implemented, including regional and ministerial secretariats, and regional and community governments. This should be considered in light of the fact that, apart from the territories in transition included in the ENTSEJ 2030 Action Plan, the transition is understood

as a transformation of the development model toward promoting ecosystem balance, human well-being, and sustainable production as a whole. It can be approached as a continuous process of inter-institutional coordination at subnational levels, aimed at prioritizing agendas aligned with this purpose and allocating budgets across the various governments and ministries that comprise these committees.

b. Political continuity

The costs and benefits of initiatives addressing long-term challenges, such as climate change and economic development, pose a dilemma between policies that seek to maximize short-term returns and those that invest in future benefits, particularly when the latter may only be perceived and measured after successive changes in government (Finnegan, 2022; Pereira et al., 2024). Therefore, the proposal of long-term instruments (such as ENTSEJ) should take into account political scenarios and electoral processes occurring at different temporal and territorial levels.

In Chile, it has been more than 10 years since processes have started for the preparation of PRAS (2014) and almost five years since the first time a national policy has expressly mentioned a just transition (2020 NDC). Given that there have been three changes of government over the past decade, the establishment of technical staff in three regional offices of the Ministry of the Environment (PRAS Focal Points) and the operation of multisectoral governance bodies (CRAS) around local programs (PRAS), both supported by a specific budget allocation until 2023, can be highlighted as precedents that have enabled the continuity of the only program specifically focused on the transition.

When just socio-ecological transitions are posed as a long-term agenda, the actions envisaged for such purpose should avoid being subject to centralized political agendas or short-term interests promoted by specific political actors or high-emission industries. On the contrary, it is recommended to foster formal partnerships among all stakeholders involved (Malakar et al., 2025). Examples of such partnerships include the “Just Transition Agreements” in Spain—legally binding contracts that granted compensation to the communities depending on fossil fuels (Bolet, Green & González-Eguino, 2023), and the creation and financing of independent institutions among governments and companies during transition processes (Aklin, 2024).

¹¹ According to the report, the relationships among social actors, the institutions, the subjectivities and the public discourses are the four factors that have an impact in driving social change (UNDP, 2024, p. 84).

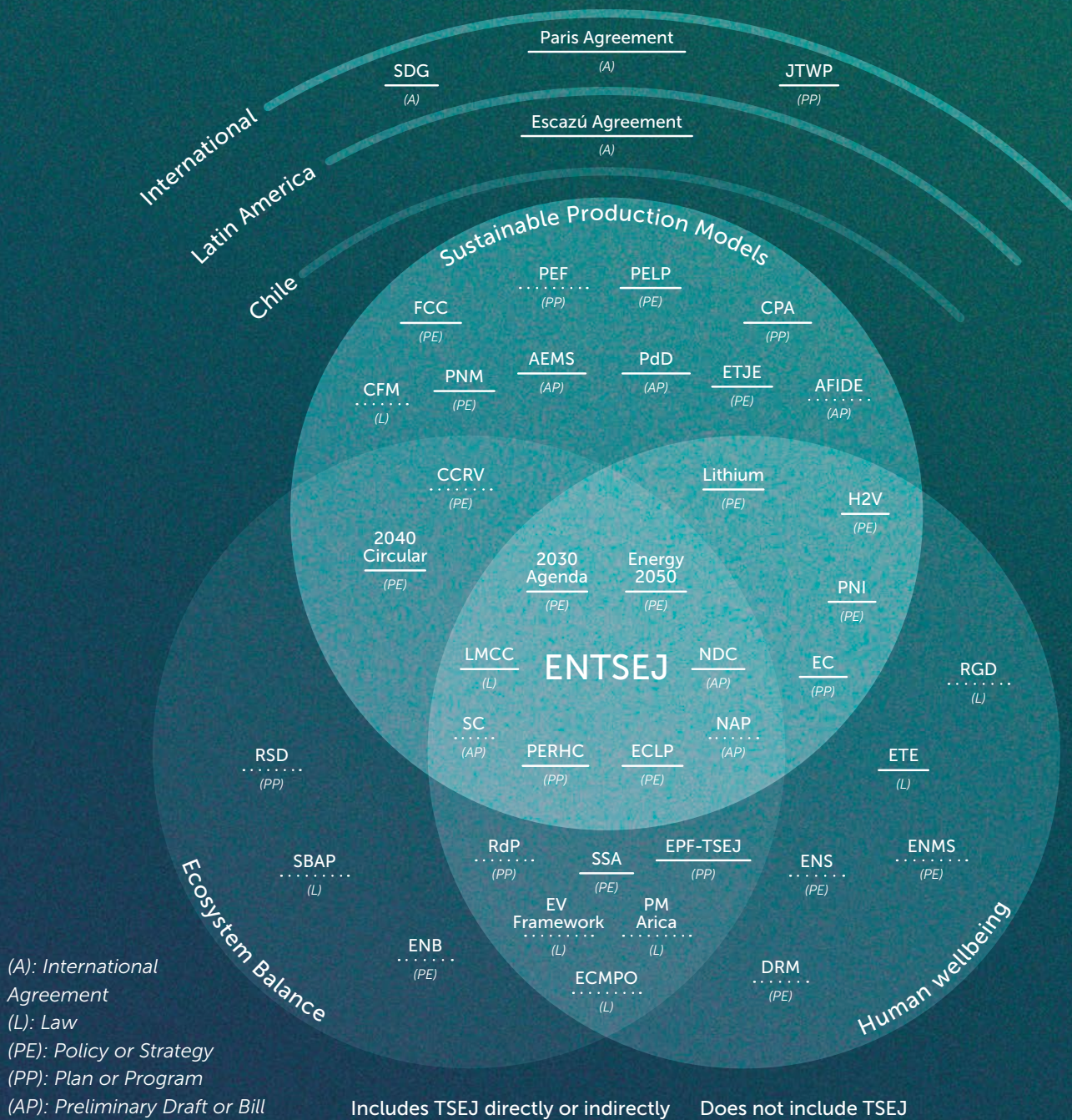


These actions achievable in a short-term may increase credibility and ease cooperation in the long term.

In the same vein, with respect to partnerships for ensuring the continuity of the TSEJ agenda, it would be relevant to strengthen coordination mechanisms and the allocation of responsibilities among the institutions directly tasked with implementing the just socio-ecological transition agenda (which, in the case of Chile, includes 13 public institutions designated as responsible for carrying out the actions outlined in ENTSEJ). To this end, recognizing those sectoral policies, programs, and laws that have incorporated or could potentially incorporate TSEJ (Figure 2) would allow ENTSEJ to be positioned as a public coordinating instrument among institutions with environmental, social, and economic competencies. It would also establish a state-level political framework based on its three dimensions (ecosystem balance, human well-being, and sustainable production models) during the transition toward sustainable and resilient societies. An example of this is the legal reorganization carried out in Italy, which grants powers to several institutions to enable their participation in an interministerial committee for the Ecological Transition Plan (Government of Italy, n.d.).

The recently published preliminary draft updating the NDC (MMA, 2025) recognizes the continuity the country has granted to this agenda in its climate policies by upholding the “Social Pillar of Just Socio-Ecological Transition.” As indicated in the 2020 NDC case, this update could be a new milestone in the TSEJ mainstreaming process and allow an institutional strengthening for at least, the next five years.

Figure 2. Text Sectoral initiatives related to the dimension addressed by TSEJ at the national, regional, and international levels.



AEMS: Preliminary Draft for a System of Classification or Taxonomy for Environmentally Sustainable Economic Activities; **AFIDE:** Bill for an Agency for Development Financing and Investment; **2030 Agenda:** National Strategy to Implement the 2030 Agenda; **CPA:** Clean Production Agreements; **EV Framework:** Environment (Framework) Law; **CCRv:** National Strategy on Climate Change and Vegetation Resources; **EC:** Comuna Energética Programme; **CFM:** Law 20551 to regulate closure of mining facilities; **2040 Circular:** 2040 Circular Economy Roadmap; **LTSC:** Long-Term Climate Strategy; **ECMPO:** Law 20249 creating the Native Peoples' Marine Coastal Spaces; **Energy 2050:** Chile's Energy Policy; **ENMS:** National Sustainable Mobility Strategy; **ENB:** National Biodiversity Strategy; **ENS:** 2030 National Health Strategy for Sanitation Goals; **ETE:** Electricity Tariff Stabilization Law; **ETJE:** Just Energy Transition Strategy; **FCC:** Climate Change Finance Strategy; **EPF-TSEJ:** Environmental Protection Fund - Citizenship Initiatives Focused on a Just Socio-Ecological Transition; **DRM:** National Disaster Risk Management Policy; **H2V:** National Green Hydrogen Strategy; **JTWP:** Just Transition Work Programme; **Lithium:** National Lithium Strategy; **LMCC:** Framework Law on Climate Change (including mitigation and adaptation sectoral plans, and regional and community action plans); **NAP:** Draft of the National Adaptation Plans; **NDC:** Nationally Determined Contribution; **PdD:** Preliminary Draft of the Decarbonization Plan; **PEF:** National Energy Efficiency Plan; **PELP:** 2023-2027 Long-term Energy Planning; **PERHC:** Strategic Basin Water Resources Plan; **PM Arica:** Arica Poly-metals Law; **PNI:** National Inspection Law; **PNM:** 2050 National Mining Policy; **RdP:** 2021-2030 National Landscape Restoration Plan; **RGD:** Law 21356 on gender representation in public and state companies' board of directors; **RSD:** Degraded Soils Recovery Programme; **SBAP:** Biodiversity and Protected Areas Service; **SC:** National Contaminated Sites Policy; **SSA:** National Sovereignty Strategy for Food Security.

c. Financing

According to estimates, the transition toward low-carbon economies will require a sevenfold increase in global investment by 2030 to remain consistent with the objectives of the Paris Agreement (World Economic Forum, 2025). While public financing plays a critical role in this process, it alone will be insufficient to meet the scale of the challenge.

By way of context, annual public investment dedicated to environmental protection in Chile was estimated at around 0.1% of the GDP in 2012–2021, six times lower than the OECD average (OECD, 2024). In parallel, public expenditure dedicated to climate change amounted to 0.07% of GDP in 2023 (DIPRES, 2024). Within this framework, increasing investment could serve as a key enabler for advancing a TSEJ agenda aligned with national priorities and ENTSEJ goals. This will require building on international experiences and best practices in public, private, and blended financing mechanisms (ILO & UNEP, 2023; IHRB & JTFL, 2024).

Regarding mixed financing mechanisms in particular, ENGIE Chile energy company has been recognized as an international example, since it has used sustainability-related loans and applied a transition strategy based on employment and training, local development and environmental management pillars (JTFL, 2024). The replication and expansion of such initiatives could be fostered, for example, through the integration of TSEJ principles into Chile's Sustainable Bond Framework¹² (Ministry of Finance, 2023a) and into the Taxonomy or Classification System for Environmentally Sustainable Economic Activities (Ministry of Finance, 2023b). This would contribute to establishing a clear and credible regulatory framework, increasing the private sector participation (World Economic Forum, 2025), while posing the challenge of developing metrics to evaluate the progress in terms of TSEJ (JTFL, 2024).

At the national level, institutions such as CORFO may play a key role in driving and financially sustaining the TSEJ agenda. Instruments such as Clean Production Agreements (CPA) could facilitate the creation of public-private alliances that enable the definition of procedures and targets for monitoring and implementing said agreements at the subnational level.

Likewise, the role of CORFO is of particular relevance, given that it has been proposed to lead the Agency for Development Financing and Investment (AFIDE), currently being discussed at the legislative level.¹³ Following the experience of financial institutions established in other countries to address the challenges of the climate crisis (such as Australia's Clean Energy Finance Corporation and New Zealand's Green Investment Finance) (MINECON, 2024), AFIDE aims to "enhance business competitiveness, productive diversification, and the country's sustainable economic growth, taking into account Chile's ratified international commitments and strategic environmental objectives" (Chamber of Deputies, 2024, p.7). The implication AFIDE may have in supporting a TSEJ agenda could serve as a significant step to an investment commitment to give continuity to initiatives that require long-term financial support on this matter.

At a regional level, ECLAC (2024c) has emphasized that the Ministries of Finance can play a key role in Latin American and Caribbean countries in seizing the opportunities to build sustainable and resilient economies, combining the use of fiscal instruments such as public investment, debt management, and climate finance mechanisms. The discussed proposals related to changing debt for climate actions are framed in this, since there is a certain relationship between the climate risk and the debt level of countries that will have their finances affected because of the crisis scenarios (Chamon et. al, 2022), which could be extended to TSEJ. Finally, initiatives like the "Just Transition for All", supported by the World Bank Group (World Bank, n.d.) and making the transition projects a priority within the 2024–2027 Strategic Plan of the Green Climate Fund (GCF, 2024), could also be considered as financing opportunities through international cooperation.

¹² Similar to the proposal for the Regulation on sustainability-related disclosures in the financial services sector (European Commission, 2024).

¹³ [Boletín N°16889-05](#).



V

Final Considerations

The country has committed to preparing a National Strategy for a Just Socio-Ecological Transition as a public policy, comprising environmental, social and economic dimensions, for which institutions both at national and sub-national levels should cooperate.

The consequences and conditions associated with climate change, pollution and biodiversity loss resulting from the development models have required increasing responses at different levels. Over the past five decades of international deliberations on these crises, numerous organizations have addressed the interdependence between human well-being and the environment in which societies operate. International organizations, academia, unions and environmental organizations and movements have contributed to the discussion of such dependencies, leading to the definition of scopes, principles, and the commitment to “just transitions” measures.

Chile has remained firmly committed to advancing the transition, being open to this discussion, creating several just transition policies and programmes (see Annex), abiding by its international agreements and showing significant progress in the last five years.

After more than a decade of experience in advancing climate goals and promoting the recovery of territories affected by social and environmental injustices, the country has committed to preparing a National Strategy for a Just Socio-Ecological Transition as a public policy, comprising environmental, social and economic dimensions, for which institutions both at national and sub-national levels should cooperate.

However, it is key to understand that each just socio-ecological transition proposal must be built based on the

realities and aspirations of each country, addressing the dimensions and scopes to be defined as a whole. Therefore, it should be deemed as an individual process of each country instead of rushing into planning transition-related policies, so it can effectively contribute to the benefits it is designed to enable (KCI, 2022). In this regard, it is important to note that this shift towards a socio-ecological approach—drawing a parallel with the integrated framework proposed by Abram et al. (2022)—should acknowledge that the transition is neither a fast transformation nor capable of predefining all the potential elements that will unfold in the future. Instead, it should be understood as a set of processes that must respond to the evolving political-relational practices and material realities that shape each context, as well as to the diverse forms of vulnerability that emerge or may arise within them.

In this sense, considering that several agencies like UNDP (2024a) and OECD (2024, 2016) have underlined the limitations and impacts of the national economic model, the fact that Chile is implementing a TSEJ may serve as an opportunity to depart from the unequal relations logic, instead of merely detach from the fossil fuels (Velicu & Barca, 2020) and then compensate those “change losers” (Weller, Beer & Porter, 2024). Consequently, projecting a TSEJ agenda should take into account strategic and multi-sector policies that enable the transformation of essential attributes of the socio-ecological systems (Abram et al., 2022; IPCC, 2018) while promoting a sustainable and resilient economy when facing the highly uncertain scenarios resulting from the triple crises.

Given the openness and complexity of this context (and the absence of a single definition or pre-set pathways for a just transition), it is particularly relevant that Chile has adopted a definition of TSEJ that sets the scope of the concept and the process for its implementation within the public sphere. This progress in concept, coupled with the experience gained in its proper ap-

plication, could be considered and become a leading example for the processes that are being promoted in other countries within the region.

While the implementation of a just socio-ecological transition at the national level requires substantial internal efforts relating to change in such different dimensions (from types of relations, educational practices, as well as structural and regulatory reforms) it is crucial to acknowledge that Chile is not an isolated agent but part of a broader, global movement that is progressively taking shape at different scales across nations. Therefore, it should keep being part of, and attentive to, the definitions on just transition that will be discussed by international bodies—such as UNFCCC (JTWP), UNGA, ILO and ECLAC—as well as the guidelines

A just transition represents a challenge to the coordination and deepening of the inclusion of dimensions, sectors, and scales that have conventionally remained segmented, and whose re-coordination has been pursued within the objectives of sustainable development and climate change. In this sense, the debate on just socio-ecological transition is, at the same time, an opportunity to reflect on the development model the country desires and aspires to in its actions.



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to be defined on this matter by economic blocs such as the G20, EU, MERCOSUR, etc.

In light of the objectives and challenges involved in a just socio-ecological transition agenda—particularly due to the need to learn how to change, innovate, and address the effects of the underlying crises, taking responsibility for the impacts of the required changes without exacerbating climate and socio-economic inequities and vulnerabilities—three interrelated challenges have been identified that Chile should ideally address: First, social and institutional coordination, taking into account governance at multiple scales, as a cross-cutting requirement in any understanding of TSEJ. This is particularly important given that the changes will require binding agreements with a shared horizon for the future, while also being capable of responding to the emergent conditions of the crises being faced. Second, the implementation of an agenda designed to regain confidence among the several sectors and that transcends changes in government (as it has been the PRAS case) through formal agreements and regulatory changes that may be necessary to link the three TSEJ dimensions. Third, an increased and diversified financing, considering national sources, and currently existing international funds and mechanisms.

A just transition represents a challenge to the coordination and deepening of the inclusion of dimensions, sectors, and scales that have conventionally remained segmented, and whose re-coordination has been pursued within the objectives of sustainable development and climate change. In this sense, the debate on just socio-ecological transition is, at the same time, an opportunity to reflect on the development model the country desires and aspires to in its actions.

Should the pursuit of a just socio-ecological transition be framed as a re-evaluation of the national development model, measures could be undertaken to confer higher institutional status to this policy, thereby reinforcing the integrative approach that underpins a just transition. This could be reflected in reviewing the relevance and scope of institutional arrangements on environmental and social regulation, as well as in the integration of the just transition as a framework for action through its conceptual incorporation into “framework” laws in the definition of the legal (as in the case of Italy), and budgeting (as in the case of New Zealand) systems.

Since there are no shortcuts to achieve sustainable development, and with no pre-set answers to the triple

crises we are going through (and which will create more frequent and challenging emerging conditions), there is little room for doubt on the need to take decisive actions. From this perspective, when reactive climate agendas have failed to change trends; when development focused solely on productive and economic growth has contributed to the current crisis conditions; and when uncertainty is an inherent condition to navigate, the just transition—with all its remaining ambiguities—holds the potential to foster reflections, dialogues, and actions that appear to constitute the responsible path forward. Therefore, ultimately, it is important to provide this agenda with a prominent space for dissemination and discussion, so that it can permeate across different territorial scales and social, economic, and institutional spheres, thereby motivating and mobilizing the necessary changes to project a more just long-term subsistence.

The debate on just socio-ecological transition is an opportunity to reflect on the development model the country desires and aspires to in its actions.

Annex

The following are examples of institutions, policies, laws and initiatives developed throughout the world that are specific to just transition. This list includes, but is not limited to, part of the initiatives spectrum that have been prepared in some countries by region to illustrate the variety of policies that incorporate just transition principles and processes.

Region*	Country	NDC	LTSC	Institutions or workgroups	Policies and Laws	Plans and other initiatives
Latin America and the Caribbean	Chile	Yes	Yes	<ul style="list-style-type: none"> · Interministerial Committee for a Just Socio-Ecological Transition · Interministerial Committee for a Just Water Transition · Office for a Just Socio-Ecological Transition 	<ul style="list-style-type: none"> · Strategy for a Just Transition in the Energy sector · Strategy for a Just Socio-Ecological Transition (**) · Draft law regulating the process of a Just Socio-Ecological Transition toward carbon neutrality (**) 	<ul style="list-style-type: none"> · Tocopilla Just Socio-Ecological Transition Plan
	Ecuador	No	No	<ul style="list-style-type: none"> · Ministry of Environment, Water and Ecological Transition 		<ul style="list-style-type: none"> · Popular Consultation on Yasuní
	Brazil	No	No		<ul style="list-style-type: none"> · Law 14,299 creating the Just Energy Transition Programme 	
	Peru	No	No		<ul style="list-style-type: none"> · Draft Law on Ecological Transition (**) 	
	Mexico	No	No		<ul style="list-style-type: none"> · Law on Energy Transition · Sustainable Taxonomy of Mexico 	<ul style="list-style-type: none"> · Just Transition framework for Mexico's sustainable recovery
	Colombia	Yes	Yes			<ul style="list-style-type: none"> · Roadmap for a Just Energy Transition
	Uruguay	No	Yes			<ul style="list-style-type: none"> · Just Transition to a Green Economy (***)

(*) According to the United Nations SDG framework (un.org); (**) Under development or consultation; (***) Not in force or completed. Source: Own elaboration, based on Climate Change Laws of the World (n.d.), KCI (2022), UNDP (2022), Chan, Wang & Higham (2024).

Region*	Country	NDC	LTSC	Institutions or workgroups	Policies and Laws	Plans and other initiatives
Europe and North America	Spain	Yes	Yes	<ul style="list-style-type: none"> · Ministry for the Ecological Transition and the Demographic Challenge · Institute for a Just Transition · Interministerial Committee for Climate Change and Energy Transition 	<ul style="list-style-type: none"> · Strategy for a Just Transition · Law on Climate Change and Energy Transition 	<ul style="list-style-type: none"> · Agreements on Just Transition · Recovery, Transformation and Resilience Plan · Framework Agreement for a Just Transition of Coal Mining and Sustainable Development of Mining Regions for the Period 2019-2027
	Scotland	No	No	<ul style="list-style-type: none"> · Just Transition Commission · Ministry for Just Transition, Employment and Fair Work (***) 		<ul style="list-style-type: none"> · Just Transition Fund · Aberdeen Transition Lab
	Italy	Yes	No	<ul style="list-style-type: none"> · Commission for the study and development of proposals for the ecological transition and for the reduction of environmentally harmful subsidies 	<ul style="list-style-type: none"> · Transition Plan 4.0 (Budget Law) 	<ul style="list-style-type: none"> · National Plan for an Ecological Transition · European Union Just Transition Fund · National Recovery and Resilience Plan
	France	Yes	Yes	<ul style="list-style-type: none"> · Ministry of Ecological Transition, Energy, Climate and Risk Prevention · Ministries of Regional Development and Ecological Transition 	<ul style="list-style-type: none"> · National Strategy for the Ecological Transition toward Sustainable Development 2015-2020 (***) 	<ul style="list-style-type: none"> · Pathway for a Just Transition of the EDF Group (company) · Action Plan for Resilient and Collaborative Water Management
	Ireland	Yes	No	<ul style="list-style-type: none"> · Just Transition Commission 	<ul style="list-style-type: none"> · Climate Action and Low Carbon Development Act 	<ul style="list-style-type: none"> · Just Transition Alliance
	Belgium	Yes	Yes	<ul style="list-style-type: none"> · High Committee for a Just Transition 	<ul style="list-style-type: none"> · General Estates for a Just Transition 	<ul style="list-style-type: none"> · Conference for a Just Transition in Belgium · Citizens Agora · Just Transition Forum · Report on the Contribution of the Federal Public Services
	Colorado (USA)	No	No	<ul style="list-style-type: none"> · Office of Just Transition · Just Transition Advisory Committee 		<ul style="list-style-type: none"> · Just Transition Action Plan
	Canada	Yes	Yes			<ul style="list-style-type: none"> · Task Force: Just Transition for Canadian Coal Power Workers and Communities · Sustainable Jobs Plan

(*) According to the United Nations SDG framework (un.org); (**) Under development or consultation; (***) Not in force or completed.
Source: Own elaboration, based on Climate Change Laws of the World (n.d.), KCI (2022), UNDP (2022), Chan, Wang & Higham (2024).

Region*	Country	NDC	LTSC	Institutions or workgroups	Policies and Laws	Plans and other initiatives
Oceania	New Zealand	No	Yes	· Just Transition Unit	· Well-being Budget	· Just Transition Program · Just Transitions Guides · Southland Just Transition · Taranaki 2050 Roadmap
	Australia	No	No			· Long-term Emissions Reduction Plan · Australia-Pacific Partnership for Energy Transition
	Vanuatu	No	No			· Port Vila Call for a Just Transition to a Fossil Fuel Free Pacific

(*) According to the United Nations SDG framework (un.org); (**) Under development or consultation; (***) Not in force or completed.
Source: Own elaboration, based on Climate Change Laws of the World (n.d.), KCI (2022), UNDP (2022), Chan, Wang & Higham (2024).

Region*	Country	NDC	LTSC	Institutions or workgroups	Policies and Laws	Plans and other initiatives
Sub-Saharan Africa	South Africa	Yes	Yes	· Presidential Climate Commission Towards a Just Transition	· Framework for a Just Transition	· Just Energy Transition Investment Plan 2023 – 2027
	Zimbabwe	Yes	No		· National Electric Mobility Policy and Market Readiness Framework · Climate Risk Management Guideline	
	Ghana	No	No		· National Framework for the Energy Transition	· Energy Transition and Investment Plan · Just Transition for a Green Economy (***)
	Nigeria	Yes	Yes			· Energy Transition Plan

(*) According to the United Nations SDG framework (un.org); (**) Under development or consultation; (***) Not in force or completed.
Source: Own elaboration, based on Climate Change Laws of the World (n.d.), KCI (2022), UNDP (2022), Chan, Wang & Higham (2024).

Region*	Country	NDC	LTSC	Institutions or workgroups	Policies and Laws	Plans and other initiatives
North Africa and Western Asia	Marruecos	No	Yes	· Ministry of Energy Transition and Sustainable Development		
	Omán	Yes	No		· National Strategy for an Orderly Transition to Net Zero	
	Israel	No	No		· "Transition to a Low Carbon Economy" Amending Decision	
	Jordania	No	No		· National Strategy and Action Plan for Sustainable Consumption and Production	

(*) According to the United Nations SDG framework (un.org); (**) Under development or consultation; (***) Not in force or completed. Source: Own elaboration, based on Climate Change Laws of the World (n.d.), KCI (2022), UNDP (2022), Chan, Wang & Higham (2024).

Region*	Country	NDC	LTSC	Institutions or workgroups	Policies and Laws	Plans and other initiatives
Central and Southern Asia	India	No	No	· Jharkhand Task Force on Sustainable Just Transition		
	Kazajistán	No	Yes		· Carbon Neutrality Strategy toward 2060	· PAGE initiative

(*) According to the United Nations SDG framework (un.org); (**) Under development or consultation; (***) Not in force or completed. Source: Own elaboration, based on Climate Change Laws of the World (n.d.), KCI (2022), UNDP (2022), Chan, Wang & Higham (2024).

Region*	Country	NDC	LTSC	Institutions or workgroups	Policies and Laws	Plans and other initiatives
Asia oriental y sudoriental	Malasia	No	No		· National Policy on Climate Change 2.0	· National Energy Transition Roadmap
	Indonesia	Yes	Yes			· Just Energy Transition Partnership: Comprehensive Investment and Policy Plan
	Filipinas	Yes	No			· Just Transition for a Green Economy (***)
	Japón	No	Yes			· Inventory of Local Government Declarations to Achieve Net-Zero Carbon Emissions · Japan Just Transition Report

(*) According to the United Nations SDG framework (un.org); (**) Under development or consultation; (***) Not in force or completed. Source: Own elaboration, based on Climate Change Laws of the World (n.d.), KCI (2022), UNDP (2022), Chan, Wang & Higham (2024).

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