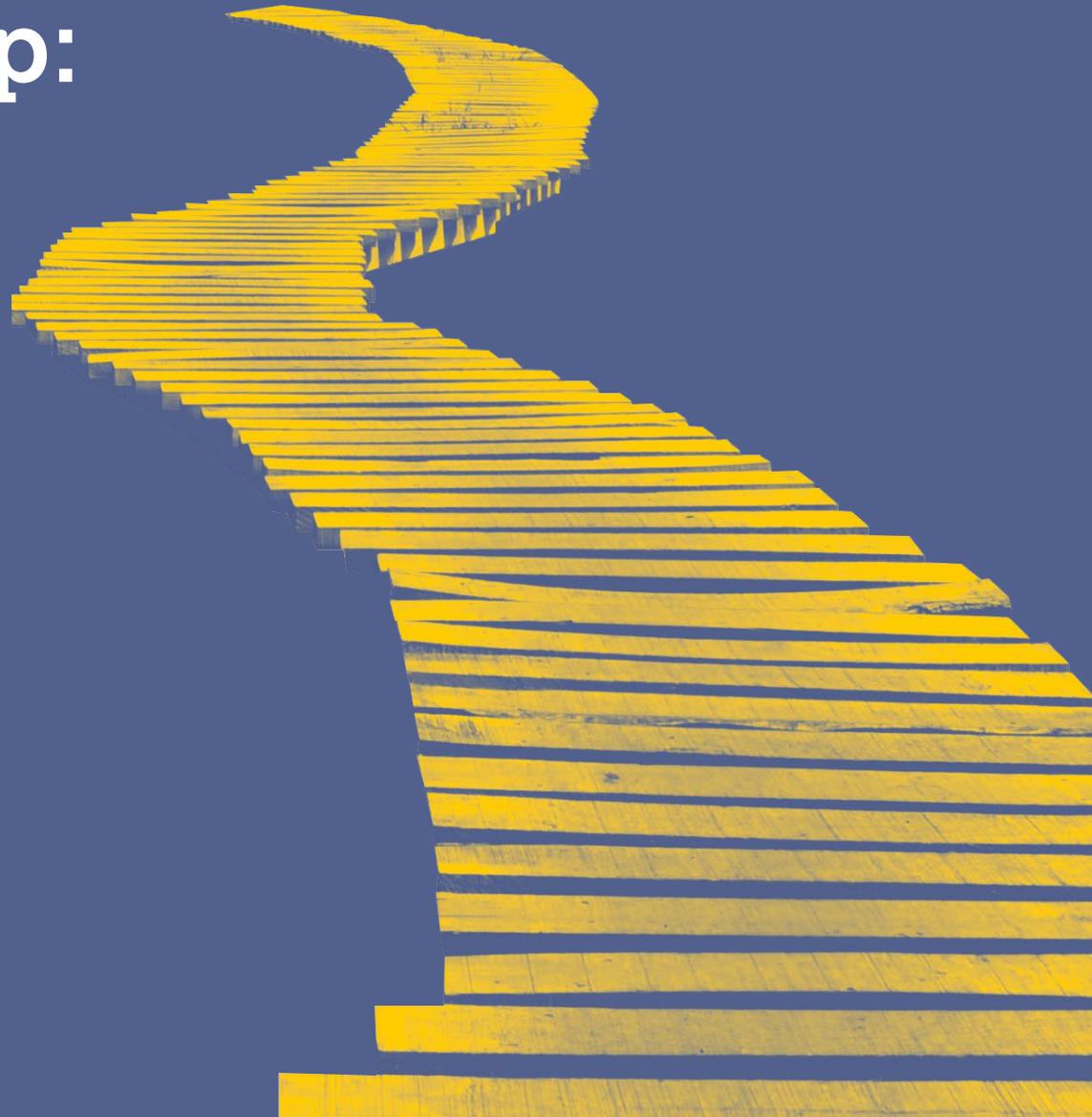


Chile's Circular Economy Roadmap: collaboration for a shared action plan



Part of a series of case studies
that exemplify elements of the
Universal Circular Economy
Policy Goals in practice.

“

The transition from the end-of-life concept to a circular economy means a paradigm shift, and requires a huge transformation in our ways of producing and also consuming. That is why we decided to lead the construction of a roadmap, inviting a cross-sector group of organisations to help us define concrete goals and objectives to make Chile a circular country. ”

Carolina Schmidt, Former Minister for the Environment (2018-2021), Chile¹

The UN has recognised that we are living in an age of three interconnected global challenges – waste and pollution, biodiversity loss, and climate change.² Each is a direct result of how we produce and use goods and services in our current linear economy. This is no less the case in Chile, which faces an acute waste and pollution crisis. While important progress has been made to ensure waste is disposed of properly, municipal solid waste (MSW) is rising rapidly and official landfills in Chile have only 12 years of useful life remaining.³ Recycling and separate collection rates remain low, and thousands of illegal waste disposal sites are causing serious problems for the health and quality of life of local residents.

Now Chile has set a long-term vision and strategy to transform how it produces, uses, and disposes of its output, tackling the interconnected challenges of the current system. *Roadmap for a Circular Chile by 2040* presents a high-level vision, supported by clear goals and an action plan that will move Chile away from a linear economic model, towards a circular economy that

eliminates waste and pollution, circulates products and materials, and regenerates nature.

The policy landscape

Roadmap for a Circular Chile by 2040 is part of an ecosystem of national policy strategies that work to create significant economic transformation. In recent years Chile has created national programmes and policies for green growth, water resources,

urban and rural development, waste, land use planning, and ecodesign, among others. The *Roadmap's* scope was defined with these in mind, and for that reason its initiatives tend to be cross-cutting, rather than centring on specific economic sectors such as mining and transport. The *Roadmap* also supports the implementation of existing policies such as Chile's 2020 action plan for the social, economic and environmental inclusion of the informal waste sector.

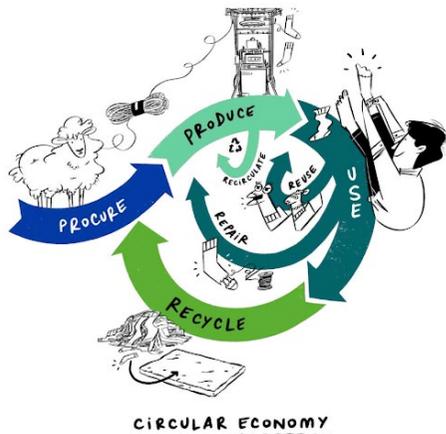


ILLUSTRATION BY DILO CON MONOS



TORRES DEL PAINE NATIONAL PARK, CHILE | SOURCE: UNSPLASH

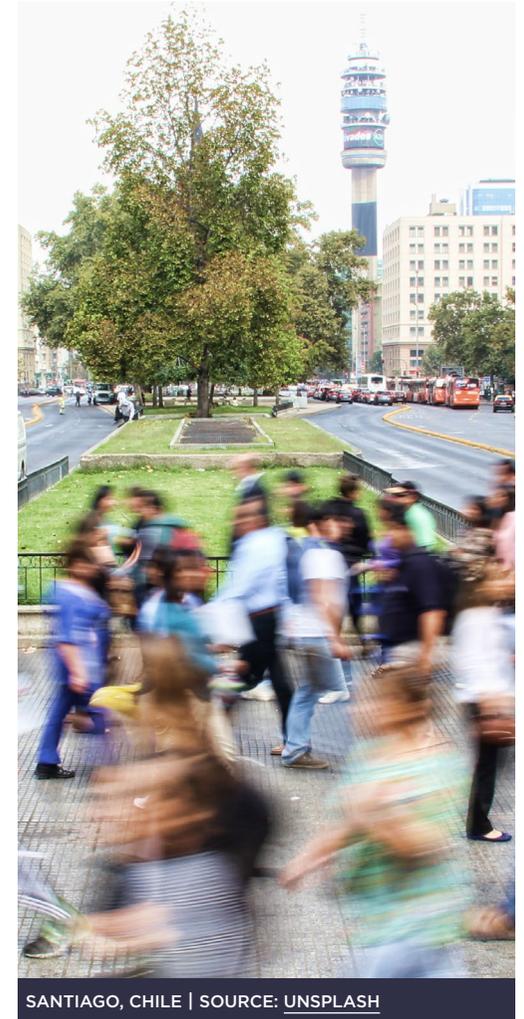
Seven goals

Seven intermediate and long-term goals sit at the centre of the *Roadmap*, serving to guide Chile's transition to a circular economy and ensure progress is measurable. When developing the goals, circular economy roadmaps of other countries were examined both to identify standard indicators that could be used, and to assess how far nations have advanced against their targets.

Prioritising jobs in Goal 1 reflects the importance of economic development and a just transition on Chile's political agenda, particularly in the aftermath of the COVID-19 pandemic as only 60% of the jobs lost in 2020 were regained in 2021.⁵ This, together with the involvement of CORFO throughout the entire process, helped to get buy-in from key stakeholders. Goals 2-6 are complementary and focus on reducing waste, increasing resource efficiency, and improving recycling rates to keep resources in the economy. Goal 7 helps tackle a key social challenge: recovering many of the country's 3,700+ illegal dump sites and putting the land to new use will, amongst other things, contribute to improving the living conditions of local residents.

The goals strike a balance between ambition and achievability, and prioritise the most pressing concerns in the Chilean context:

- 1 Generate 100,000 new green jobs by 2030, and 180,000 by 2040**
- 2 Decrease MSW per capita by 10% by 2030, and by 25% by 2040**
- 3 Decrease total waste generation by 15% by 2030, and by 30% by 2040**
- 4 Increase material productivity by 30% by 2030, and by 60% by 2040**
- 5 Increase general recycling rate to 40% by 2030, and to 75% by 2040**
- 6 Increase MSW recycling rate to 30% by 2030, and to 65% by 2040**
- 7 Recover 50% of land affected by illegal dump sites by 2030, and 90% by 2040**



SANTIAGO, CHILE | SOURCE: UNSPLASH

Four pillars

27 initiatives were crafted to achieve the seven goals, each containing specific actions and a short, medium or long-term timescale for completion (2022, 2026 or 2030). The initiatives encourage both upstream and downstream activities, promote regenerative practices, and align economic incentives and public investment with the circular economy transition. Many, but not all, of the initiatives are policy led – businesses or civil society actors also have the power to drive change. During the development of these 27 initiatives, four pillars emerged, revealing some of the particular opportunities and resonant topics in the context of Chile's circular economy transition: innovation, culture, regulation, and territories.



ATACAMA DESERT, CHILE | SOURCE: UNSPLASH

Circular innovation

Circular innovation seeks to create a robust national innovation system for a circular economy in Chile. By promoting systems thinking, it aims to embed the principles of circular design in the creation of products, services, and processes. Initiatives under this pillar seek to: generate new circular business models, encourage collaboration among businesses, set circularity standards, and focus investment and research and development (R&D) efforts towards innovative circular projects. These will be enacted at a sectoral level by business associations and innovation hubs, among other actors, and will start with the most resource-intensive industries or those that generate the most waste, such as packaging.

Circular culture

Circular culture aims to make circular habits, practices, patterns of use and reuse, and waste management models the norm. A survey identified that, compared to market, regulatory, and technological challenges, cultural factors are the most significant barrier to implementing a circular economy in Chile⁶; overcoming these through education and skills development will therefore be crucial. Initiatives under this pillar include: communications campaigns, skills programmes, the introduction of an eco-labelling system to educate consumers, and actions to strengthen transparency and monitoring. Nominated actors include schools, the Ministry of Education, and educational NGOs.

Circular regulation

Circular regulation aims to adjust Chile's regulatory framework so that it supports circular practices, as well as ensuring effective waste management and material flows. The Roadmap states that the price for waste and pollution must not be borne by society or the environment - rather, regulation should enshrine the 'polluter pays' principle. This pillar therefore aims to expand the range of products subject to the extended producer responsibility (EPR) scheme, promote reuse and recovery of waste, incentivise and facilitate waste separation at source, and strengthen waste inspections. These will be enacted by central, regional and municipal governments, for which they will receive inputs from civil society, academia and the private sector.

Circular territories

Recognising the enormous diversity between the needs, priorities and potential of Chile's 16 regions, as well as the country's ongoing process of decentralisation, this pillar seeks to adapt to regional differences and distribute resources across the country. It aims to incorporate circularity into regional policies, provide waste management infrastructure, develop regenerative rural production systems that promote biodiversity and increase natural capital, and grow secondary markets for local material flows. Nominated actors include regional and municipal governments, local social organisations, academia, and agriculture and forestry associations.

How the roadmap helps to reach climate targets

As is noted in the *Roadmap's* foreword, the circular economy transition is vital to achieving the goals of the Paris Agreement: switching to circular patterns of production and consumption can tackle up to 45% of global greenhouse gas emissions.⁷ Chile's most recent climate action plan (known as a nationally determined contribution, or NDC) identified the cross-cutting potential of the circular economy to address both the causes and effects of climate change, create high-value jobs in new markets, and integrate the informal waste sector into the economy.

The NDC set three specific commitments in relation to the circular economy:

- 1 To develop a circular economy roadmap to 2040
- 2 To develop a strategy for organic waste
- 3 To establish and implement indicators and metrics on circularity to monitor progress.⁸



The first and second commitments were completed in 2021, setting ambitious and complementary goals and steps towards achieving them. The third commitment is elaborated in Action 14A of the *Roadmap*. Steps have been taken towards fulfilling it: CORFO's circular economy *transforma* programme will monitor progress of the *Roadmap's* actions and initiatives (see **Implementation and monitoring**), and in 2022 MMA intends to launch a broader monitoring system for the country's overall transition to a circular economy, with a dashboard of circularity indicators such as material productivity and recycling rates.

Implementation and monitoring

With any strategic policy, implementation is key. Many countries set out ambitious policies but do not manage to deliver the expected outcomes. Chile's *Roadmap* recommends a timeframe for each action, and many of the initiatives are already underway through a dedicated implementation and monitoring programme. 'Leads' and 'key actors' are indicated for each initiative and action; however these are neither fixed nor exhaustive. In fact, the explicit intention was that any company, civil society organisation, municipality or citizen would be able to contribute to implementing the actions in the *Roadmap*. Aspects that relate to legislation and regulation are principally activated by MMA. In some cases, actions



are already moving forward independently, such as Fundación Basura's #ChaoBasurales project to transform illegal waste dump sites.

The core vehicle for activating and monitoring is *Territorio Circular*, a programme funded by CORFO and operational since November 2021. The programme has a seed budget of CLP 420 million (USD 500,000) for the first three years of implementation and is part of CORFO's *Transforma* series that seeks to diversify the economy and increase competitiveness in sectors with high growth potential.

Territorio Circular is being implemented by SOFOFA Hub, a spin-off of the Chilean manufacturing association SOFOFA, and is governed by representatives from the public and private sectors, academia and civil society. The setting of *Territorio Circular* within CORFO's *Transforma* series allows for collaboration with other economic development programmes; for example,



Transforma Turismo is receiving technical support to promote circular actions in the tourism sector.

SOFOFA Hub, the arm of the association that builds connections between entrepreneurs, businesses and other actors, reports to CORFO and to MMA on progress against the programme's two key responsibilities:

1 Mobilising

14 initiatives in the *Roadmap* that relate directly to innovation and economic development, and are therefore within the mandate of CORFO, will be mobilised through this programme. SOFOFA Hub is ideally placed to promote collaboration between private and public sector actors and Chile's ecosystem of innovation and entrepreneurship. It seeks to generate at least 200 circular innovations through challenges, eco-design competitions, and [business roundtables](#). Additionally, it is working with the subnational governments of three of the country's 16 regions to develop regional circular economy action plans together.

2 Monitoring

The Chilean government has recognised that monitoring progress will be critical, both for transparent and accurate reporting against targets, and to understand whether iteration is needed for any commitments or initiatives. *Territorio Circular* is responsible for monitoring progress

across all 27 initiatives in the Roadmap. Tracking will take place via an online platform that includes indicators, annual targets, verification means, and advancement level, for each action.

Challenges and lessons learned

What can other countries learn from Chile's circular economy roadmap?

Examining the experiences of other countries is an invaluable part of developing effective circular economy policies. It helps actors to build on the insights of others, learn from the challenges and adaptive steps taken, and develop policies that can work across borders. Chile drew on circular economy strategies from around the world at regional, national and sub-national levels; for example, the roadmaps of the European Union, Colombia and Amsterdam. Specific policies of other countries are also referenced in the *Roadmap*, such as the French [anti-waste law](#), insights from which will inform the development of a new product labelling mechanism in Chile.⁹

Now other nations developing circular economy strategies can draw on Chile's roadmap and the lessons learned during its development. These include:

Involving all key stakeholders to create long-term buy-in and distributed responsibilities

Collaboration among many sectors of the

economy helps to create a shared sense of participation in the transition, ensure the needs of different communities and workforces are considered, and convene the partnerships needed for implementation.¹⁰ A cross-government approach was taken to developing Chile's roadmap. The Ministries of Environment, Economy, Health, Science, Energy and Finance were all part of the Strategic Committee. NGOs, municipalities, business associations, academia, international organisations, and independent experts helped to develop the goals and initiatives. Citizens had the opportunity to contribute through a public consultation, which also grew awareness and accountability. This highly collaborative, multi-stakeholder process was considered to be as important as the final product.

Setting a timeframe that allows for a broad participatory process

Initially, the aim was to present the *Roadmap* at COP25 in November 2019. In the early stages of the process, delays in the consultancy tendering process set the publication date back by eight months. However, the extra time became an opportunity and allowed the team to involve more people, carry out regional workshops, and overall create a far more inclusive and comprehensive product. These deliberative processes can be time-intensive but are worthwhile, and it is essential to allocate sufficient time for them.

Building trust among relevant groups to create more balanced outcomes

The participation of different groups during the development of the *Roadmap* meant that actors with different interests were present at the same table. Building trust and emphasising shared goals helped to create alignment and overcome disagreements. It was also important to ensure different actors were able to contribute to the goals and actions that would affect their stakeholders. For example, the presence of NGOs led to both the inclusion of Goal 7 on recovering illegal landfill sites, and the exclusion of the incineration of municipal waste from the *Roadmap*.¹¹ Adjustments were also made to the content following the month-long public consultation process, including strengthened actions on innovation and design for circularity.¹²

Institutionalising the roadmap to ensure continuation

The 2021 Chilean general election took place later the same year that the *Roadmap*

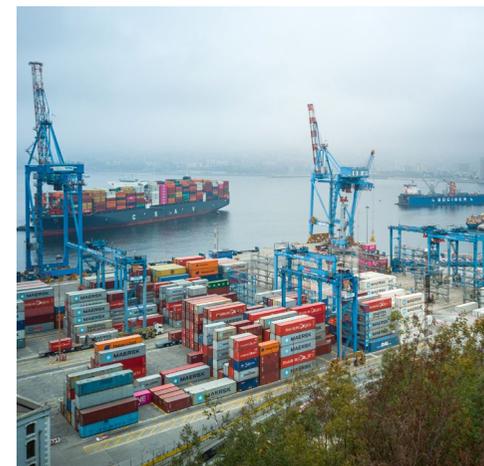


PORTEZUELO SQUARE | SOURCE: UNSPLASH

was published; thus it was important to find ways to institutionalise the strategy to ensure its continuation into the next administration and beyond. Involving so many actors in developing the *Roadmap* generated widespread interest in its execution and future outcomes. Assigning actors for each initiative and action, and setting up *Territorio Circular* between MMA, CORFO and SOFOFA Hub, ensured implementation was in the hands of organisations, and not only the government. Additionally, inclusion of the *Roadmap* in Chile's updated NDC was a strategic decision to provide long-term support for its implementation.

Consolidating waste management policies to enable local governments to act

Implementation of the *Roadmap* requires the provision of new waste collection and recycling infrastructure in many parts of the country. Chile is made up of 345 municipal governments, and in areas with lower socioeconomic status, municipalities have incurred large debts to cover the operating costs of collection and disposal of waste. The consolidation and implementation of other strategies related to waste management such as the EPR scheme for packaging, which enters into force in October 2023, and the [National Organic Waste Strategy](#) will be important to provide the necessary resources, and this is reflected in the *Roadmap* (e.g. Action 26D).



VALPARAÍSO, CHILE | SOURCE: UNSPLASH

Considering regional autonomy and priorities

Chile is undergoing a decentralisation process. Since 2021 each of Chile's 16 regions has an elected governor, and each has set an economic development strategy for their territory. For a national roadmap to be implemented in full, it is crucial to work with, rather than override, these regional strategies, respecting the priorities of different areas as well as cultural and political sensitivities. For example, *Territorio Circular* is starting to work with the Government of Los Lagos, a region in the south of the country that is a key producer of salmon, dairy, meat and crops in Chile, to identify together how circular economy solutions could help to address gaps in the existing economic development strategy, rather than taking a prescriptive or top-down approach.

Process

Developing the Roadmap for a Circular Chile by 2040 occurred in several stages, some of which ran concurrently. Seven broad stages can be identified:

The consortium hired a consultancy firm to **map key actors and initiatives** across the Chilean economy that would be essential to the transition. This exercise highlighted the critical role of the private sector and a need for greater awareness and stronger links between the private sector and academia.¹³ At the same time, an assessment of the **current status of the circular economy** in Chile provided a baseline for the *Roadmap*.

In 2019, the **Executive Committee** was formed, made up of four government agencies (MMA, MINECON, CORFO and ASCC) and two consultancies: Eurochile Foundation, which provided day-to-day support including designing workshops and writing intermediate reports, and the Consensus Building Institute (CBI) Santiago chapter, which helped ensure the process was transparent and inclusive. The Executive Committee met bi-weekly throughout the development of the *Roadmap*, with responsibilities including reviewing international experiences of roadmap creation, implementation and measurement.

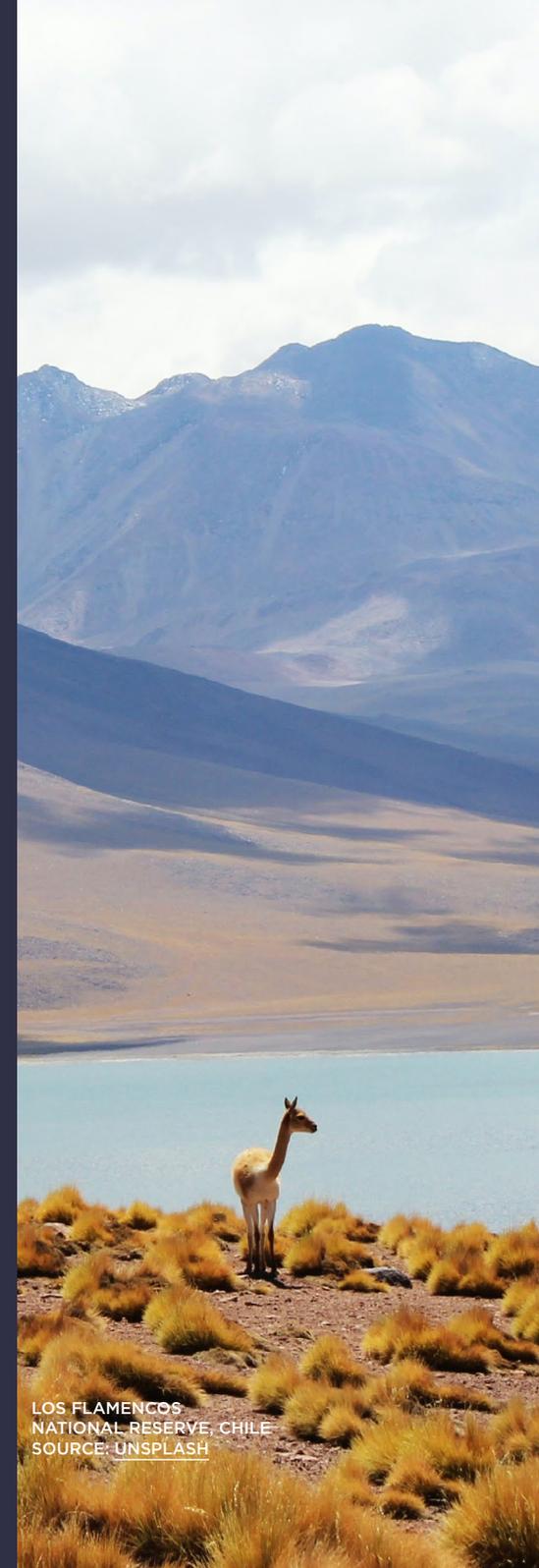
At the same time, the **International Advisory Board** was convened to provide an expert and global perspective on the design and development of the roadmap. This included international institutions such as the OECD, Inter-American Development Bank and UNIDO; governments with experience in roadmap creation; independent experts; consultancies; and civil society actors including the Ellen MacArthur Foundation.¹⁴

At the end of 2019, **four regional workshops** were held to identify key sectors for the circular economy transition. The regions of Antofagasta, Valparaíso, Biobío and Los Lagos were selected to ensure a spread across the north and south of the country, and because all have large cities and significant populations. The resulting priority sectors varied by region and included fishing, agriculture, mining, plastics, and tourism. At the same time, a series of **interviews** with key stakeholders and two online **surveys** were conducted to understand barriers to adopting circular practices.

In 2020, a cross-sectoral **Strategic Committee** of more than 30 actors from the public and private sectors, civil society, municipalities and academia developed the vision, goals, and thinking on what would be needed to achieve them. From May to November 2020 the Strategic Committee met officially 11 times.

Between July and August 2020, **eleven thematic groups** were formed to address specific issues and propose detailed initiatives to achieve the goals. Over 100 people were involved, and each group met at least six times. Among the topics addressed were regulatory barriers, secondary material markets, ecodesign, education and culture, and local circular economies.

In January 2021 the Roadmap proposal was published for **public consultation** and remained open until 1 February, which is within the standard duration for such processes in Chile. More than 500 observations were submitted by over 50 different actors. In July 2021, having taken on board the comments, the *Roadmap* was approved by the Council of Ministers for Sustainability, and in September it was sanctioned by the President.



LOS FLAMENCOS
NATIONAL RESERVE, CHILE
SOURCE: UNSPLASH



How the *Roadmap* illustrates the Universal Circular Economy Policy Goals

The approach to developing the *Roadmap*, as well as many of the initiatives and actions within it, illustrate the five goals of the Ellen MacArthur Foundation's [Universal Circular Economy Policy Goals](#) framework. For example:



GOAL 1

Stimulate design for the circular economy

Government policies can enable products to be designed, produced, accessed, and used in ways that eliminate waste and pollution, use renewable materials, reduce climate impacts, and regenerate natural systems. One of the actions in the *Roadmap* is to establish a product labelling system to inform users of materials used, repairability and recycling options. This will incentivise designers, producers and distributors to increase product quality and durability, and facilitate repairs.



GOAL 2

Managing resources to preserve value

A circular economy requires new business models and resource management systems that keep products and materials in the economy at their highest value for as long as possible. New transport, digital, and technological infrastructure is needed to deliver circular resource loops. The *Roadmap* includes an action to promote reverse and collaborative logistics systems to circulate reusable containers and packaging, among other actions.



GOAL 3

Make the economics work

Governments can employ economic incentives and regulatory requirements to help scale the market for circular products and services, for example by aligning taxation, subsidies, and procurement requirements with circular economy principles. One key action in the *Roadmap* to make the economics work will be a fee on landfilling certain types of waste, with the revenues going towards establishing collection and disposal services. Another is public procurement, with an action to leverage the purchasing power of the state to buy products and services from suppliers with circular practices.



GOAL 4

Invest in innovation, infrastructure and skills

Public finance capabilities can fund the development of infrastructure, innovations, and relevant skills. The *Roadmap* includes provisions to develop circular economy training programmes for public sector workers, and ensure balanced participation from all regions. Such schemes are critical to ensure that the circular economy transition is effective and inclusive.



GOAL 5

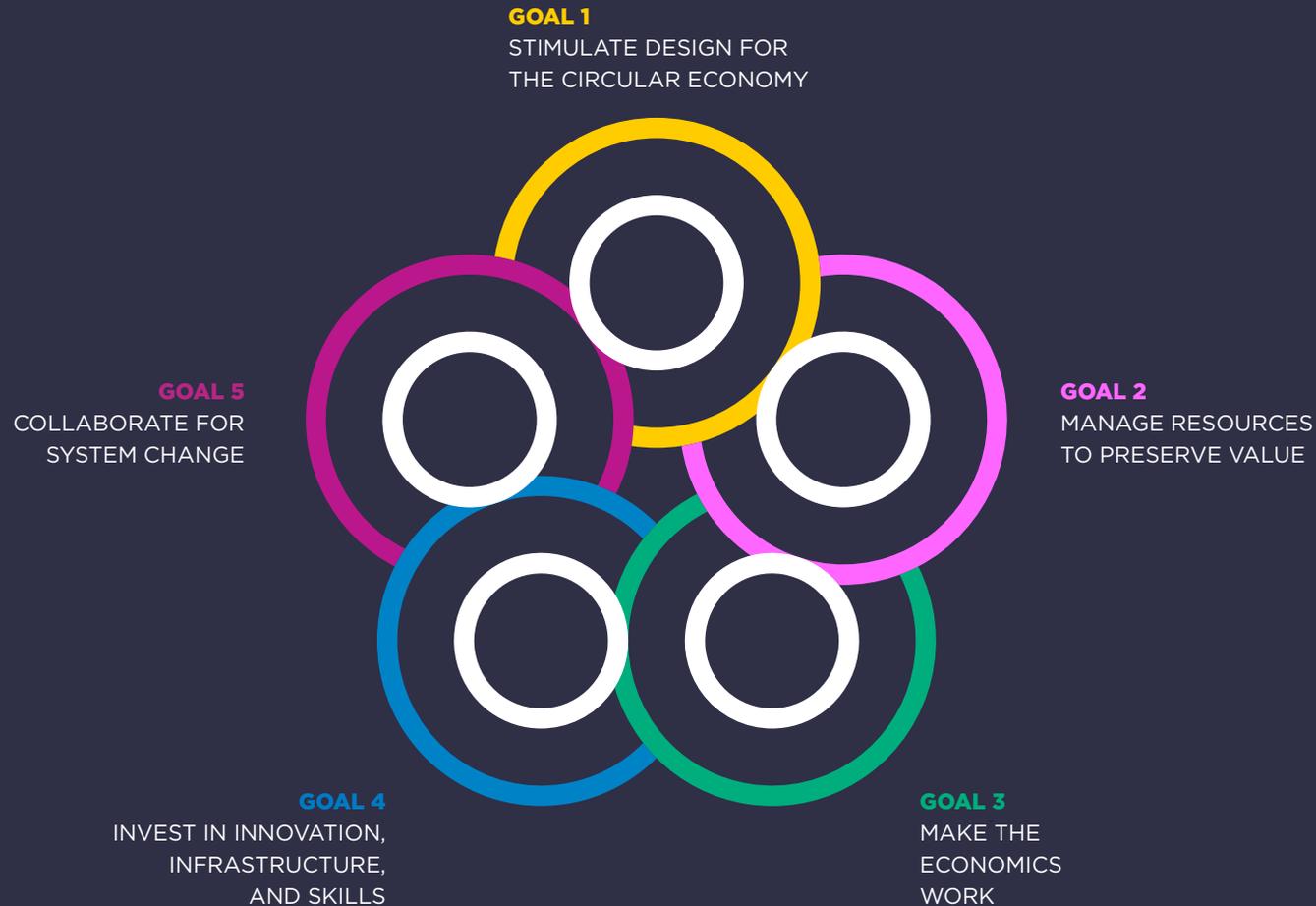
Collaborate for systems change

The development of the *Roadmap* was a highly collaborative process that bridged traditional silos and included all key stakeholders within the Chilean economy. International cooperation is also essential, because the problems of waste and pollution are transboundary, and material flows and value chains stretch across borders. The *Roadmap* includes an initiative to ensure Chile exchanges experiences and learnings via international fora, focusing on South-South cooperation and within Latin America and the Caribbean.

Endnotes

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- 7 Ellen MacArthur Foundation, [Completing the picture: How the circular economy tackles climate change](#) (2021)
- 8 Gobierno de Chile, [Chile's Nationally Determined Contribution](#) (2020)
- 9 Ministerio del Medio Ambiente, [Hoja de ruta para un Chile circular](#) (2022)
- 10 Ellen MacArthur Foundation, [Universal Circular Economy Policy Goals](#) (2021)
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- 12 País Circular, [Hoja de Ruta Economía Circular: documento final plasma visión "más circular" con mayor énfasis en innovación](#) (2021)
- 13 Rubik, [Consultoría para mapeo de actores e impacto potencial de la economía circular en Chile](#) (2019)
- 14 The full list is recognised in the [Roadmap](#)

About the Universal Circular Economy Policy Goals



In January 2021 the Ellen MacArthur Foundation, published a paper *Universal circular economy policy goals: enabling the transition to scale, aiming to create a common direction of travel in policy development for a faster transition to a circular economy*. The five circular economy policy goals detailed in the paper can offer solutions to key global challenges such as climate change, biodiversity loss, and pollution, whilst delivering economic development.



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