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REPORT

NATIONAL CIRCULAR ECONOMY ROADMAPS: A GLOBAL STOCKTAKE FOR 2024

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Background to the global stocktake

Objective of Global Stocktake

75 national circular economy ‘calls to action’, ‘roadmaps’, and ‘operational strategies’ have been launched since 1999 (71 since 2016). This proliferation demonstrates growing momentum within the global community, signalling a shared aspiration to transition towards a circular economy.

Despite their rapid proliferation, understanding of these national calls to action, roadmaps, and operational strategies remains limited. Questions persist regarding their content, design, governance structures, alignment with broader environmental objectives, global coordination, state of implementation and, crucially, their efficacy in delivering a just and inclusive circular transition.

This global stocktake endeavours to shed light on these queries, offering a preliminary examination and foundational reference for subsequent global evaluations. Conducted by Chatham House in collaboration with UNIDO, the stocktake encompasses a meticulous cross-comparative analysis of 75 national circular economy ‘Calls to Action’, ‘Roadmaps’ and ‘Operational Strategies’ – identifying and thematically codifying 2882 individual policy actions by policy theme and by sector.

The insights derived from this stocktake hold relevance for diverse stakeholders, primary policymakers and public officials entrusted with crafting or overseeing existing roadmaps, non-governmental organizations (NGOs) and community groups advocating for just and inclusive roadmap development and operation, as well as industry actors seeking comprehension of the future trajectory of global circular economy policies. Further work is required however to accurately measure the extent to which roadmap commitments are successfully implemented.

Roadmap Classification System

This stocktake studies three types of publications: ‘calls to action’, ‘roadmaps’ and ‘operational strategies’. National ‘**calls to action**’ aim to kick-start national dialogue and coordinated action on the Circular Economy (CE), and can serve as a critical pre-cursor to a roadmap or strategy. Whereas national ‘**roadmaps**’ offer a qualitative long-term vision, outlining high-level focus and priority areas and actions. They contain sufficient detail of policy actions and priority areas to subsequently produce more specific operational plans. ‘**Operational strategies**’ outline time-dependent actions, specified action owners, a governance strategy including monitoring and evaluation, and consider financing whenever possible. They tend to have been adopted within an official government program.

In introducing this classification system, the authors have attempted to bring clarity to an area of ambiguity, in which the terms, ‘roadmap’, ‘action plan’, ‘operational strategy’ tend to be used interchangeably with no clear distinction or definitions provided. As a result, many publications evaluated for this study tended to float in between categories. For example, some were more detailed than a ‘call to action’ but lacked sufficient vision and clarity to be considered a roadmap. Similarly, some outlined time-bound commitments to a proportion of committed actions but lacked clear action owners, governance and allocated resources to be considered an operational strategy. Authors would like to emphasize that due to the diverse nature of the publications and partial lack of accessibility, there is a possibility that an existing publication may be excluded from this stocktake. Moreover, the authors acknowledge country reports and similar publications as well as sector specific reports published in the domain of circular economy. However, the focus of this stocktake is limited to calls to action, roadmaps and operational strategies.

Additionally, the authors would like to stress that this classification should not be considered hierarchical. For example, an operational strategy may outline objective and timebound actions with dedicated resources, however the actions

may not be sufficiently ambitious or coordinated to achieve systemic transformation – rather only result in incremental short-term change. Whereas an ambitious and well-resourced roadmap could aim for more ambitious transformation over a longer time horizon. It could seek to establish strong political support around a collective vision while providing the necessary flexibility, scope and time to enact ambitious measures.

One significant question that arose from the stocktaking process, pertains to the varying degrees of overlap in content and ambition between Waste Strategies (which many countries have produced for decades), Sustainable Consumption and Production or Green Economy strategies (which typically emerged in response to the launch of the Sustainable Development Goals in 2015, specifically for SDG 12) and Circular Economy strategies (which appear to have emerged more recently than SCP strategies and in some cases have superseded them).

Due to the scope and limitations of this study, only publications that were explicit in their aim of being

national calls to action, roadmaps and strategies for the circular economy were considered. Sustainable Consumption and Production, Waste or sector specific strategies, as well as other sector specific reports published in the domain of circular economy were considered outside of this study's scope unless they explicitly had a cross cutting CE theme.¹ Supra- or sub-national roadmaps were also considered outside of scope, as well as country reports and similar publications. Nonetheless, it is also important to acknowledge that some countries, despite not launching dedicated CE roadmaps and strategies, have instead integrated CE principles into broader green or sustainable development strategies. Consequently, the stocktake provides a conservative assessment of national strategy initiatives related to the circular economy, recognizing that certain approaches may not have been captured due to their integration into broader frameworks. The authors recommend further investigation be undertaken to map and understand how circular economy is integrated into other types of strategies such as Waste or Sustainable Production and Consumption strategies.

The global stocktake is laid out as follows:

Part 1 presents a summary of the key findings from the analysis. **Part 2** presents how publication of national calls to action, roadmaps and operational strategies have developed over time and geography. **Part 3** presents their financing and governance and **Part 4** discusses their visions, goals and targets. Finally, **Part 5** presents the types of policy actions identified and their related trends.²

Annex 1 gives a detailed overview of policy actions. **Annex 2** lists the calls to action, roadmaps and operational strategies identified. **Annex 3** details the applied methodology. **Annex 4** presents a shortlist of roadmaps which commit to national quantitative targets. **Annex 5** gives an overview of sustainable consumption and production strategies.

All the data has been compiled into an open-source database available at [Circulareconomy.earth](https://circulareconomy.earth) to allow others to conduct independent research.

¹ Note: Chatham House has mapped existing SCP, Waste, Green Economy and Sub-national CE strategies separately to this study – see here for further information: <https://circulareconomy.earth/?policy=ce-rs>.

² The roadmaps of Australia, Ghana and Nigeria not included in the policy analysis.

PART 1: KEY FINDINGS

Headline messages:

01

There is a significant lack of focus on the need to ensure a [just and inclusive](#) circular economy transition. Considerations of social justice, equity and inclusiveness are as important for the circular economy transition as they are in the contexts of low-carbon transitions and digitalization of the economy yet they are consistently overlooked or sidelined.

02

A lack of recognition of the need to work collaboratively with the global community risks derailing a global just transition. Each nation's journey towards a circular economy will be unique given their economic and cultural contexts and such diversity should be celebrated. Yet if nations continue with a unilateral and fragmented approach to the circular economy, they not only risk failing to achieve domestic CE goals (since their success is dependent on the reconfiguration of global value chains) but also creating a [circularity divide](#) that exacerbates global inequities. Exceptions to this rule include the Finnish roadmap which aims to 'integrate the transition to a circular economy into development policy' and 'strengthen the mainstreaming of the circular economy...in UN processes and other multilateral forums for international cooperation'. Others such as Austria, Chile, Japan, Republic of Korea, the Netherlands, Norway and Slovenia, commit to tackling illegal waste trade and harmonizing circular economy related standards. Despite the clear need, there is not yet a sufficient home to encourage coordination and collaboration on the circular economy within the current multilateral or intergovernmental system (when compared to that of climate and biodiversity) which serves to hinder progress.

03

The emergence of regional roadmaps and strategies or communities of practice will help encourage greater collaboration and coordination – but more is required. Examples of the former include the [EU CEAP](#), the African Circular Economy Roadmap and the [ASEAN Framework for a Circular Economy](#). Examples of the later include the [Global Alliance for Circular Economy and Resource Efficiency](#), [EU Circular Economy Stakeholder Platform](#), [UNECE STEP](#), the [African Circular Economy Alliance](#) and [African Circular Economy Network](#), the [Latin America and the Caribbean CE Coalition](#), [Global Roadmap for an Inclusive Circular Economy](#), and the [ASEAN platform](#).

04

A long term, iterative, and committed approach to developing and implementing roadmaps/strategies and a system of institutional governance which transcends short-term political cycles is required. The following actions may help in this endeavor: (i) distinguishing between the development of a Call to Action, versus a Roadmap, versus an Operational Strategy; (ii) implementing a robust independent monitoring and evaluation process to hold action owners to account; and (iii) requiring delivery of roadmap actions via statutory means.

Technical findings:

01

Since 1999, 75 national calls to action (27), roadmaps (30) and operational strategies (18) have been launched (71 since 2016).¹ These publications vary significantly in ambition, detail, quality, and objective commitments. A few countries (such as Japan, Denmark and Netherlands) have completed several iterations and many are in the process of doing so – thereby strengthening the governance and clarity of actions.

02

The geographical spread is increasing rapidly however the EU still dominates. In 2018, 70% of all calls to action, roadmaps and operational strategies were produced by European countries. In 2024, the proportion of EU roadmaps and strategies remained the same at 70% of the total. Despite most roadmaps and strategies arising in Europe, a rapid uptake can be observed across Latin America, Africa, and Asia (a total of 17 between 2018 and 2024) and this is expected to continue growing as the authors have identified 10+ roadmaps that have been announced to be produced as of time of publication.

03

There are some differences in the policy actions across different regions. In Latin American and the Caribbean, the relative share is higher in policy actions related to worker and consumer rights (46% of the total policy action volume). The Asia-Pacific and Oceania regions show a higher relative volume share in the categories of trade policy and international governance (35%), as well as circular

infrastructure policy actions (27%). In Europe, the share of policy actions is notably high in roadmap governance (87%), policy design (88%), monitoring (82%), and fiscal instruments (80%).

04

Roadmap or strategy governance tends to sit within the remit of one or two government ministries (primarily Ministries of Environment) thereby commonly lacking a systematic and whole of government approach. As a result, aligning the goals and actions of a circular economy roadmap with a multitude of other pre-existing and overlapping economic and environmental strategies remains a major challenge. Inter-ministerial commissions or advisory committees were established within several roadmaps to address this.

05

In terms of financing, a handful of roadmaps and strategies explicitly outlined a budget but very few had secured sufficient funding to achieve the objectives. Lithuania, Spain and Ghana have estimated a required budget of ~€4 billion, €1.5 billion, and USD\$2.5bn respectively to deliver on roadmap and strategy commitments. Lack of roadmap financing for low- and middle-income countries remains a particular gap. Without sufficient funding these roadmaps risk creating false expectations or greenwashing, which if not met can quickly erode momentum and political support. The African Development Bank's '[African Circular Economy Facility](#)' fund with its programme to support National CE Roadmaps (NCER) offers a useful start in this respect.

¹ Note: Japan launched a national Circular Economy Vision in 1999 followed by a Fundamental Plan for Establishing a Sound Material-Cycle Society in 2003 and 2008.

06

Of countries that published an operational strategy or roadmap, 48% (15 of 31 that were assessed in this stocktake) set quantitative macroeconomic circularity targets. The roadmaps that include these types of targets are yet to link those targets via a rigorous science-based approach to the proposed actions. Moreover, these targets are non-binding leaving them vulnerable to short-term political cycles. The majority of the countries setting quantitative circularity targets addressed waste and recycling as well as resource productivity.

07

The publications encompass a wide range of different types of actions (2882) (spanning 17 sectors and 20 public policy themes). Evaluation of these policy commitments has allowed for the creation of a detailed circular economy public policy taxonomy. The actions identified also offer a rich data set of policy examples and provide a signal of the future direction of circular economy policy. Roughly half of the actions identified may be considered ‘aspirational’ as they do not have assigned action owners or allocated budgets and a third are comprised of general recommendations rather than objective actions. Construction and the built environment was the most common sector targeted (making up 16% of sector specific actions), closely followed by plastics (15%), food (10%) and energy.

08

Brokering information and knowledge exchange and multi-stakeholder collaboration was the most common category of policy actions (11%), followed by fiscal instruments (10%), and supporting research and innovation activities (9%). Extended producer responsibility (EPR) was one of the most prominent single policy measures identified, however little-to-no consideration was given to the need for international collaboration or coordination on EPR schemes to prevent leakage and address transboundary waste shipment challenges.

09

The selection of policy actions, in some cases, appears to emerge out of relatively small-scale or narrow stakeholder consultation processes. This risks resulting in the commitment to a series of uncoordinated policy actions. Yet it is increasingly understood that to achieve a systemic shift towards a circular economy, a series of coordinated and comprehensive policy packages that target key barriers along entire value chains are necessary. A challenge for the development of future roadmaps/strategies is to inclusively incorporate the views and desires of broad range of stakeholders in a way which moves towards the development of such policy packages.



PART 2: DEVELOPMENT OF NATIONAL CALLS TO ACTION, ROADMAPS AND STRATEGIES OVER TIME AND GEOGRAPHY

This section presents the development of national calls to action, roadmaps and strategies over time and geography. The full list of policy documents assessed is presented in Table 1: Overview of

calls to action, roadmaps and strategies, with an overview of countries that have developed these publications, as identified in this stocktake.

Table 1: Overview of calls to action, roadmaps and strategies¹

Roadmap type	Volume of roadmaps	Description of the roadmap type	List of countries announcing the roadmap type ²
Call to action	27	Publication aiming to kick-start national dialogue and coordinated action on the CE. Serves as a pre-cursor to a roadmap or strategy. <i>(includes National Circularity Gap reports elaborated by Circle Economy Foundation – denoted by)*</i>	Australia, Austria*, Denmark*, Cambodia, China, Czechia, Ecuador (2), Estonia, India, Northern Ireland*, Italy, Japan, Montenegro, Netherlands* (2), Norway*, Poland*, Scotland*, Serbia, Slovakia, Slovenia, Spain, Sweden*, Switzerland*, United Kingdom*
Roadmap	30	Publication offering qualitative vision and high-level focus areas and actions. Contains sufficient detail of actions and priority areas to subsequently produce more specific action plans (many of which plan for an annual or regular revision of the action plan)	Austria, Belgium, Chile, Colombia, Denmark, England, Finland, Germany, Greece, Ireland, Japan (5), Republic of Korea, Latvia, Luxembourg, Malta, Netherlands, New Zealand, Norway, Peru, Portugal, Portugal (Madeira), Romania, Scotland, Sweden, Wales
Operational strategy	18	Publication offering time dependent actions, specified action owners, robust roadmap governance strategy and, when possible, considering also financing of activities. Typically tends to have been adopted within an official program for government.	China, Denmark, Finland, France, Greece, Italy, Lithuania (2), Netherlands (5), Nigeria, Poland, Rwanda, Spain, Uruguay
Total	75		

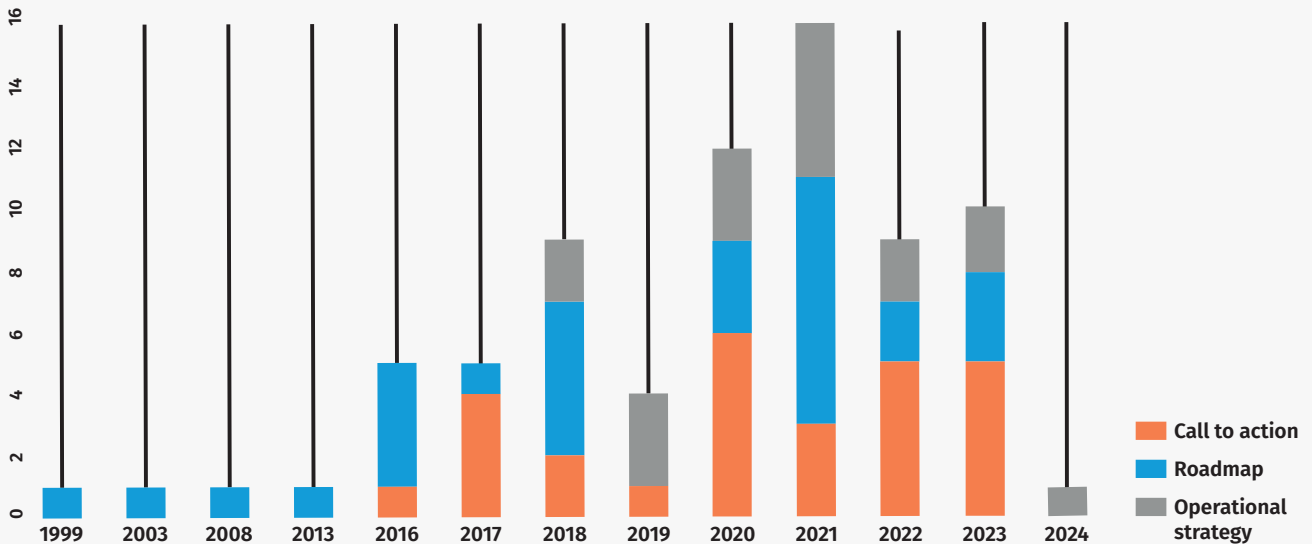
¹ Note: Authors would like to stress that this classification should not be interpreted as hierarchical. See 'Background to global stocktake' for further information.

² Due to the diverse nature of the publications and partial lack of accessibility, there is a possibility that an existing publication may be excluded from this list.

The following three figures present an overview of publication types, geographical spread of the publications as well as development status of the countries announcing the publications from 1999 to 2023 (see Figure 1, Figure 2 and Figure 3). Looking at the publication types, the focus has been shifting towards execution. Before 2018, only roadmaps and calls to actions were published, while since 2018, a significant proportion of the publications have been operational strategies. Moreover, the number of roadmaps and strategies is expected to continue growing. In addition to the publications assessed, the authors have identified

10+ roadmaps that have been announced to be produced as of time of publication. In recent years, there has also been a geographical shift. It is evident from this analysis that although the majority of publications remain predominantly in Europe, since 2021, there has been a rapid uptake in roadmaps and strategies beyond Europe, particularly in Latin America, Africa, and Asia (Figure 2). As presented in Figure 3 and Figure 4, there has also been a shift in calls to action, roadmaps and strategies being developed in developing economies and in economies in transition.¹

Figure 1: Overview of volume per publication type across years



¹ Classified according to [the World Economic Situation and Prospects 2023](#).

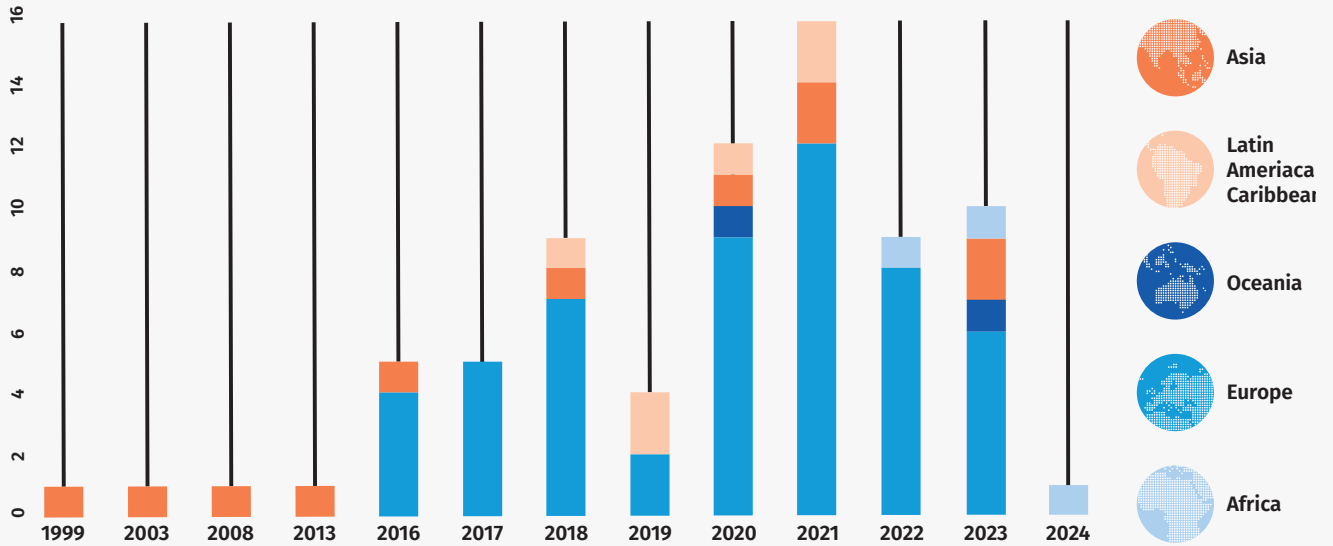
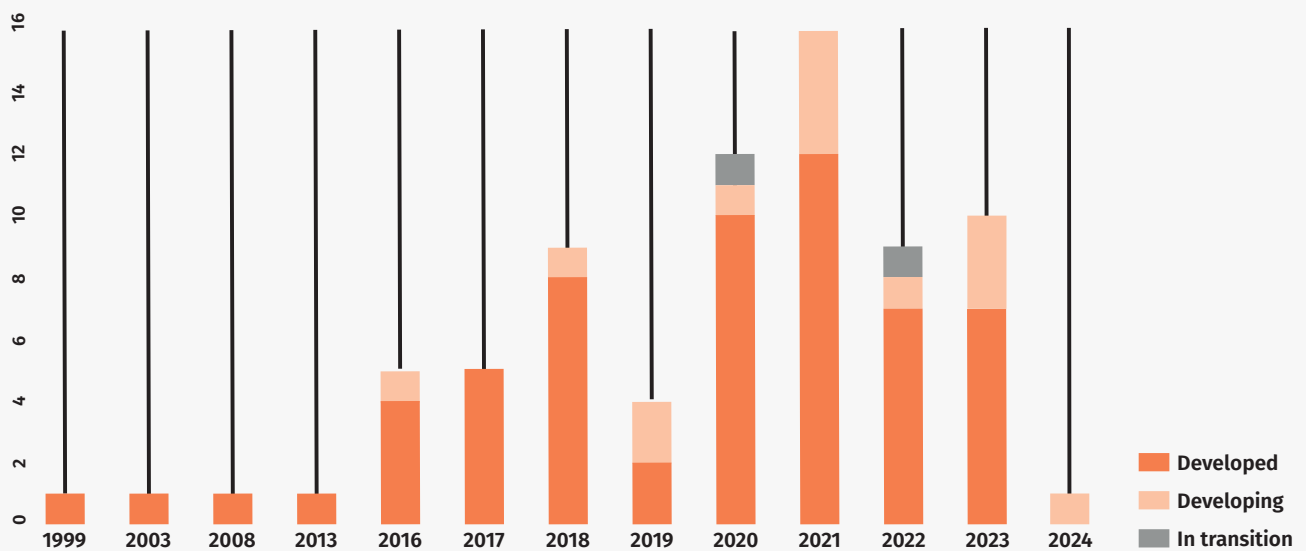
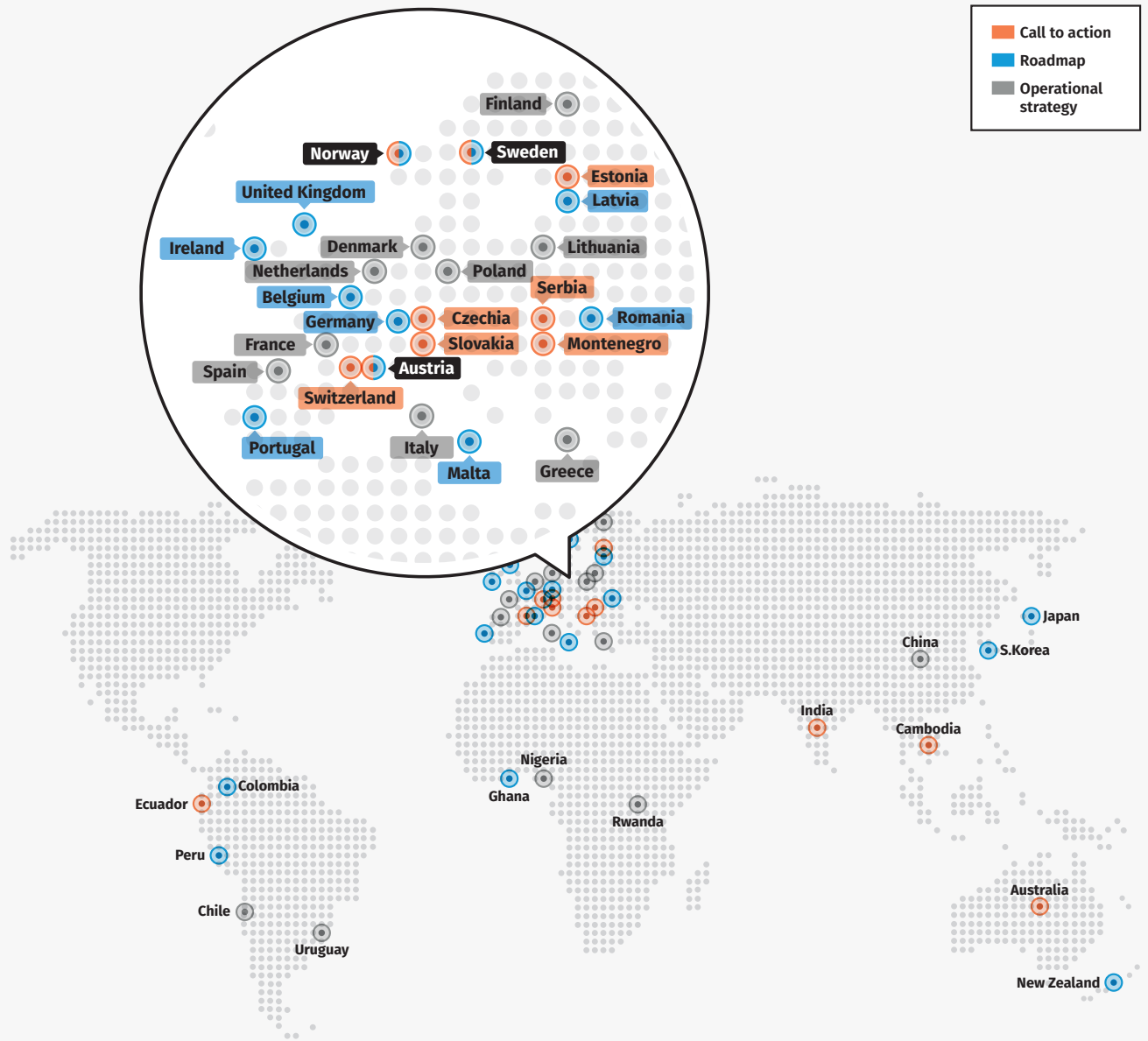
Figure 2: Overview of publication volume per geography across years¹**Figure 3: Overview of publication volume per development status across years**¹ Classified according to [the World Economic Situation and Prospects 2023](#).

Figure 4: Overview of Calls to action, Roadmaps and Operational Strategies across geographies



PART 3: GOVERNANCE AND FINANCING OF NATIONAL CALLS TO ACTION, ROADMAPS, AND OPERATIONAL STRATEGIES

This section explains how national calls to action, roadmaps and operational strategies are currently governed and financed. Figure 5 presents an overview of the host organizations in the publications assessed. Ministries play a crucial role, as roadmap or strategy governance tends to sit within the remit of one or two government ministries (primarily Ministries of Environment). This might result in a lack of a systematic and integrated government approach. To address this challenge, inter-ministerial commissions or advisory committees were established for a few of the roadmaps. Majority of the government

ministries assigned to lead roadmap development were environmental ministries (total of 35), as presented in the Figure 7.

An overview of call to action, roadmap and operational strategy financing is provided in Figure 6. In terms of financing for the policy goals, a handful of roadmaps and strategies outlined a budget but very few had secured sufficient funding to achieve the objectives. Lack of roadmap financing for low- and middle-income countries remains a particular gap.

Figure 5: Development of calls to action, roadmaps, and operational strategies

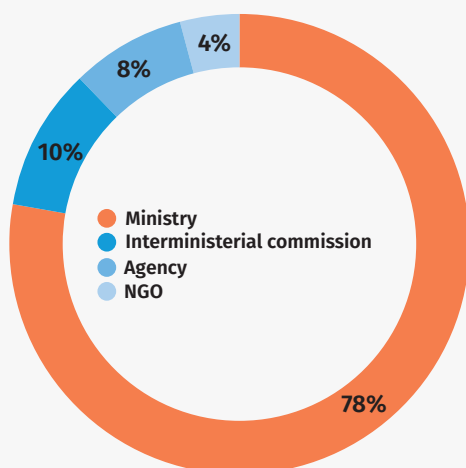
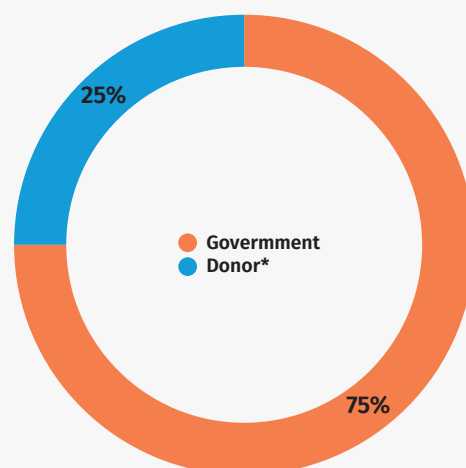
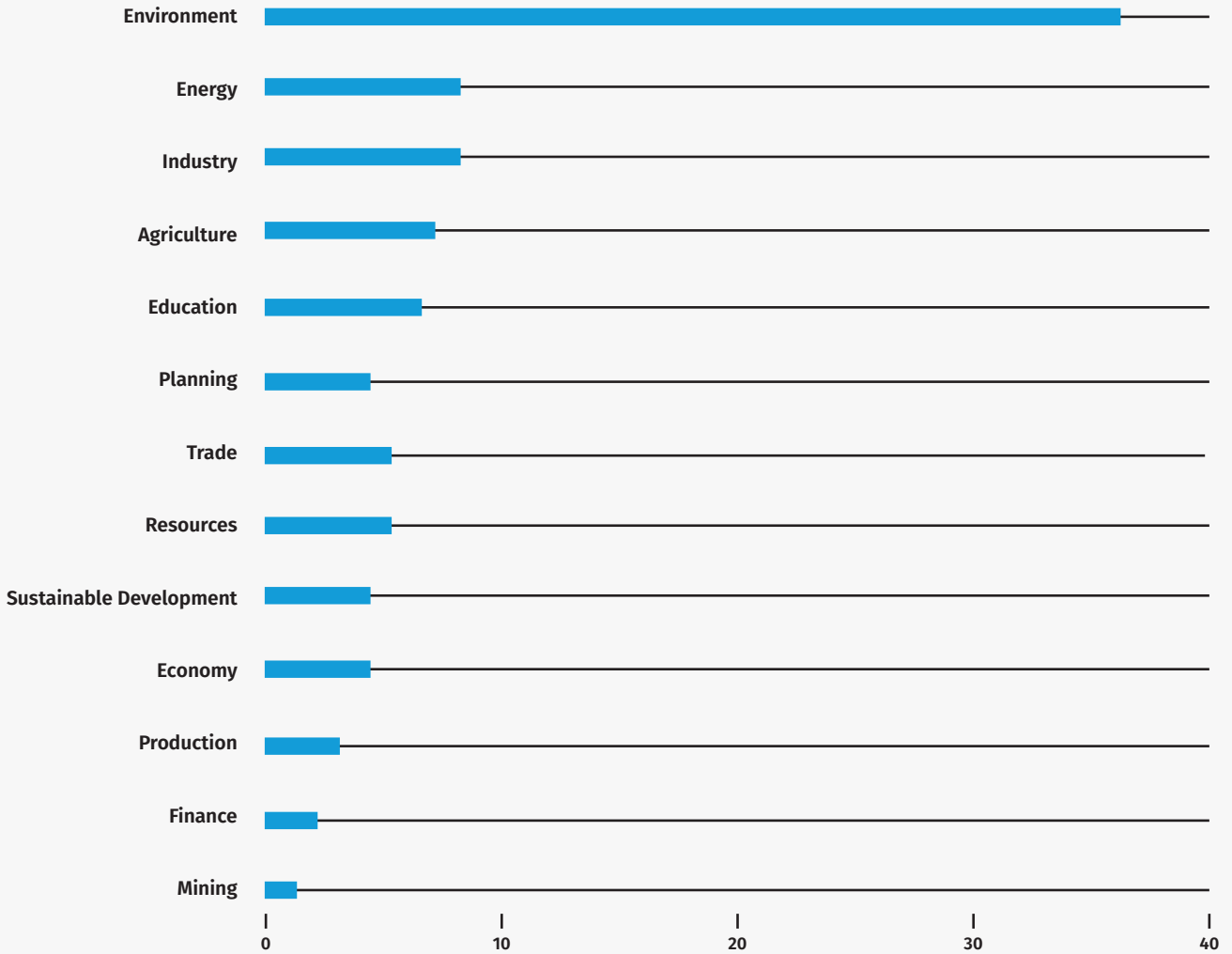


Figure 6: Proportion of calls to action, roadmaps, and operational strategies funded by public versus donor funding



*Donor funding sources include: OECD, European Union, GIZ, UNDP.

Figure 7: Government ministries assigned to lead roadmap development



Governance and monitoring of calls to action, roadmaps and operational strategies also tends to sit within the remit of one or two government ministries (primarily Environment). However, several roadmaps either established or committed to establishing a new institutional

body or committee mandated to manage and regularly monitor roadmap progress and hold responsible action holders accountable. Examples of governance and monitoring in select countries are provided in Table 2.

Table 2: Examples of roadmaps governance and monitoring

Country	Description of governance and steering mechanism
Colombia	A National Competitiveness and Innovation Commission will meet periodically to review the progress of the implementation of the National Circular Economy Strategy and emphasize the priorities of its implementation. Regional working groups will also be established
Greece, Italy, Republic of Korea, Portugal	Plan for the creation of an Inter-ministerial Commission - a decision-making structure at the political level charged with aligning the theme of the circular economy with the work underway and to avoid duplication of effort
Finland	A steering group for the Circular Economy Programme will report to the Ministerial Working Group on Climate and Energy Policy and be responsible for and coordinate the implementation of the programme
India	India in establishing a National Circular Economy Authority (NCEA). The NCEA would be responsible for developing and implementing the national Circular Economy strategy and coordinate the activities of different ministries and agencies, and provide support to businesses and other stakeholders
Netherlands	Mandate for the Netherlands Environmental Assessment (PBL) to produce annual Integrated Circular Economy Report (ICER) to monitor progress and have produced sector specific actions plans



PART 4: VISIONS, GOALS AND TARGETS

This section of the document discusses visions, goals and targets that are included in some of the roadmaps and strategies. The focus of this section will be on quantitative targets, while some examples of qualitative goals and visions will also be given. A key limitation of this analysis is the rather limited sample size (15 countries included quantitative targets in their publications); therefore, the conclusions can only be treated as indicative.

Of countries that published an operational strategy or roadmap, 48% (15 of 31 that were assessed in this stocktake) set overarching quantitative targets and goals to achieve (See Annex III). None of these targets were statutory (regulated by statute or law), rather it was common for them to present general and non-specific qualitative goals and visions. Figure 8 presents the total of 15 countries that set quantitative targets, according to the assessment. Except China, the other 14 countries are OECD members.

Figure 8: Countries with quantitative targets

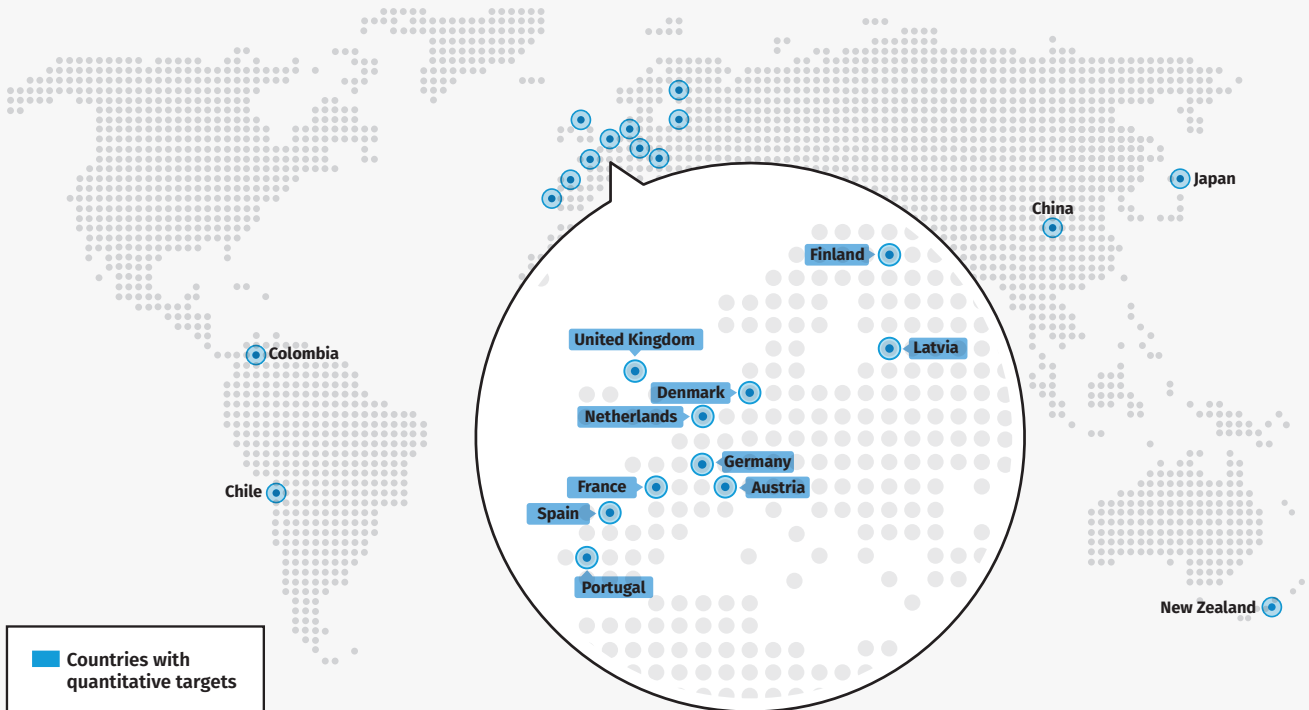


Table 3 presents the type of quantitative targets that have been laid out in the roadmaps and strategies. It should be noted that overall, additional quantitative targets may exist outside

the roadmaps, however not specifically planned for in the publications assessed. Looking at the total volume of quantitative targets, a large majority (50%) address waste and recycling,

setting targets to increase recycling as well as reduce or eliminate waste across sectors and end-users, such as municipalities, households and commercial actors. 60% of the countries that included quantitative targets in their roadmaps and strategies included targets on waste and recycling.

The majority (60%) of countries that included quantitative targets in their roadmaps and strategies also included targets on resource productivity. Resource productivity, as defined in the Operational Strategy of England ('Resources and waste strategy for England'), is a measure of the value obtained from resources and is typically measured as value-added per tonne of resources used. The majority of the countries setting these kind of quantitative targets indicated a target percentage increase to be achieved in their resource productivity. However, while waste and recycling targets can be binding, targets in resource productivity are typically non-statutory, making the execution more vulnerable to short term political cycles.

Other common quantitative target types include targets outlining reductions in material or natural resource consumption as well as targets in circularity rate. The latter type of quantitative measures also includes targets for increased utilization of (recycled) material, as well as improvement in cyclical use rate at an inlet or outlet. For example, Japan is targeting cyclical use rate at inlet of approx. 18% and at outlet by approx. 47% by 2025.

Among the countries setting quantitative targets, China was, according to this dataset, the only country setting targets for the production or output of recycled material and recycling industry. In addition to above mentioned targets, some of the roadmaps and strategies also included targets on water consumption, job creation, as well as increasing the market size of material-cycle business.

50%
of total volume of quantitative targets address waste and recycling

60%
of countries that included quantitative targets in their roadmaps and strategies also included targets on resource productivity

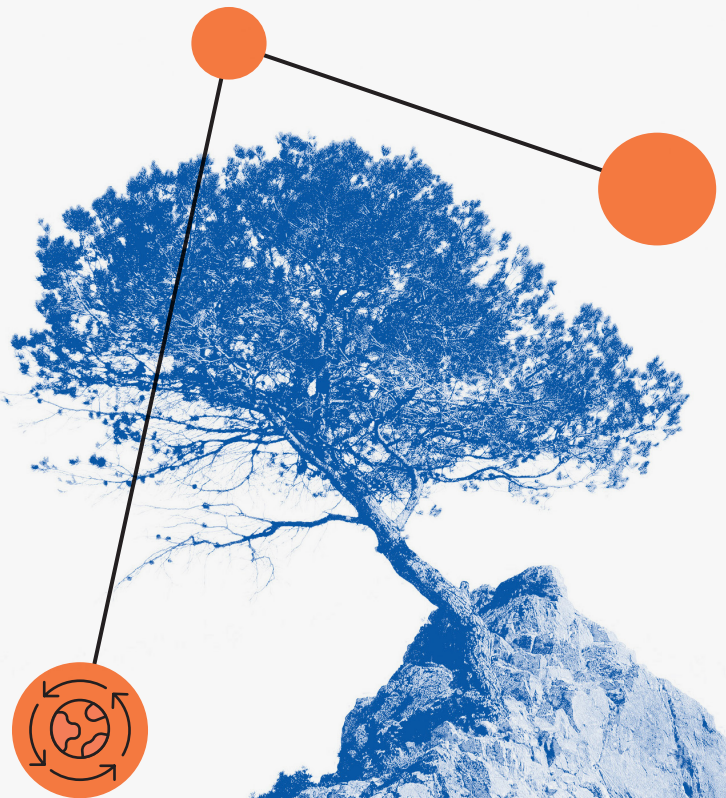
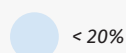
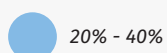


Table 3: Quantitative targets across target types

Quantitative target type	Description	Total targets of this type		Country strategies including this target type		Countries with the target type	Example
		Total count	Share of total target count, %	Count of countries	Share of total country strategies, %		
Resource productivity	An increase in resource productivity, typically measured as value added per tonne of resources used. For example, at national level, measured by GDP/Domestic Material Consumption	11	10%	9	60%	Austria, Chile, China, Colombia, Denmark, Finland, Japan, Latvia, Portugal, United Kingdom	<i>Austria: Increase domestic resource productivity by 50% by 2030</i>
Resource consumption (incl. extraction / import)	Reduction in material or natural resource consumption (including water)	13	12%	9	60%	Austria, China, Colombia, Finland, France, Germany, Portugal, Spain	<i>Spain: Reduce domestic material consumption by 30% in relation to national GDP, taking 2010 as a reference</i>
Circularity rate	Increased circular economy rate, increased utilization of (recycled) material and/or improvement in cyclical use rate an inlet or outlet	11	10%	7	47%	Austria, Chile, China, Finland, France, Japan	<i>Finland: Double the circular economy rate of materials by 2035</i>
Waste/ recycling	Increase in the recycling and/or reduction or elimination of waste across sectors and end-users (i.e., municipalities, households and commercial)	56	50%	9	60%	Chile, Colombia, Denmark, France, Japan, New Zealand, Portugal, Spain, United Kingdom	<i>Colombia: Increase the rate of recycling and re-use of waste materials, from 8.7% to 17.9% by 2030</i>
Production of recycled material	Increase in output/ production of recycling industry	2	2%	1	7%	China	<i>China: Produce 20 million tons of recycled non-ferrous metals</i>
Other	Other targets, such as new jobs or market size of material-cycle business	6	5%	6	40%	Chile, Colombia, France, Japan, Netherlands	<i>Chile: Generation of 100.000 new green jobs by 2030 and 180.000 new green jobs by 2040</i>
Total		111	100%	15	100%		



< 20%



20% - 40%



> 40%

In addition to quantitative targets, roadmaps and strategies also set qualitative targets. Examples of qualitative targets set by Colombia are presented in Box 1.

Box 1: Qualitative goals and objectives: Example from Colombia

Goal for roadmap: The National Circular Economy Strategy provides a framework to identify priorities, management mechanisms and inter-institutional articulation to advance the transformation of production and consumption systems towards circularity.

Roadmap objectives:

- 1 Develop innovations in regulatory mechanisms, based on circular economy principles
- 2 Create a critical mass of new business models and sustainable infrastructure based on incentives that promote circular economy principles
- 3 Promote research and strengthen the capacities of private and public organizational actors in innovation for productive transformation based on circular economy models
- 4 Advance in the design of international cooperation mechanisms that allow promoting productive transformation towards circular economy models
- 5 Develop an information system at the service of the circular economy with indicators based on accounting materials, water and energy, and their productivity in terms of added value
- 6 Promote a citizen culture in a circular economy through mass communication programs

5: POLICY ACTION CATEGORIES

This section provides a breakdown of the 2882 individual policy commitments identified by policy theme and by sector. Firstly, the circular economy public policy taxonomy developed for this study is introduced, followed by the presentation of the number of actions across the policy themes and sectors. Subsequently, an analysis of policy action types across years and regions is provided. A detailed view on each of the policy theme is presented in the Appendix I, together with a

handful of interesting actions for each policy theme. An overview of the policy action categories defined for this paper is provided in the Table 4. It should be noted that the publications assessed primarily focused on priority areas or sectors rather than the whole spectrum of economic reforms required to achieve a CE transition. Therefore, the publications were typically not intended to be exhaustive.

Table 4: Description of policy action categories

Policy action category	Description
Brokering	Brokering knowledge transfer, for example, via information and knowledge sharing, communities of practice, platforms and databases or establishing 'Circular Hubs'
Business Support	Supporting the transition of the private sector, for example, by promoting best practice examples, business campaigns or technical support
Circular resource management	Management of second hand or end-of-life goods, secondary raw materials, wastes and residues via circular approaches (sharing and reuse, remanufacturing, refurbishment, repair, recycling)
Circular Infrastructure	Supporting the scale up of infrastructure necessary for performing circular economy activities
Education and Skills	Supporting CE education and skills, for example, through integrating CE into curricula or providing professional training services
Fiscal instruments	Examining or introducing fiscal instruments, such as subsidies and incentives, investment funds or taxes, charges, rebates, and fees
Influencing consumption habits	Influencing consumption habits by developing consumer campaigns

Policy action category	Description
Monitoring	Setting up necessary monitoring measures to track the national transition to a circular economy (for example material flow accounts)
Municipalities and local authorities	Offering targeted support measures to sub-national actors (such as municipalities or local authorities) to help them facilitate local and contextually relevant transitions to a circular economy
Policy design	Committing to investigate and research the necessary policy measures required to facilitate a circular economy transition
Producer requirement	Affecting producer requirements, for example, by extending producer responsibility or guidelines
Product requirement	Affecting product requirements, for example, by developing circular economy criteria or establishing targets and rates for circular products
Public Procurement	Introducing guidelines and criteria for circular public procurement practices (such as prioritizing product as a service models, or procuring goods which have greater durability, reparability or recyclability)
Research and Innovation	Implementing research and innovation pilots and experiments, conducting specific research activities, supporting innovations and technologies, or establishing research and innovation programmes
Roadmap governance	Putting in place necessary governance mechanisms to continuously monitor and evaluate progress with respect to the roadmap/strategy objectives and to hold action owners to account
Sector level action plans	Developing and publishing sector specific CE transition action plans with a broad range of stakeholders
Standards	Establishing criteria, specifications, or guidelines that define the minimum requirements or characteristics that products, services, processes, or systems must meet to ensure circularity
Trade policy and international governance	Putting in place measures to support collaboration with the international community and circular economy trade related measures
Waste management	Supporting waste management, for example, by facilitating waste collection, recovery and management, or establishing waste criteria
Worker and consumer rights	Strengthening the rights of workers performing necessary circular activities (such as informal waste pickers, repair specialists, building decommissioning workers) and consumers of products (for example offering the right to repair products, or protection from hazardous chemicals)

Figure 9 presents an overview of the number of actions across policy categories. Brokering was the most common category of actions, followed by fiscal instruments, and supporting research and innovation activities. Looking at the single policy

measures, extended producer responsibility (EPR) was one of the most prominent policy measures identified. However, little-to-no consideration was given to the need for international collaboration on EPR schemes to prevent leakage.

Figure 9: Overview of the number of actions across policy categories

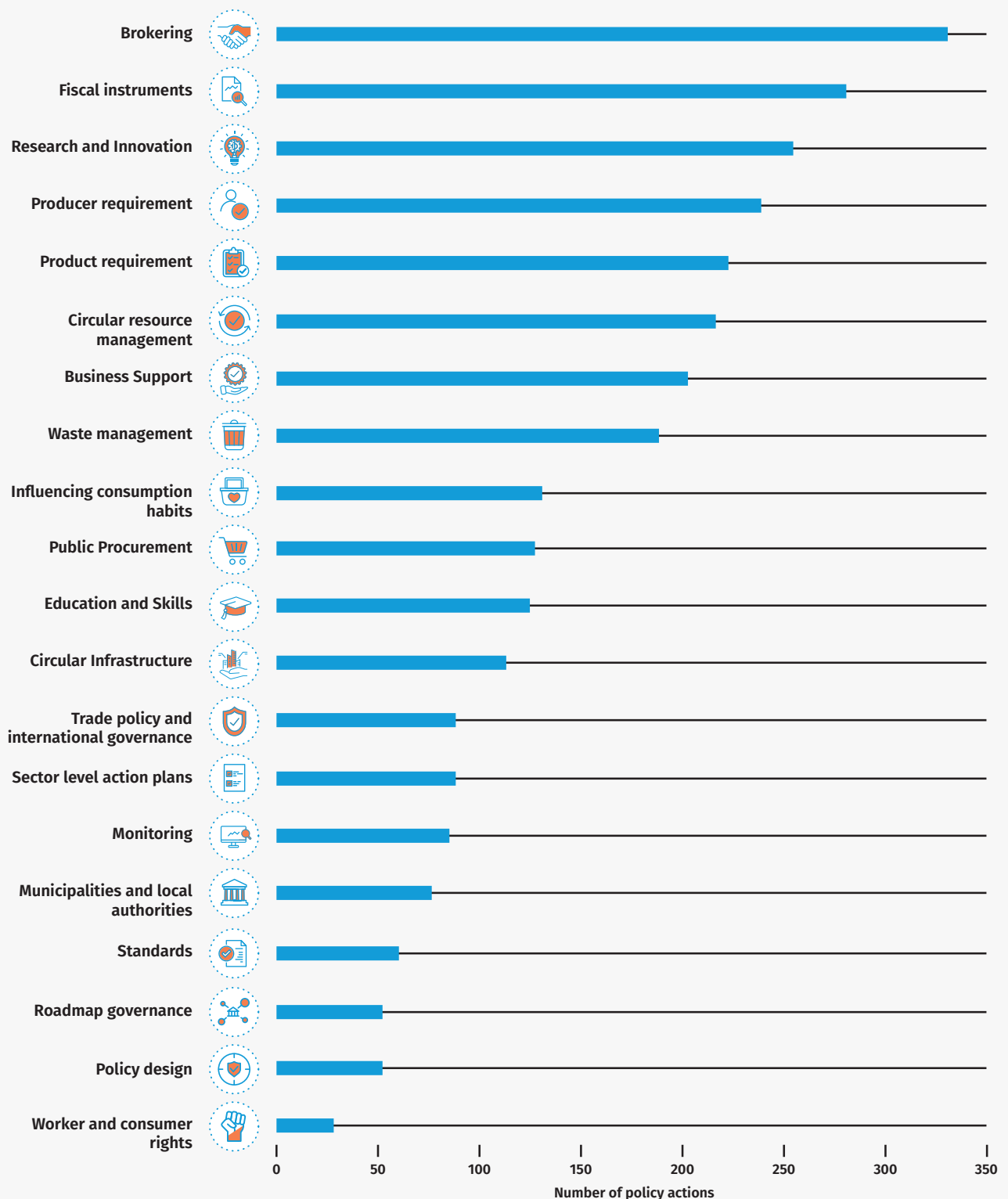
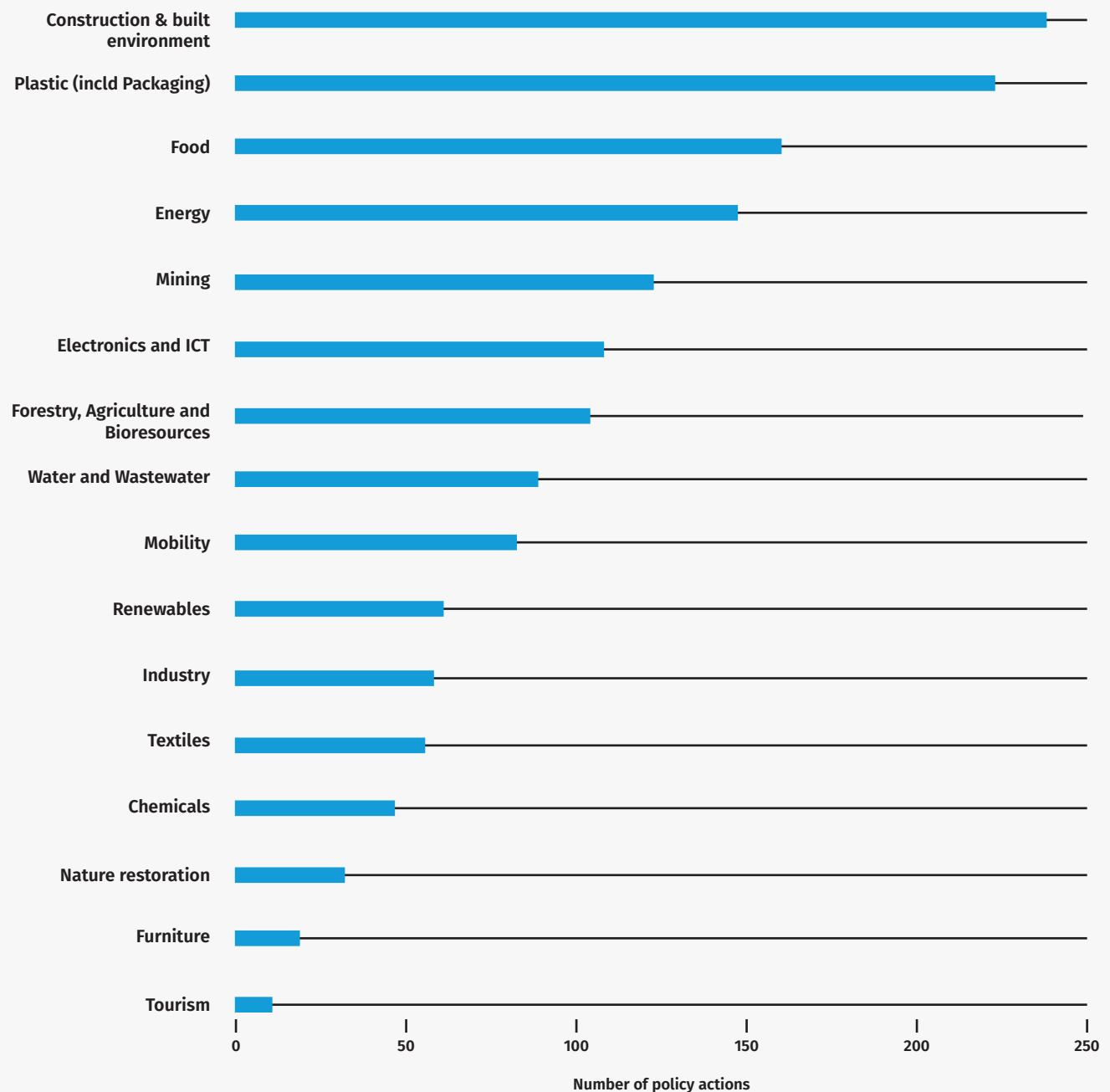


Figure 10 presents an overview of the number of actions across different sectors. The largest shares of policy actions were identified in construction and built environment as well as in plastics, including packaging. The largest share of policy actions within construction and built environment were type of producer requirement actions, such as secondary raw materials guidelines (e.g., technical standards to facilitate the reuse of construction materials such as recycled aggregate). Another

common type of actions within construction and built environment was policies linked to circular resource management, such as goals for recovery or reuse. Within plastics, the largest share of policy actions were within product requirement actions, and typically related to ecodesign (e.g., accelerating the use of recyclates and optimisation of the use of renewable raw materials in the production of plastics and packaging).

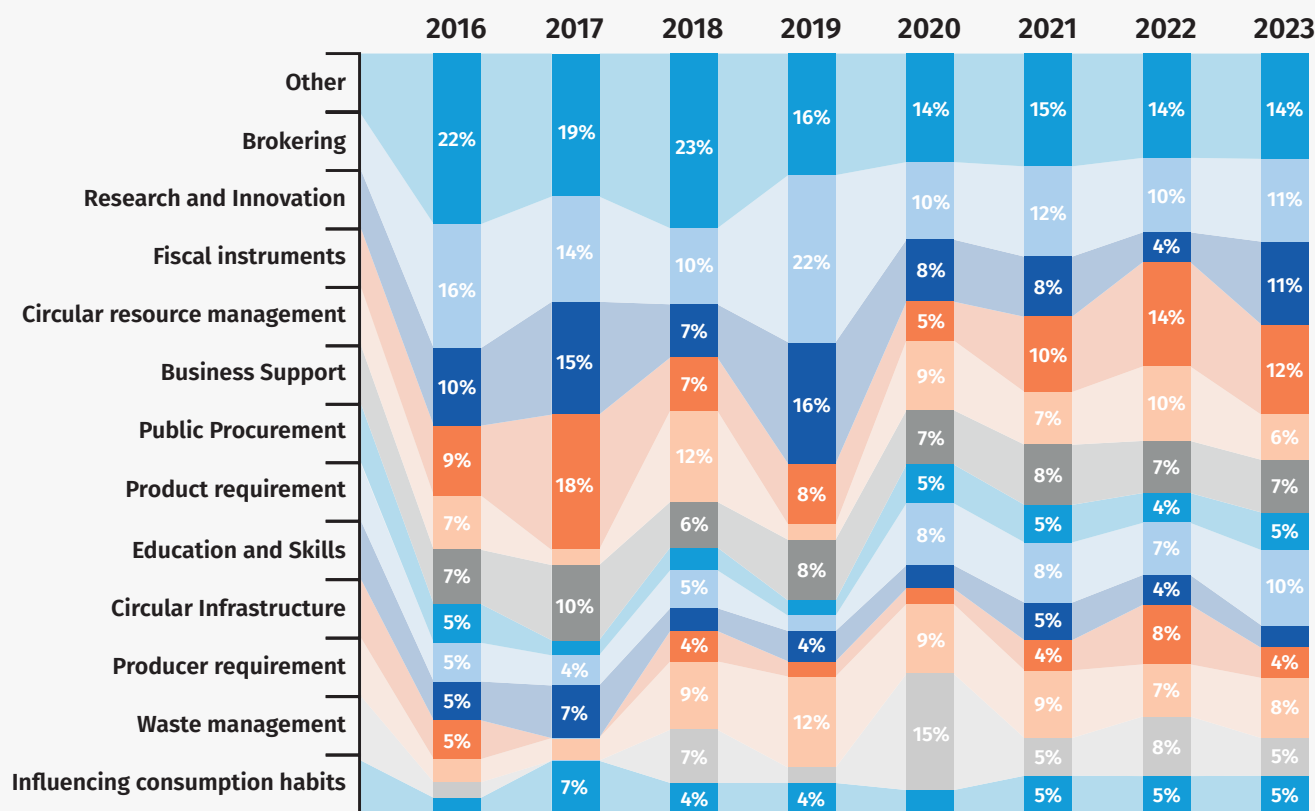
Figure 10: Overview of the number of actions across different sectors



The share of different policy action types across years is presented in Figure 11 and Table 5. While some variability over the years can be observed, no specific trend overall can be deduced from the data. Furthermore, it is important to note that the policy action targets assessed only include new policies introduced, hence they do not indicate an overarching picture of policy actions currently in place. When comparing the data across years, it should also be noted that the total volume of publications in 2019 and 2022 is rather low (in 2019, a total volume of 50 and in 2022, a total volume of 210 versus 376 in 2018, 412 in 2020, 1037 in 2021 and 571 in 2023).

First of all, variability in introducing waste management and circular resource management policy actions can be deduced from the data. Some decline in the absolute and proportional volume of waste management actions occurred after the peak year of 2020¹, and some decline can be observed in the share of circular resource management policy actions.² In addition, some increase in fiscal policy actions can be deduced from the data³, as well as a longer-term increase in the introduction of product and producer requirement policy actions.⁴

Figure 11: Share of policy action types across years (% of total volume of policy actions)



¹ While 15% (n=63) of policy actions were defined under waste management in 2020, only 5% were in 2021 (n=51) and 2023 (n=30), respectively. The share is slightly larger (8%) in 2022, although with low volumes (n=16), explained by the overall low volume of policy actions that year.

² There is a decrease of resource management policy actions after the peak year in 2018 (44 actions making 12% of total volume in 2018 versus 32 actions making 6% of total volume in 2023). Similarly, the share is slightly larger (10%) in 2022 albeit low volumes (n=20), explained by the total low volume of policy actions that year.

³ There is an increase in the introduction of Fiscal instrument policy actions after the decline in 2018 and 2020. According to the data, the share of Fiscal instrument policy actions has increased to a level of 10-12% in 2021 (n=101) and 2023 (n=67) after a decline in 2018 and 2020 (5-7% of the total volume during these years; n=28 and n=21 respectively).

⁴ The share of product and producer requirement policy actions has increased from 3-5% in 2016 (n=7 and n=4 respectively) and 2017 (n=4 and n=3 respectively) to 8-10% in 2021 (n=87 and n=91 respectively) and 2023 (n=58 and n=46 respectively).

Table 5: Volume of policy action types across years

Policy action category	2016	2017	2018	2019	2020	2021	2022	2023
Brokering	21	15	38	11	43	120	20	62
Fiscal instruments	11	19	28	4	21	101	29	67
Research and Innovation	13	16	28	8	35	84	9	60
Producer requirement	4	3	32	6	36	91	15	46
Product requirement	7	4	18	1	33	87	14	58
Circular resource management	9	2	44	1	36	72	20	32
Business Support	9	10	22	4	27	78	15	39
Waste management	3	0	26	1	63	51	16	30
Influencing consumption habits	3	7	15	2	14	51	10	29
Education and Skills	7	7	13	2	14	56	8	17
Public Procurement	7	2	12	1	22	47	8	28
Circular Infrastructure	7	0	14	1	10	43	17	23
Other	28	20	86	8	58	156	29	80
Total	129	105	376	50	412	1037	210	571

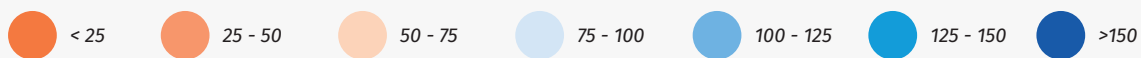


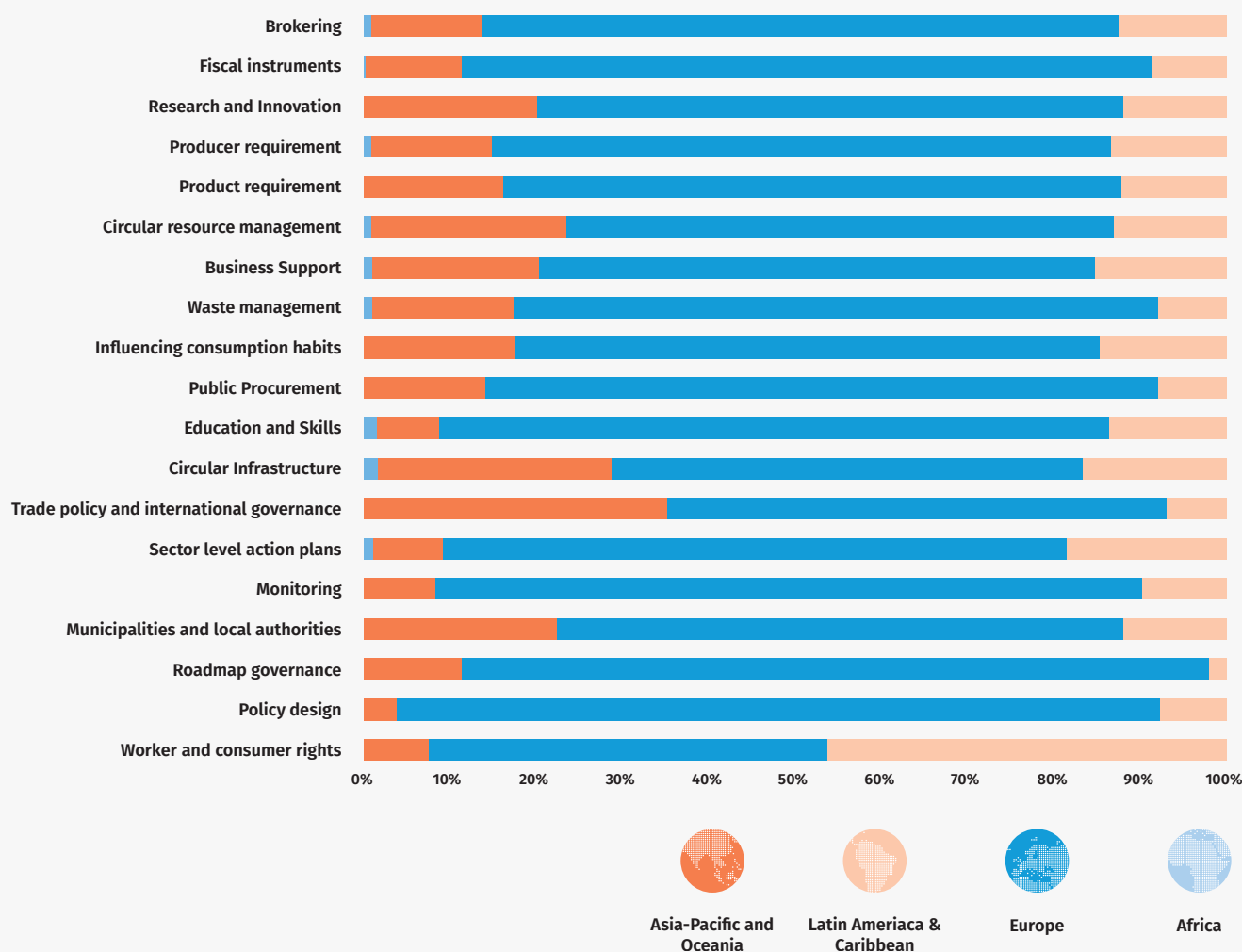
Figure 12 shows an overview of policy action types across regions. While the majority of the policy action volume across categories is introduced in publications of European countries, there are also certain policy types with relatively higher volumes in specific regions.

Looking at Latin American and the Caribbean, the relative share is higher in the Worker and consumer rights related policy actions (46% of total volume of this category is introduced in the Latin American and Caribbean) as well as in the Sector level action plans and Circular infrastructure policy actions (18% and 17% share respectively). In Asia-Pacific and Oceania region,

a relatively high volume share of policy actions can be found in the Trade policy and international governance policy action category, as well as in the Circular Infrastructure policy action category (35% and 27% of total volume of these categories respectively).

In the European region, the share of policy actions is particularly high in roadmap governance (87%) and policy design (88%), as well as monitoring (82%) and fiscal instruments (80%). Given that the volume of CE roadmaps from African countries analyzed in this publication is rather low, no further remarks are conducted regarding the share of policy actions in African countries.

Figure 12: Share of policy action types across regions (% of total volume in the given category)



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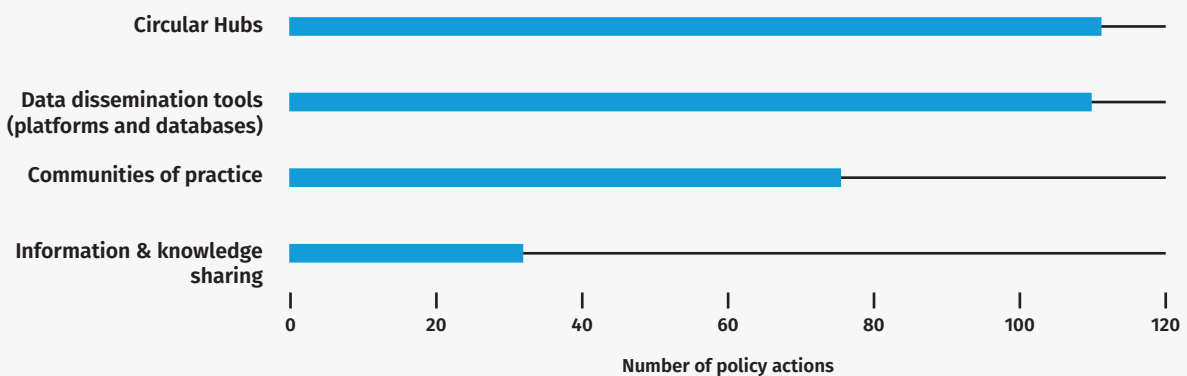
Policy action deep-dives

This Annex provides a breakdown for each public policy theme outlining the key action areas and listing interesting examples of actions.

Examples of Brokering knowledge transfer actions:

- Identify and create necessary legal framework conditions that enable real testing of circular innovations and solutions within a defined framework (“regulatory sandboxes”)
- Engage in extensive network cooperation (organisations, companies, central government, municipalities) to develop new inspiring ways to gather information on circular economy services, such as sharing platforms, repair and resale services, and citizens’ own circular economy stories
- Provide seed-funding and expertise to establish “Demonstration Hubs”, targeted projects to demonstrate circular economy actions at county scale, as a model for national roll-out
- Establish a circular economy hub as a “one-stop shop” for different circular initiatives and solutions. This would serve as a place where inter-ministerial dialogue is nourished and opened up for other stakeholders to get involved. The hub would also provide an opportunity to connect with hubs from other countries and enable exchange of good practices and know-how
- Explore the establishment of a national registry of repairers
- Trial large scale reuse and repair hubs to encourage increased capture rates, to deliver economies of scale for the sector and to create recognised reuse superstores for consumers
- Develop a ‘National Materials Datahub’ that would provide comprehensive data on the availability of raw and secondary materials, including chemicals, across the economy to industry and the public sector, and by modelling scenarios around material availability

Brokering knowledge transfer

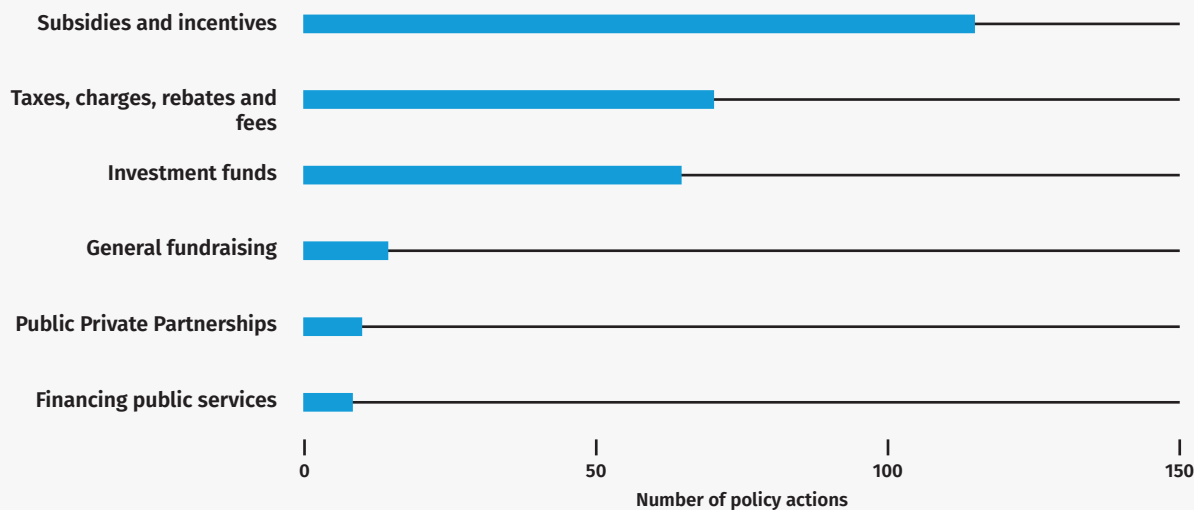


Policy action deep-dives

Examples of Fiscal Instruments actions:

- Examine possibilities for taxing the production of plastics from fossil raw materials, combined with a stimulus measure for the set-up of a circular plastics and textiles hub
- Establish a working group “Circular Economy and Finance Economy” to expand the knowledge of financial products and risk management
- Formulate justification and proposals for a circular shift of taxes: removal of food donation tax barriers (VAT), reduction of taxation on repair, shifting labor taxes to raw material taxes, financial circular incentives for enterprises (tax relief measures, subsidies, facilitation and reduction of licensing charges) as well as incentives for credit foundations financing circular projects (including industrial symbiosis)
- Provide technical support to local banks for the identification of circular economy projects; update customs and tax regulations to facilitate the transport of waste from customs-free zones
- Expand existing tax credit for household expenses and use it as an incentive mechanism for areas such as repair services
- Introduce environmental charges to tackle consumption of problematic products and promote a move to more sustainable alternatives

Fiscal Instruments



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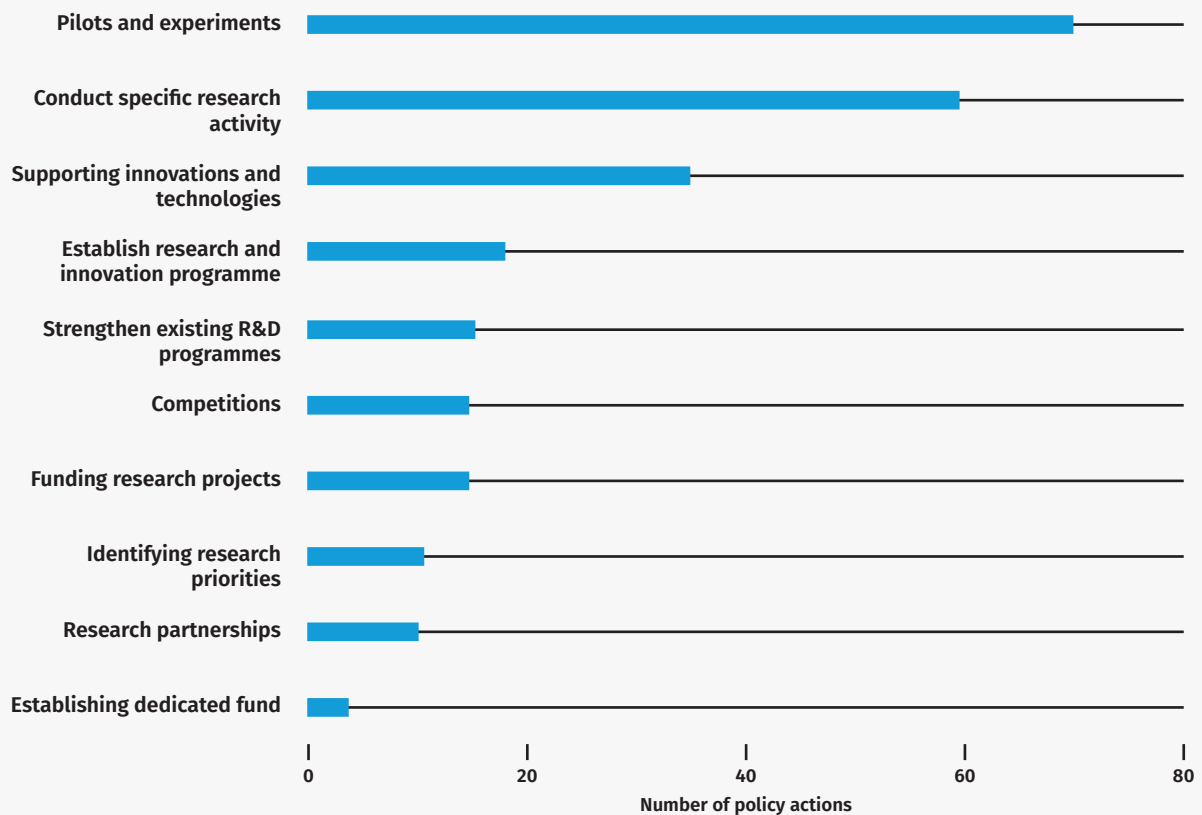
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Policy action deep-dives

Examples of Research and Innovation actions:

- Implement open innovation challenges and jointly generate pilots and validation instances in real conditions
- Fund independent research into models for reusable packaging in supermarkets as well as infrastructure for largescale cleaning of reusable packaging
- Establish multi-year mission-driven innovation programs for the circular economy to contribute to circular agriculture and a climate-neutral system for agriculture and nature by 2050
- Establish the National Intelligent Specialisation for CE focused on the development of R&D
- Define a long-term research and innovation agenda (up to 2030), via a consultative process involving experts from various areas of the domestic economic system, e.g. high education institutions, research centres, technology centres and businesses
- Evaluate the potential of setting up a dedicated circular economy innovation fund offering grants or of introducing innovation vouchers for circular economy technologies
- Launch Circular Economy Award, present positive practices at the national and international levels and leverage pilots

Research and Innovation

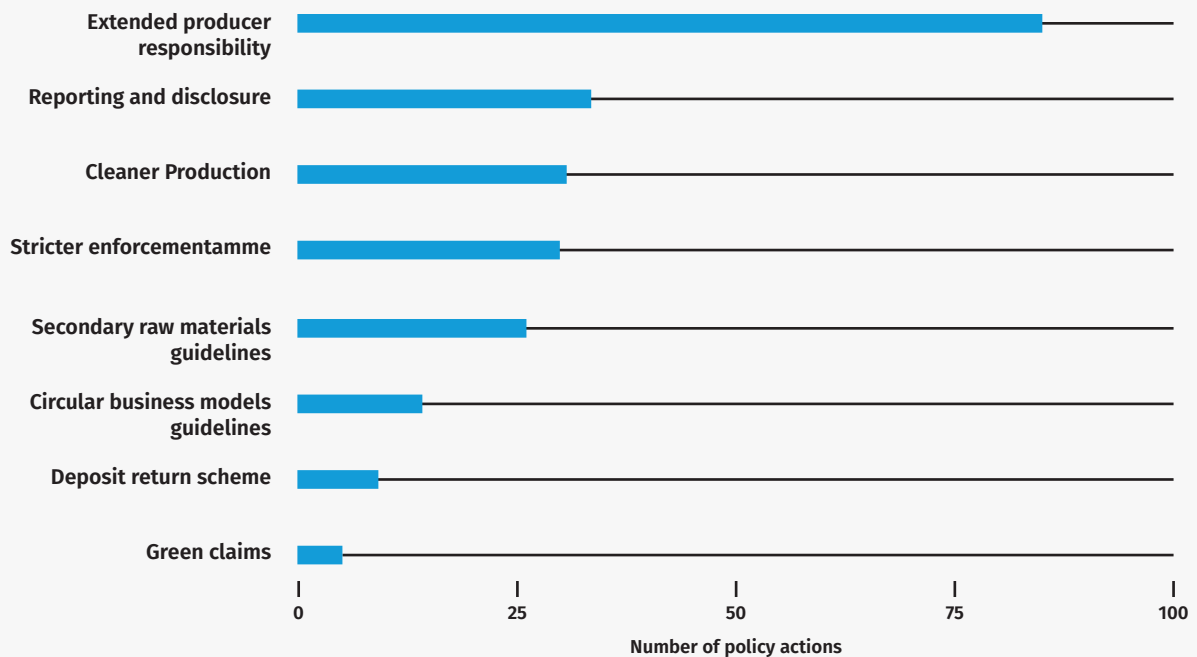


Policy action deep-dives

Examples of Producer Requirement actions:

- Elaborate technical standards to facilitate the reuse of construction materials such as recycled aggregate
- By 2020, develop technical guidelines enabling recognition of the performance of reused materials
- Include Sustainable Production criteria for products in the extended producer responsibility programmes
- Offer guidance for investments in a circular economy to help enterprises and investors build a common understanding and establish smooth communications through information disclosure regarding circular activities
- Define a regulatory framework, as well as national standards and targets for the recovery of nutrients and materials from organic waste streams (e.g., phosphate from wastewater)
- Integrate circularity into sustainable construction guidelines, as well as spatial planning and urban design
- Establish criteria for the proper dismantling and repowering of wind power generation facilities
- Introduce a quality standard for recycled construction materials to stimulate the marketing and use of recycled materials and construction products

Producer Requirements



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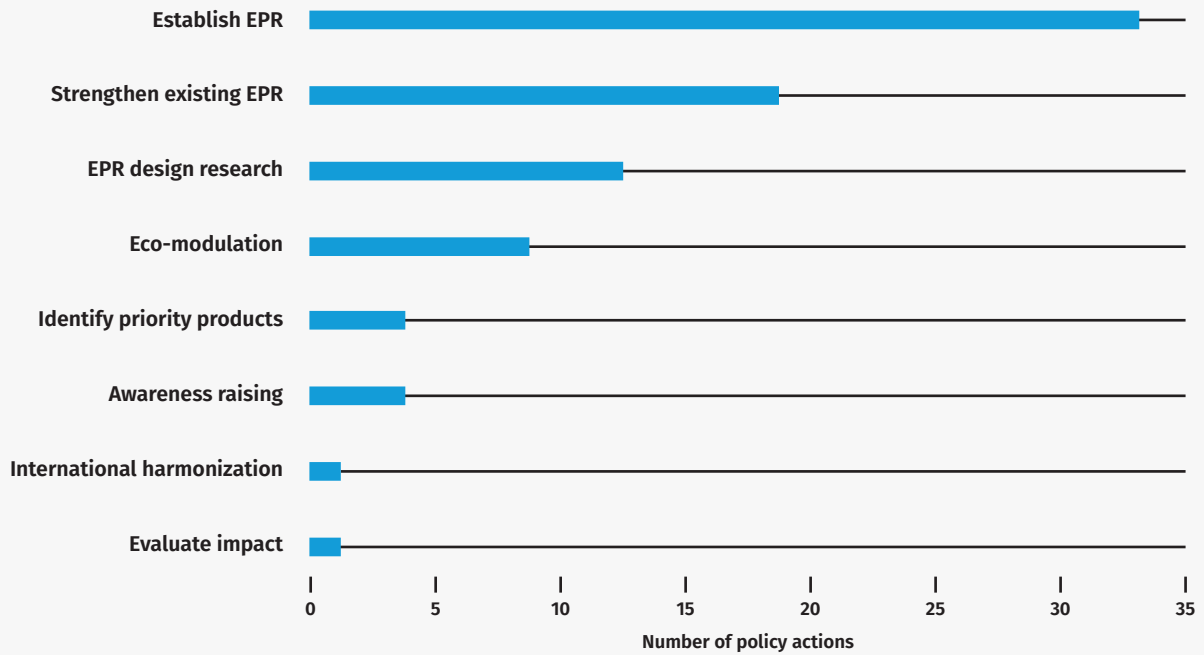
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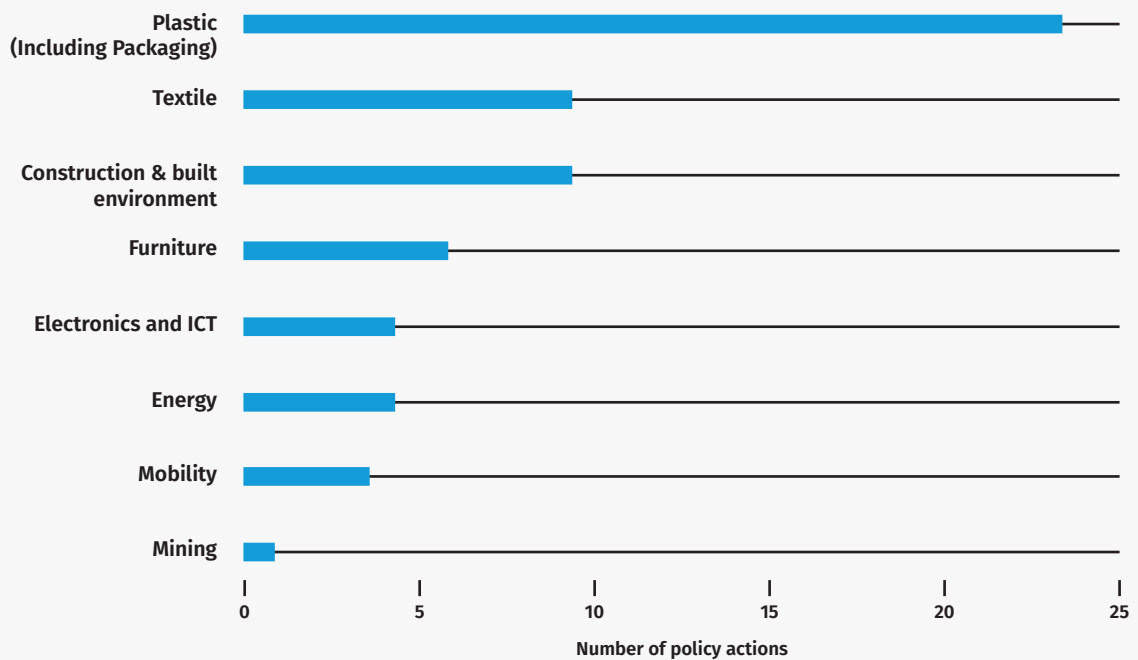
Policy action deep-dives

Detailed view: Extended Producer Responsibility

Types of EPR actions



Product Categories targetted by EPR actions

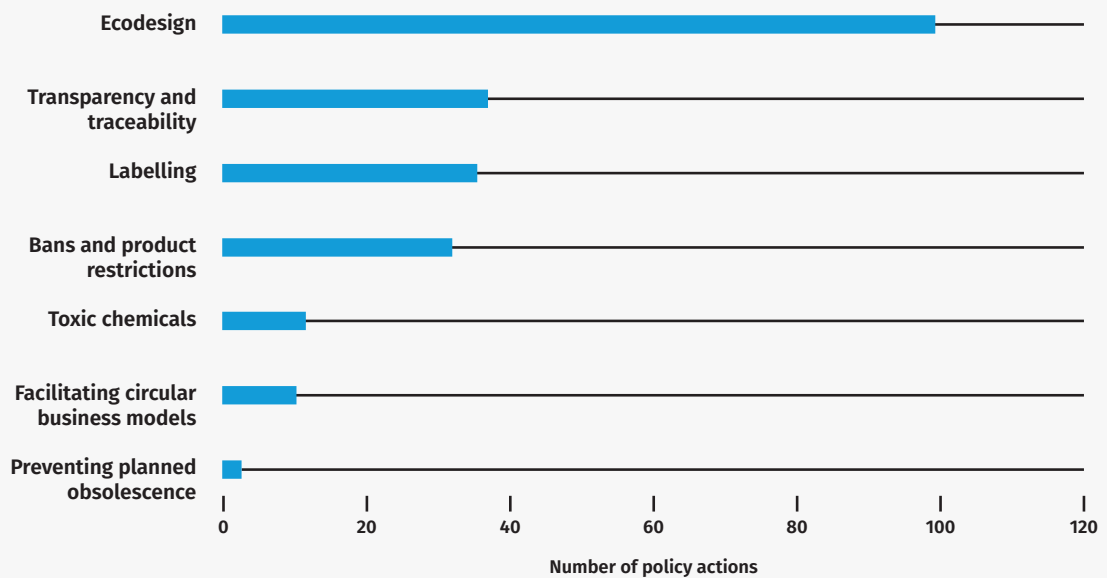


Policy action deep-dives

Examples of Product Requirement actions:

- Leverage Circular Economy criteria as a prerequisite for market access
- Develop and reinforce (minimum) targets and (minimum) rates for circular products and business models
- Adopt rules to control the use of chemicals in production
- Support the development of criteria and labels to describe the circular properties of products, e.g. ex. the repair potential of electronics or the reusability and recyclability of textiles
- Develop a circular product passport for wind farms
- Develop standards and quality controls for remanufactured products
- Leverage Digital Product Passports and Tracking
- Establish an eco-friendly certification system to support product development and overseas export using recycled fiber materials

Product Requirement



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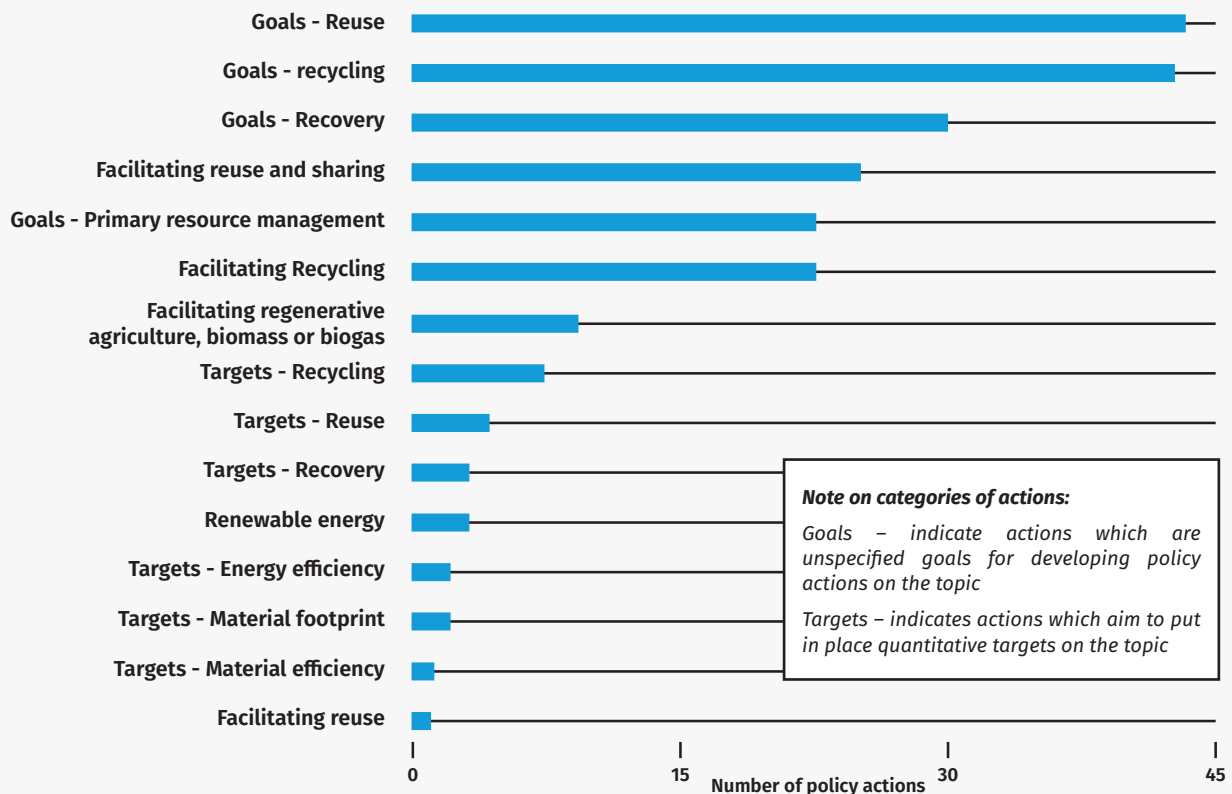
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Policy action deep-dives

Examples of Circular Resource Management Actions:

- Introduce powers to set statutory consumption reduction targets and investigate the feasibility of a national reuse target
- Analyze the criticality of rare metals and elements and undertake activities such as verifying collection systems and supporting the introduction of recycling equipment for highly-critical metals
- Shorten the processing periods for environmental permits for agricultural biogas and facilitate co-operation between farms that will make larger processing capacities possible for these biogas plants
- Explore the option of requiring retailers to offer an increasing percentage of second-hand products
- Provide further guidance, by setting reuse targets for local authorities, requiring them to set their own targets, or requiring reporting to encourage provision of reuse facilities
- Further elaborate the possible target for reducing the raw material footprint coupled with reduction of the environmental impact
- Introduce legal regulation and education in terms of reuse systems and repair mechanism (e.g. textiles, used pallets, electrical and electronic equipment, vehicles), including financial instruments
- Develop a supportive regulatory framework for bio-waste management, especially innovation into applications aimed at increasing resource efficiency and valorisation techniques

Circular Resource Management

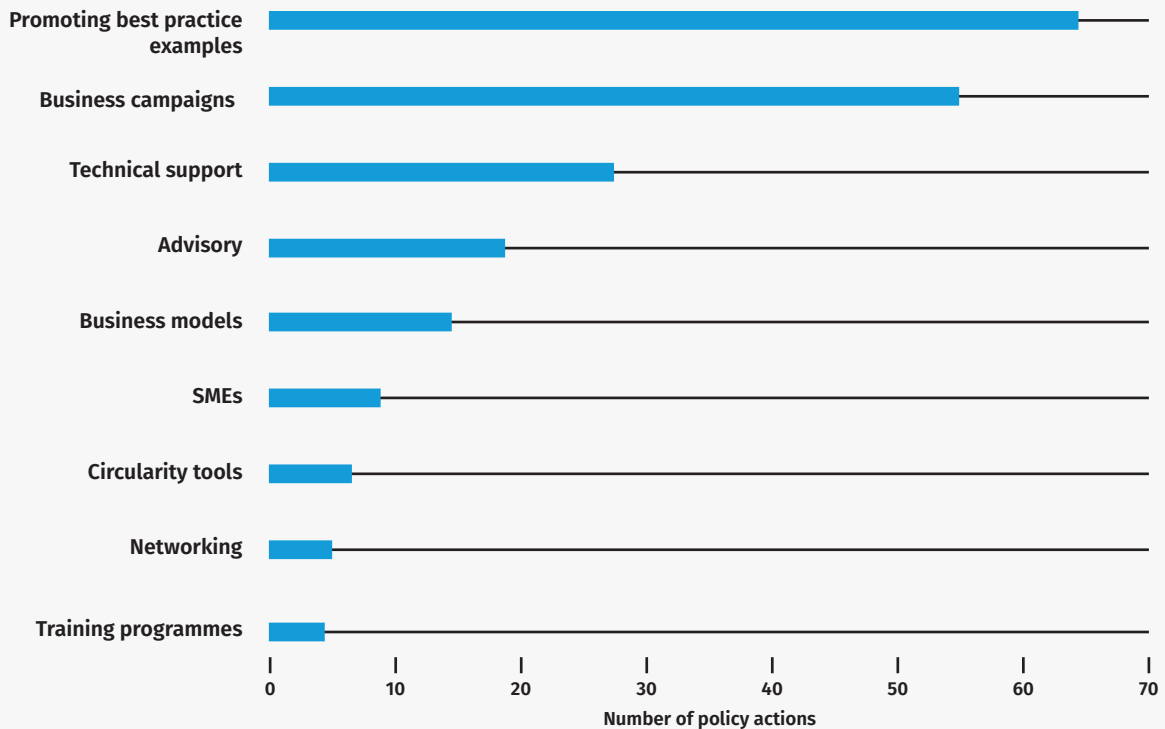


Policy action deep-dives

Examples of Business Support actions:

- Promote the development and use of tools for the diagnosis and measurement of circularity at the organizational level, which consider process indicators (existence of information systems, enabling organizational structures, etc.) and results indicators (reduction of the use of resources, reduction of waste generation, increase in recovery rates, etc.), and that enable the identification of priority areas for improvement
- Strengthen technical capacities through the implementation of workshops for the sectors involved to strengthen the groups of repairers, producers and sales
- Give technical support, paying particular care to small enterprises to design specialized solutions, integrated projects and synergistic schemes that include combination of objects, productive specializations and actions in the field of circular economy
- Develop support tools for new business promotion of models in the production and distribution of goods
- Promote the use of developed tools for circular business models, self-assessment for suppliers, stakeholder scanning, circular examples, and context scanning
- Establish technical and financial consulting service centres to advise companies seeking to implement circular economy business models and finance circular economy projects
- Provide support and advice to businesses to tap into equity investments, and provide training to investors and financial intermediaries on circular economy innovation projects

Business Support



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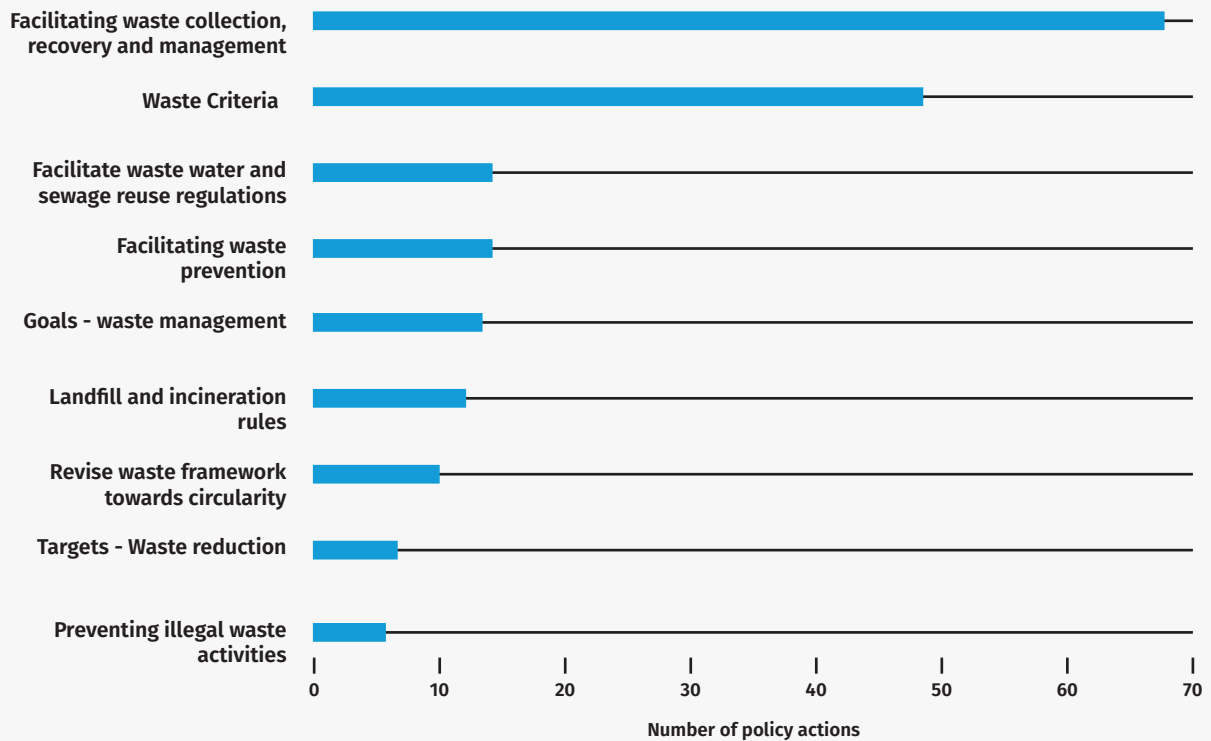
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Policy action deep-dives

Examples of Waste Management actions:

- Set criteria for the end-of-waste
- Create quality criteria for secondary raw materials and their provisioning processes as well as clear requirements (e.g. obligatory recycled quantities in the products) and regulations on their use

Waste Management



Note on categories of actions:

Goals - indicate actions which are unspecified goals for developing policy actions on the topic

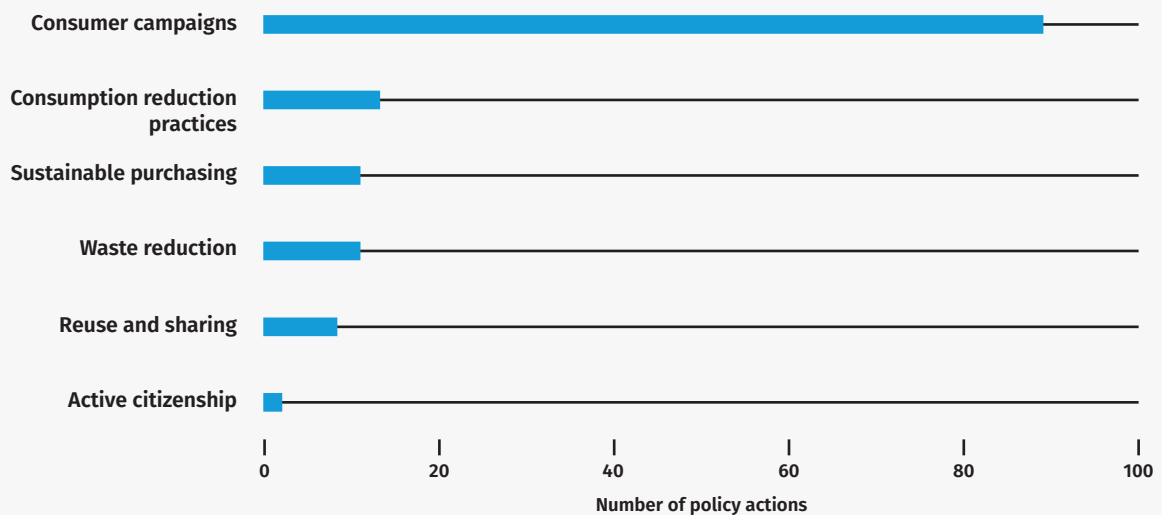
Targets - indicates actions which aim to put in place quantitative targets on the topic

Policy action deep-dives

Examples of actions influencing consumption habits:

- Develop a communication campaign to promote the repair and reconditioning of home appliances
- Implement permanent strategic campaigns on responsible consumption
- Conduct national campaigns in cooperation with local governments, business operators, and other actors to decrease household food loss by half by 2030
- Launch a specific advertising campaign focusing on ecofriendly agricultural practices to promote consumer awareness, consumption, and consciousness regarding organic and sustainable agriculture

Influencing consumption habits



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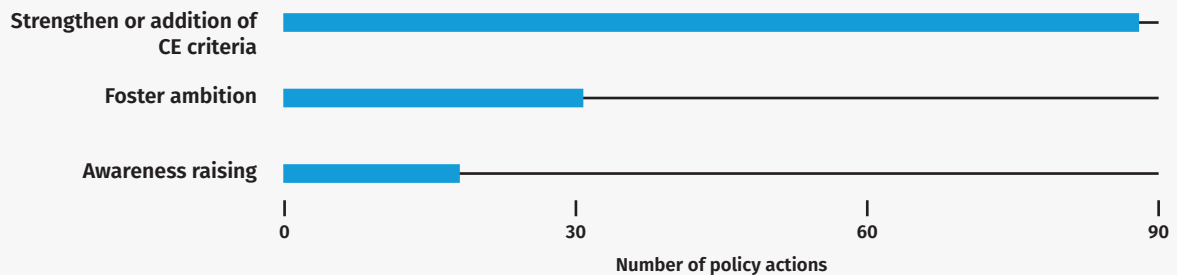
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Policy action deep-dives

Examples of Public Procurement actions:

- Propose the modification of the legislation on administrative contracts for the supply and provision of services to: a) enable the possibility of transferring or selling underused assets owned by the state; and b) enable sharing the use of assets among different state agencies
- Incorporate circularity requirements and criteria in public infrastructure and social housing financed by the state, for example, including the requirement to incorporate a minimum amount of secondary material • Apply auctions to state assets that prioritise reuse
- Explore the possibilities of introducing risk-sharing instruments in sustainable and innovative procurement
- Integrate targets and principles that promote inclusion of solutions to support the circular economy with existing procurement processes
- Develop a set of circular economy criteria and guidelines for including the circular economy and material efficiency in public procurements
- Leverage explicit anchoring of the circular economy in an amendment to the federal procurement law

Public Procurement

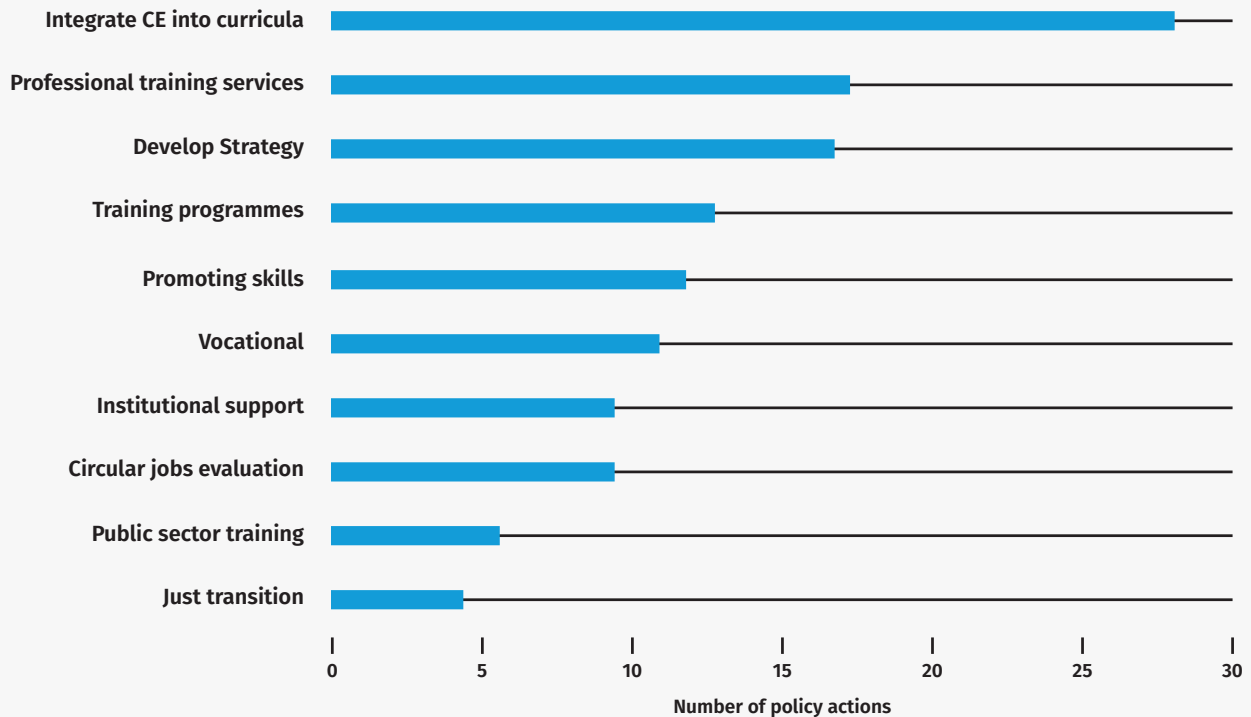


Policy action deep-dives

Examples of Education and Skills actions:

- Develop a system of incentives for universities to introduce research programmes and curricula concerning CE, e.g. subsidies for scientific research, support for subsidizing laboratories/design studios, support for subsidizing the activity of academic associations, competitions for engineering and master’s theses on CE in cooperation with entrepreneurs, scientists and public institutions
- Develop and run circular economy vocational training centres
- Explore the scope for a skills academy for the circular economy
- Establish a program aiming to provide training to surplus workers from coal mining, closed thermal power plants, and nuclear power plants to facilitate their reemployment in activities related to the circular economy
- Offer professional training and course manuals in repair and maintenance, particularly in trades and the construction sector, but also through citizen initiatives (Repair Cafés, for example)
- Integrate circular design regulations and repair knowledge in curricula
- Develop specific training programs in circular economy for public sector workers, focusing on reaching key profiles and roles for the transition. The programs would have a practical approach and ensure a balanced participation from all regions
- Analyse the implications of the circular economy for the employment market and need for qualifications to accelerate the transformation to the circular economy

Education and Skills



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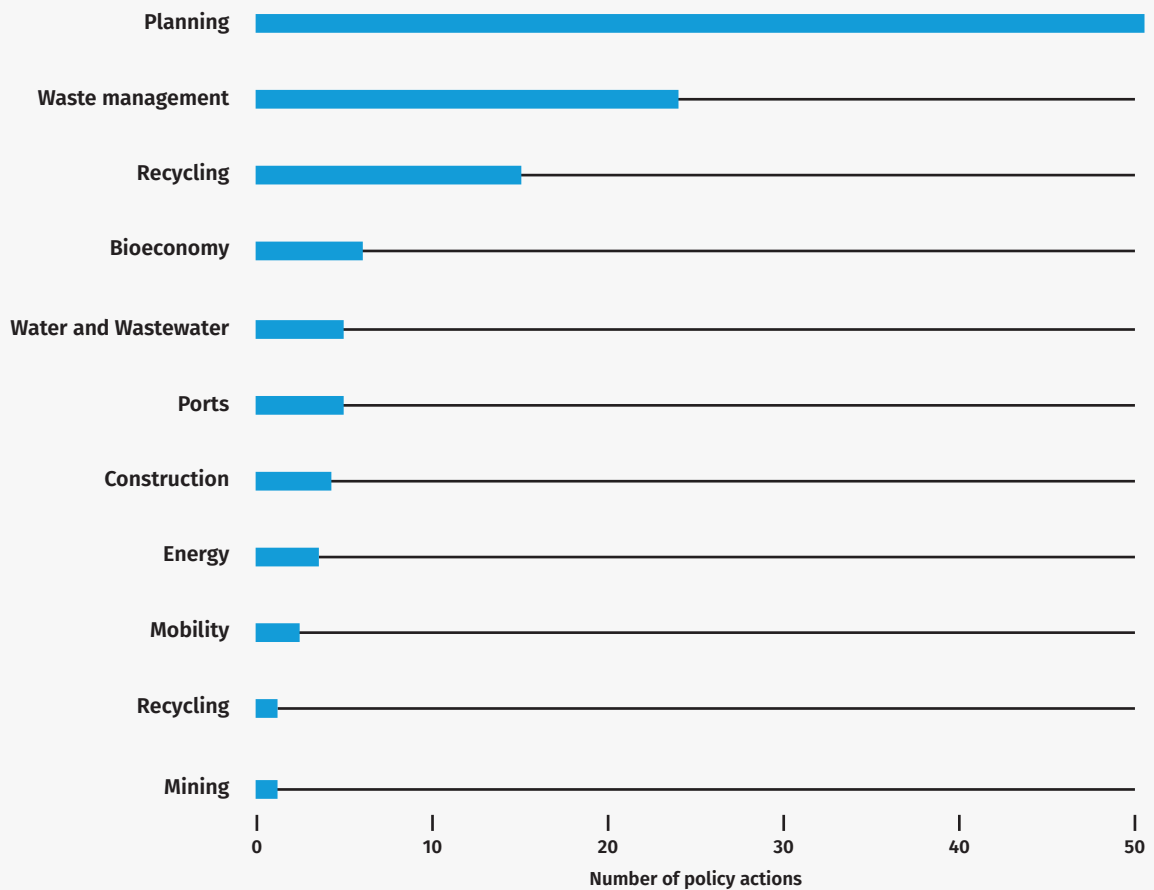
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Policy action deep-dives

Examples of Circular Infrastructure actions:

- Incorporate circular criteria in land use planning instruments and in construction regulations
- Integrate urban and peri-urban farms/food systems into national planning
- Introduce mandatory selective demolition, including a system of inspection / audit before and after demolitions take place to increase the recovery of high-quality components and material fractions from construction and demolition waste, and to encourage high-quality recycling

Circular Infrastructure

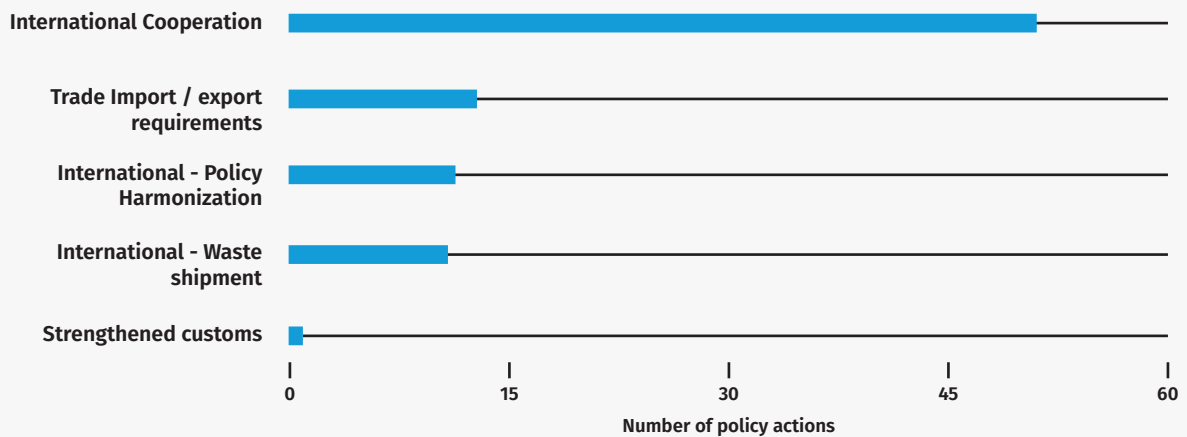


Policy action deep-dives

Examples of Trade policy and international governance actions:

- Integrate CE into development policy and further strengthen the mainstreaming of the circular economy in UN processes and other multilateral forums for international cooperation
- Clarify administrative procedures for smooth import and export of new high-quality waste resources and review rapid processing measures for repetitive imports and exports
- Evaluate minimum standards for the importation of secondhand products and waste for recovery to avoid the generation of negative environmental impacts
- Actively participate and collaborate with the Global Alliance for Circular Economy and Resource Efficiency (GACERE)
- Advance standardization of resource efficiency in cooperation with other nations, aiming at a global society with high resource efficiency
- Contribute to the ISO standards discussion so that various measures are appropriately evaluated based on each country's situation and vision for a circular economy
- Focus on an international Roadmap for Circular Finance, initially aimed at public international financial institutions, followed by private financial institutions

Trade policy and international governance



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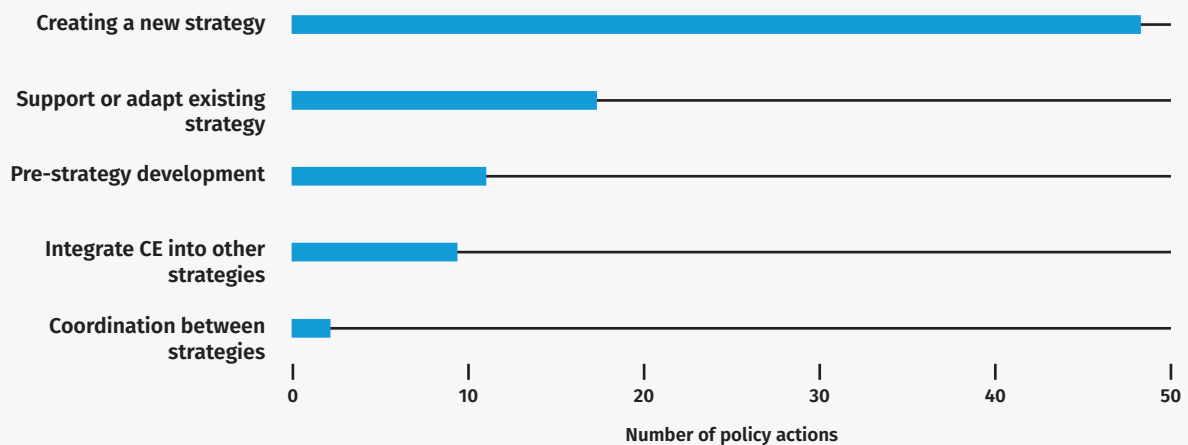
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Policy action deep-dives

Examples of Sector level support actions:

- Promote the development and implementation of circular economy strategies, roadmaps or action plans for specific sectors and territories
- Incorporate the principles of circular and sharing/cooperative economy in Sustainable Urban Mobility Plans
- Set up five transition agendas within the priority themes: (1) Biomass and food; (2) Plastics; (3) Manufacturing; (4) Construction; and (5) Consumer goods. The agendas are intended to provide insight into ways in which the transition towards a circular economy can be accelerated within and between these themes, from a national, EU and international perspective, as well as at the level of local and regional “circular hot spots”
- Develop and approve of an Action Plan for Plastics
- Establish Circular Agreements in priority sectors in the transition to the Circular Economy

Sector level support

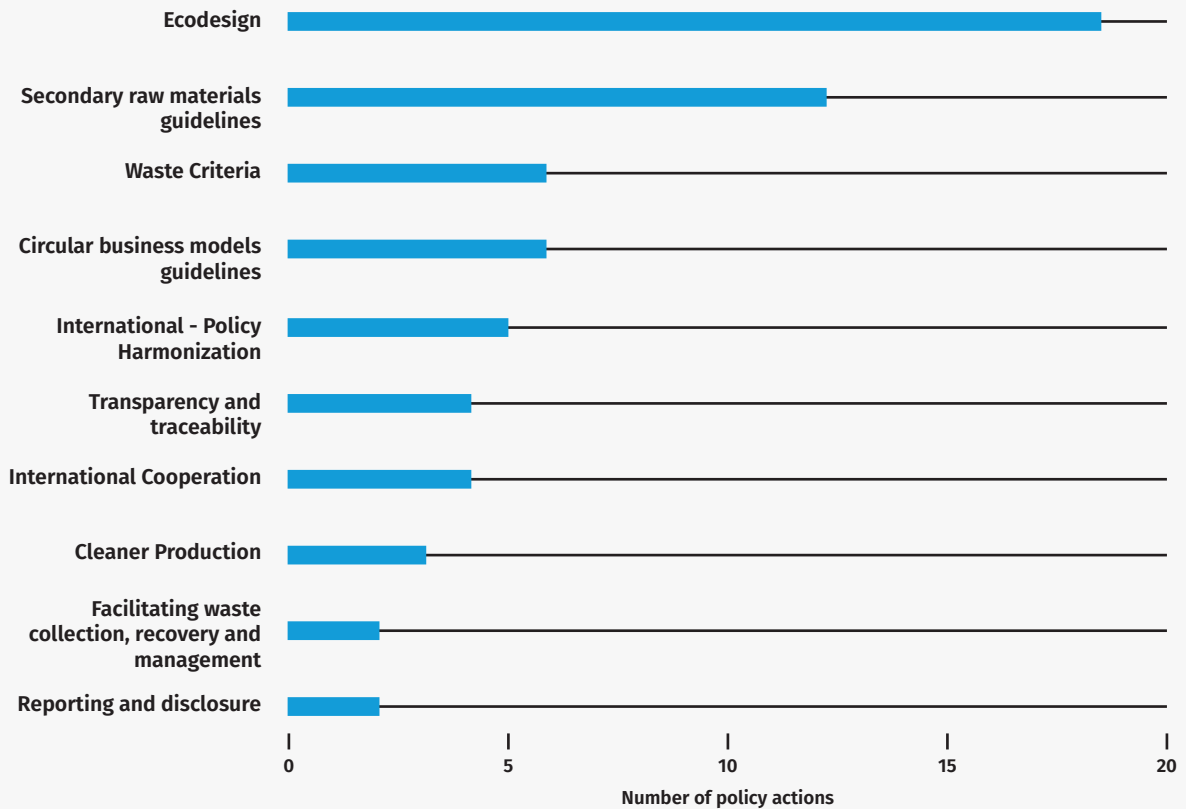


Policy action deep-dives

Examples of Standards actions:

- Identify present standards and technical rules in all segments that prevent circular solutions and relevant revision
- Establish criteria and standards for the reuse of treated water for irrigation purposes
- Set goals and minimum standards for textile collection and processing
- Elaborate a technical standard with specifications and minimum requirements for conducting building demolitions under a circular economy approach

Standards

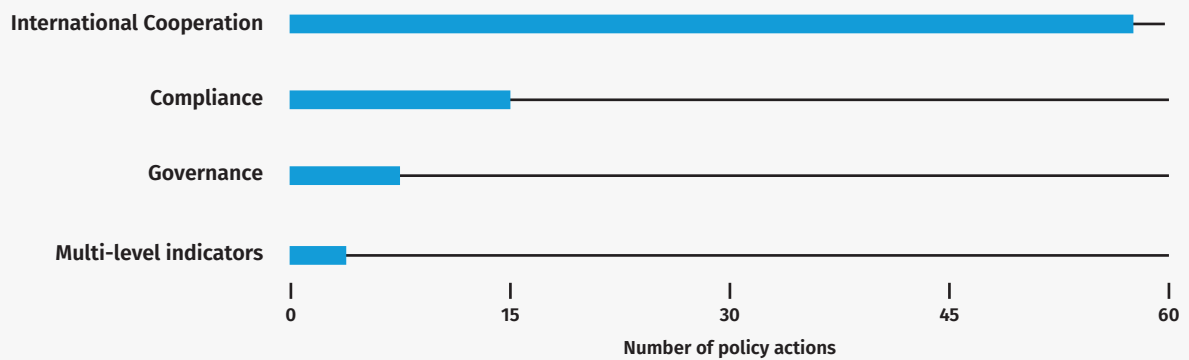


Policy action deep-dives

Examples of Monitoring the national circular transition actions:

- Implement a permanent monitoring system for the transition to the circular economy which is capable of accounting for progress in the implementation of initiatives and progress in the fulfilment of the longterm goals of this roadmap.
- Establish an 'Observatory for the Circular Economy' to collect analytical and aggregated data and evidence from investors, agencies and organizations in an organized manner
- Set up a "technical table" for identifying appropriate indicators
- Move away from weight-based towards impact-based targets and reporting, focusing initially on carbon and natural capital accounting

Monitoring the national circular transition

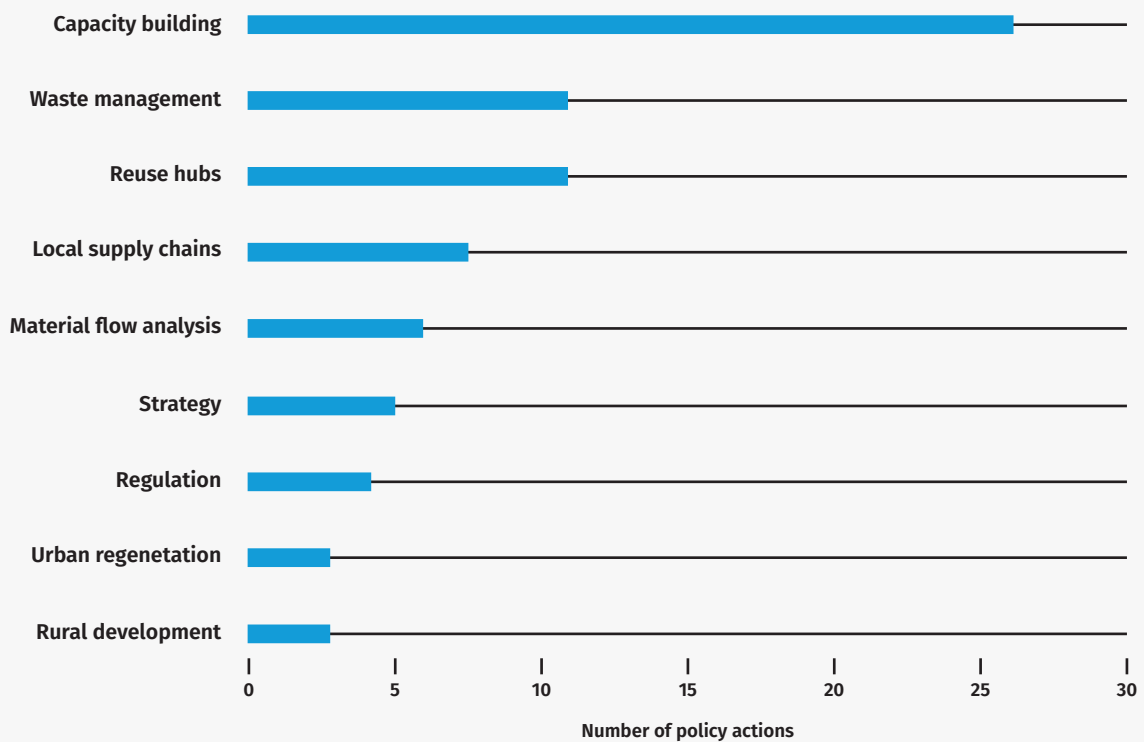


Policy action deep-dives

Examples of Supporting municipalities and local authorities actions:

- Increase integration of the circular economy in the waste management plans of the states and municipalities
- Form regional working groups led by a National Commission
- Establish a 'national competence network' to support the work of municipalities and regional ecosystems in promoting a carbon-neutral circular economy society
- Provide specific payments to municipal authorities for circular craft centers with the aim of realizing nationwide coverage by 2030
- Support knowledge transfer on procurement and tendering to local and regional authorities, including the use of buyer groups
- Establish partnerships with municipalities to train and disseminate repair and reuse networks – resale, social support
- Work in partnership with Local Authorities to develop regional 'eco-park' hubs where collected materials are recycled, reprocessed, and remanufactured into new products

Supporting municipalities and local authorities



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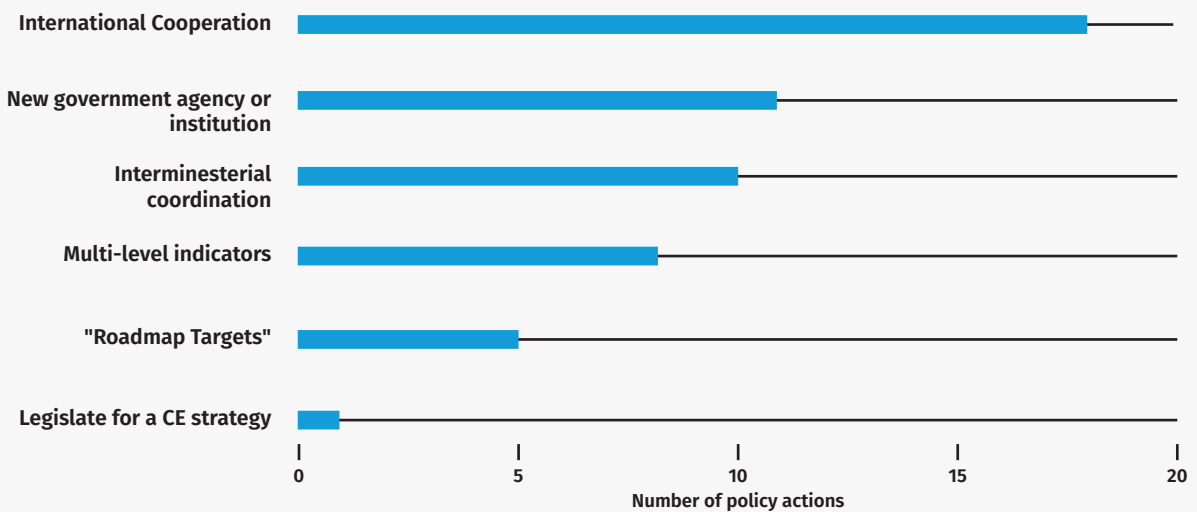
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Policy action deep-dives

Examples of Roadmap governance actions:

- Establish a steering group for the Circular Economy Programme
- Leverage environment agency acting as an auditor for the circular economy, leading the Work Programme on Circular Economy Monitoring and Guidance and publishing an Integrated Circular Economy Report once every two years
- Create the Circular Economy Council as a platform for public-private collaboration involving economic and social stakeholders, as well as academic experts, to guide the circular economy transition
- Create a National Inter-Ministerial Committee on Circular Economy, which will lead the promotion process at the national level
- Establish a circular economy and industrial circular transformation policy-making unit responsible for the transformation of industry to a circular economy and industrial change towards climate change neutrality
- Identify and address Key Institutional Gaps: This may include topics like establishing new institutions, reforming existing ones, and improving coordination between different agencies

Roadmap governance

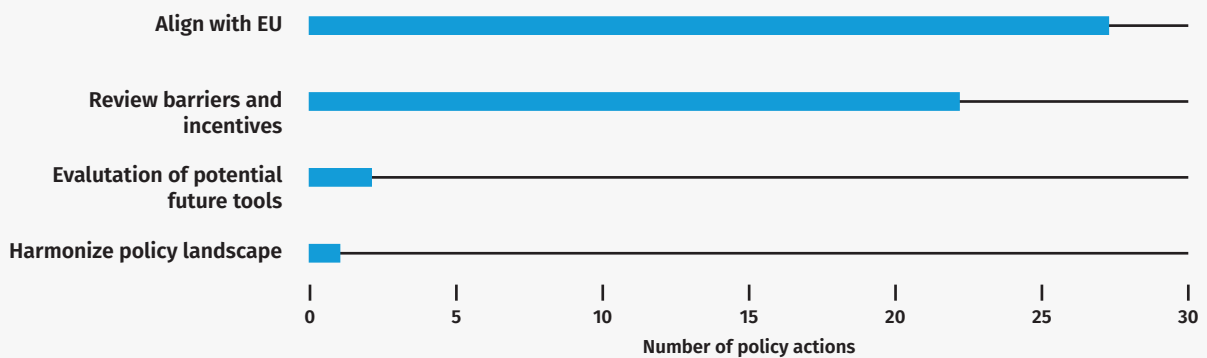


Policy action deep-dives

Examples of Policy design actions:

- Pass and implement new legislation to enable a pipeline of regulatory changes to manage products and materials circulating in the economy and reduce the amount of waste that is recycled or sent for final disposal
- Analyse legal obstacles to the cascading use of value chain by-products, reuse and upcycling
- Identify how regulation can support a greater level of reuse, repair and remanufacturing while continuing to protect the environment
- Identify and develop actions so that the existing regulatory framework promotes and facilitates competitiveness and productivity with a circular economy approach

Policy design

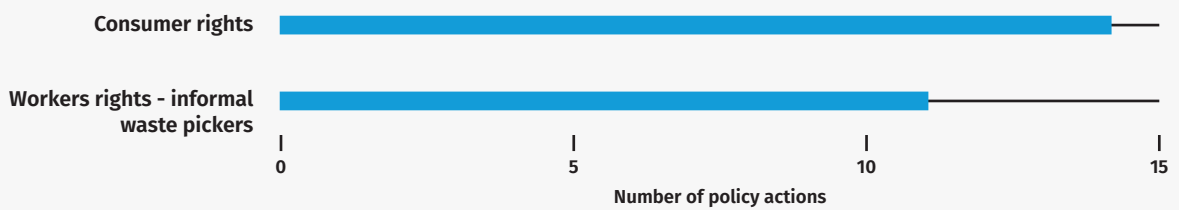


Policy action deep-dives

Examples of Worker and consumer rights actions:

- Facilitate waste pickers access to finance equipment and storage facilities to carry out their activities
- Provide technical and professional training opportunities to waste pickers
- Review and evaluate the expansion of the range of products subject to the mandatory safety and quality standards established by the consumer protection rights law, to limit the risk of contamination by dangerous substance
- Develop a framework for the “right to repair” including access to spare parts
- Explore the potential of legislating longer warranty periods

Worker and consumer rights



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List of roadmaps

Country	Title	Year Published	Type
Australia	A circular economy roadmap for plastics, tyres, glass and paper in Australia	2020	Call to action
Austria	The Austrian Circular Economy Strategy	2022	Roadmap
	Circularity Gap Report	2020	Call to action
Belgium	Ensemble faisons tourner l'économie en développant l'économie circulaire en Belgique - 21 mesures pour l'économie circulaire	2016	Roadmap
Cambodia	Circular Economy Strategy and Action Plan	2021	Call to action
Chile	Roadmap for a Circular Chile by 2040	2021	Roadmap
China	13th Five Year Plan'	2016	Call to Action
	"14th Five-Year Plan" Circular Economy Development Plan	2021	Operational Strategy
Colombia	National circular economy strategy	2018	Roadmap
Czechia	Towards a National Strategic Framework for the Circular Economy in the Czech Republic	2021	Call to action
Denmark	Action Plan for Circular Economy	2022	Operational Strategy
	Danish Strategy for Circular Economy	2018	Roadmap
	Circular Gap Report	2023	Call to action
Ecuador	National Circular Economy Pact	2019	Call to action
	Circular Economy National Strategy and Action Plan	2021	Call to action
England	OUR WASTE, OUR RESOURCES: A STRATEGY FOR ENGLAND	2018	Roadmap
Estonia	Estonian circular economy action plan 2023	2023	Call to action
Finland	Roadmap to the Circular Economy	2016	Roadmap
	Government resolution on the strategic programme for circular economy	2021	Operational Strategy

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List of roadmaps

Country	Title	Year Published	Type
France	Roadmap to a circular economy: 50 measures for a 100% circular economy	2018	Operational Strategy
Germany	Circular Economy Roadmap for Germany	2021	Roadmap
Ghana	Circular Economy Action Plan and Roadmap in Ghana	2022	Roadmap
Greece	National Circular Economy Strategy	2018	Roadmap
	National Action Plan for Circular Economy (NAPCE)	2021	Operational Strategy
India	National Circular Economy Framework	2023	Call to action
Ireland	The Circular Economy Programme	2021	Roadmap
Italy	Towards a Model of Circular Economy for Italy - Overview and Strategic Framework	2017	Call to action
	National Strategy for a Circular Economy	2022	Operational Strategy
Japan	Circular Economy Vision 1999	1999	Roadmap
	1st Fundamental Plan for Establishing a Sound Material-Cycle Society	2003	Roadmap
	2nd Fundamental Plan for Establishing a Sound Material-Cycle Society	2008	Roadmap
	3rd Fundamental Plan for Establishing a Sound Material-Cycle Society	2013	Roadmap
	4th Fundamental Plan for Establishing a Sound Material-Cycle Society	2018	Roadmap
	Circular Economy Vision 2020	2020	Call to action
Latvia	Action plan for the transition to the circular economy	2021	Roadmap
Lithuania	Guidelines for Lithuania's transition to a circular economy until 2035	2023	Operational Strategy
	Roadmap for Lithuania's industrial transition to a Circular Economy	2021	Operational Strategy

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List of roadmaps

Country	Title	Year Published	Type
Luxembourg	Strategy for a circular economy Luxembourg	2021	Roadmap
Malta	Circular Economy Strategy Vision 2020 – 2030	2020	Roadmap
Montenegro	Roadmap - Towards the Circular Economy in Montenegro	2022	Call to action
Netherlands	Circularity Gap Report	2020	Call to action
	Government-wide programme for a Circular Dutch Economy by 2050	2016	Roadmap
	Raw Materials Agreement	2017	Call to action
	Transition agenda for 5 sectors and chains	2018	Operational Strategy
	Circular Economy Implementation Programme 2019-2023	2019	Operational Strategy
	Circular Economy Implementation Programme 2020-2023	2020	Operational Strategy
	Circular Economy Implementation Programme (2021-2023)	2021	Operational Strategy
	New Programme on Circular Economy Implementation 2023-2030	2023	Operational Strategy
New Zealand	Waste Strategy: Getting rid of waste for a circular New Zealand	2023	Roadmap
Nigeria	Nigeria Circular Economy Roadmap (not publicly available)	2024	Operational Strategy
Northern Ireland	Circular Gap Report	2022	Call to action
Norway	Circularity Gap Report	2020	Call to action
	Norway's strategy for developing a green, circular economy	2021	Roadmap
Peru	Circular Economy Roadmap for Industry	2020	Roadmap
Poland	Circular Gap Report	2022	Call to action
	Road map - transformation towards a circular economy	2019	Operational Strategy
Portugal	Action plan for circular economy	2017	Roadmap

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Country	Title	Year Published	Type
Portugal (Madeira)	Agenda of the Autonomous Region of Madeira for the Circular Economy	2021	Roadmap
Republic of Korea	Strategy for Industrial New Growth through Invigoration of Circular Economy	2023	Roadmap
Romania	National Strategy for the Circular Economy	2022	Roadmap
Rwanda	Action Plan and Roadmap	2022	Operational Strategy
Scotland	Circularity Gap Report	2018	Call to action
	Making Things Last: a circular economy strategy for Scotland	2016	Roadmap
Serbia	Roadmap for Circular Economy in Serbia	2020	Call to action
Slovakia	Closing the Loop in the Slovak Republic A Roadmap Towards Circularity for Competitiveness, Eco-innovation and Sustainability	2022	Call to action
Slovenia	Roadmap towards Circular Economy in Slovenia	2018	Call to action
Spain	Circular Economy Pact: The Commitment of Economic and Social Stakeholders	2017	Call to action
	Estrategia Española de Economía Circular: España Circular 2030	2020	Operational Strategy
Sweden	National strategy for a circular economy	2020	Roadmap
	Circularity Gap Report	2022	Call to action
Switzerland	Circular Gap Report	2023	Call to action
United Kingdom	Circular Gap Report	2023	Call to action
Uruguay	Circular Economy Action Plan	2019	Operational Strategy
Wales	Beyond recycling: A strategy to make the circular economy in Wales a reality	2021	Roadmap

Methodology

- All available national roadmaps and strategies published until April 2024 were collated. They were identified via desktop study and engagements with relevant governments. Sustainable Consumption and Production, Waste or sector specific strategies, as well as other sector specific reports published in the domain of circular economy were considered outside of this study's scope unless they explicitly had a cross cutting CE theme. Supra- or sub-national roadmaps were also considered outside of scope, as well as country reports and similar publications. In addition to the calls to action, roadmaps and operational strategies, the authors have identified 10+ roadmaps that have been announced to be produced, but have not been covered in this stocktake.
- All non-English roadmaps were translated into English.
- Each roadmap was evaluated for the following aspects:
 - The way the roadmap was produced (i.e., stakeholder involvement)
 - Roadmap start and end dates
 - Stakeholders responsible for managing the creation of the roadmap and its ongoing operation
 - Current and future funding of the process
 - Any reference to a vision, qualitative objectives and quantitative targets
 - All actions recommended or committed to and thematically codified by type and sector
 - Any reference to linking to other economic, environmental or trade strategy
- Based on the evaluation of the factors above, the roadmaps were categorised into the three categories: Call to Action, Roadmap, or Operational Strategy. Where necessary, relevant in-country experts linked to the roadmaps were consulted to verify the classification.
- The categorisation of roadmaps into: Call to Action, Roadmap, or Operational Strategy was difficult as many roadmaps tended to straddle between two of the three categories. Categorisation should therefore be taken only as a rough guide and not considered hierarchical. The reality is that many were a mixture of roadmaps and strategies with some actions being objective and actionable and some being more vague statements of intent. As such the classification system used in this stocktake should only be considered a rough guide and be improved upon in the following stocktake.
- The contents of a roadmap should not be considered a complete picture of the circular economy policy landscape in that jurisdiction. Many roadmaps only focussed on new actions rather than the continuing or adaptation of existing or ongoing efforts.
- Japan had produced the 'Fundamental Plan for Establishing a Sound Material-Cycle Society' in 2003 – arguably the first national circular economy roadmap to be produced. It was subsequently revised in 2008, 2013 and 2018. Only the 2018 version was evaluated in this study to the unavailability of the previous versions.

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Methodology

- Even for those publications classified as an operational strategy – very few appeared extensive enough to achieve transformational change necessary at the sectoral/regional level and so separate detailed operational plans appear necessary – this is something the Netherlands is currently undertaking.
- Extended Producer Responsibility and Deposit Return Scheme actions were separated as two distinct policy action categories to provide clarity and granularity.
- It is important to note that this study only evaluated national calls to action, roadmaps and strategies. However, there also exists numerous regional or subnational roadmaps with which a similar comparative exercise would prove valuable. In particular, a comparison between content and ambition between different scales as suggested by Abu-Bakar, H., et al. 2024. 'Towards a typological framework for circular economy roadmaps: A comprehensive analysis of global adoption strategies', *Journal of Cleaner Production*, Volume 434, could be valuable.
- The analysis in Parts 3, 4 and 5 has been made using only publicly available CE roadmaps, hence, as example the roadmap of Ghana has not been included. Moreover, the roadmaps of Australia, and Nigeria are not included in the policy analysis.

Examples of quantitative targets laid out in roadmaps/strategies

Country	Quantitative roadmap goals
Austria	<ul style="list-style-type: none"> • Material footprint (MF) reduced to 7 tonnes per capita and year by 2050 • Increasing domestic resource productivity by 50% by 2030 • Increasing the circularity rate to 18 % by 2030 • Reduction of the material consumption in private households by 10% by 2030
Chile	<ul style="list-style-type: none"> • Generation of green jobs 100.000 new jobs 180.000 new jobs • Generation of municipal solid waste per capita Decrease of 10% Decrease of 25% • Total waste generation per GDP Decrease of 15% Decrease of 30% • Material productivity Increase of 30% Increase of 60% • General recycling rate Increase to 40% Increase to 75% • Recycling rate of municipal solid waste Increase to 30% Increase to 65% • Recovery of sites affected by illegal dumping Recover of 50% Recover of 90%
China	<ul style="list-style-type: none"> • Increasing resource productivity by 20 percent compared to 2020 levels. • Reducing energy consumption and water consumption per unit of GDP by 13.5 percent and 16 percent, respectively, compared to 2020 levels. • Reaching a utilization rate of 86 percent for crop stalks, 60 percent for bulk solid waste, and 60 percent for construction waste. Utilizing 60 million tons of waste paper and 320 million tons of scrap steel. • Producing 20 million tons of recycled non-ferrous metals. • Increasing the output value of the resource recycling industry to RMB 5 trillion (US\$773 billion).
Colombia	<ul style="list-style-type: none"> • Energy intensity (TJ) - from 3.7 TJ to 2.9 by 2030 • Water productivity (\$) 4775 to 5495 by 2030 • Green House gas reduction - from 0 to 20% by 2030 • Increase the rate of recycling and re-use of waste materials, from 8.7% to 17.9% by 2030
Denmark	<ul style="list-style-type: none"> • Tasked CE advisory group target for increasing resource productivity by 40 percent from 2014 to 2030 and increasing recycling in the same period from 58 percent to 80 percent. <ul style="list-style-type: none"> • Waste sector's total CO₂e emissions (million tons) • Less waste and better utilization of natural resources (Amount of household waste and similar waste (kilos per capita)) • Material footprint (RMC per capita) (tons) • Resource productivity (GNP/RMC) (kr. per kilo) • Number of Swan-labeled products and services • Turnover of Swan-labeled products and services (billion kr.)

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Examples of quantitative targets laid out in roadmaps/strategies

Country	Quantitative roadmap goals
Denmark	<ul style="list-style-type: none"> • Share of recycling in domestic material consumption (DMC) • Climate footprint of public procurement (million tons CO₂e) • All public procurement must be eco-labeled by 2030 • More and better recycling • Recycling of household waste and similar waste • Landfilling of household waste and similar waste • Recycling of packaging waste • Recycling of glass packaging waste • Recycling of paper and cardboard packaging waste • Recycling of iron and metal packaging waste • Recycling of aluminum packaging waste • Recycling of wooden packaging waste • Recycling or preparation for reuse of end-of-life vehicles • Share of biomass in domestic material consumption (DMC) • Amount of recycled biowaste (kilos per capita) • Recycling for phosphorus from wastewater and sewage sludge • Reduce the amount of food waste in all stages of the food value chain • Amount of food waste from primary production (1000 tons) • Amount of food waste from food industry (1000 tons) • Amount of food waste from retail and wholesale (1000 tons) • Amount of food waste from restaurants (1000 tons) • Amount of food waste from households (1000 tons) • Reduce environmental impact from construction and demolition • Amount of extracted mineral raw materials on land and sea including recovered material (1000 m³) • Share of buildings that are or have an ongoing certification with Swan, DGNB, LEED, or BREEAM certification schemes National circular economy roadmaps and strategies: 2024 global stocktake 59 • Recycling or preparation for reuse of construction and demolition waste • Recycling, preparation for reuse, or other final material recovery of construction and demolition waste • Reduce consumption and improve reuse and recycling of plastic • Amount of marketed plastic packaging (1000 tons) • Amount of certain single-use plastic products (tons) Recycling of plastic packaging waste • Share of recycled plastic in new plastic bottles • Separate collection of plastic bottles

Examples of quantitative targets laid out in roadmaps/strategies

Country	Quantitative roadmap goals
England	<ul style="list-style-type: none"> • To work towards all plastic packaging placed on the market being recyclable, reusable or compostable by 2025; • To work towards eliminating food waste to landfill by 2030; • To eliminate avoidable plastic waste over the lifetime of the 25 Year Environment Plan; • To double resource productivity by 2050 • To eliminate avoidable waste of all kinds by 2050.
Germany	<ul style="list-style-type: none"> • A quantitative target for the Circular Economy of halving the consumption of natural resources by 2050 has been defined
Finland	<ul style="list-style-type: none"> • The consumption of non-renewable natural resources will decrease, and the sustainable use of renewable natural resources may increase to the extent that the total consumption of primary raw materials in Finland in 2035 will not exceed what it was in 2015. The natural resources used to manufacture exported products are not covered by the objective. • The profitability of resources will double by 2035 from what it was in 2015. • The circular economy rate of materials will double by 2035.
France	<ul style="list-style-type: none"> • Reduce resource consumption linked to French consumption in relation to GDP by 30% by 2030 compared to 2010 • Reduce the quantities of non-hazardous waste sent to landfill by 50% in 2025 compared to 2010 • Move towards 100% recycled plastics in 2025 • Reduce greenhouse gas emissions: save the emission of 8 million tonnes of CO₂ additional each year thanks to plastic recycling • Create up to 300,000 additional jobs, including in new professions
Japan	<ul style="list-style-type: none"> • Resource productivity ¥490,000/ton by 2025 • Cyclical use rate at inlet Approx. 18% by 2025 • Cyclical use rate at outlet Approx. 47% by 2025 • Final disposal amount Approx. 1.3 million tons by 2025 • Market size of business related to sound material-cycle society business - almost double by 2025 • Generation of household food loss - decrease by half from 2000 by 2030 • Generation of commercial food loss - TBC • Average power generation efficiency of garbage incineration facilities constructed or improved during the specified period - target 21% by 2022 • Per-capita waste generation per day 0 Approx 850g per capita/day by 2025 • Per-capita household waste generation per day - Approx. 440 g per capita/day by 2025

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Examples of quantitative targets laid out in roadmaps/strategies

Country	Quantitative roadmap goals
Japan	<ul style="list-style-type: none"> • Business waste generation - Approx. 1.1 million tons by 2025 • Cyclical use rate at outlet - Approx 47% by 2025 • Implementation rate of recycling of cyclical food resources – Food processing 95%, food wholesale 70%, food retail 55%, food service 50% by 2019 • Generation of household food loss - Decrease by half from 20000 to 2030. • Generation of commercial food loss - TBD • Establishment rate of life extension plans for individual facilities (individual facility plan) - 100% by 2020 • Ratio of local governments with a disaster waste management plan in place Prefectural governments: 100% Municipalities: 60% by 2025
Latvia	<ul style="list-style-type: none"> • Increased resource productivity to 11.0%
Netherlands	<ul style="list-style-type: none"> • In early 2023 the Netherlands will draw up an action plan to arrive at concrete national targets and will discuss this actively with our stakeholders. They are elaborating useful, concrete targets for environmental impact (climate, environmental pollution, biodiversity) for 2030, with a forward view to 2050. In this regard, they are investigating how we can create a link between environmental impact and raw material footprint. In addition, they are taking account of the extent to which the targets set per product group can help achieve the intended national targets for 2030. • They are exploring the establishment of a mandatory percentage of non-fossil carbon for polymer producers as of 2027, which will increase to 55% by 2030. • They are investigating the extent to which the newly formulated national targets can be allocated to sectors, value chains and/or product groups.
New Zealand	<ul style="list-style-type: none"> • Waste generation: reduce the amount of material entering the waste management system, by 10 per cent per person. • Waste disposal: reduce the amount of material that needs final disposal, by 30 per cent per person. • Waste emissions: reduce the biogenic methane emissions from waste, by at least 30 per cent.
Portugal (Madeira)	<ul style="list-style-type: none"> • Reduce consumption of materials in the economy: (i) Reduce resource import by 10%; (ii) Reduce domestic resource extraction by 5%. • Increase the productivity of the economy: (i) Reduce the weight of raw materials in relation to manufacturing industry turn over by 35% ; (ii) Increase resource productivity by 40% (\$/t) • Increase the reintroduction of waste into production processes: (i) increase the recovery of waste produced by 80%; (ii) increase the incorporation of waste into the regional economy by 50%

Examples of quantitative targets laid out in roadmaps/strategies

Country	Quantitative roadmap goals
Scotland	<ul style="list-style-type: none"> • Cut food waste by a third by 2025
Spain	<ul style="list-style-type: none"> • Reducing by 30% domestic material consumption in relation to national GDP, taking 2010 as a reference. • Reducing waste by 15% with regard to 2010 waste levels. • Reducing food waste throughout the entire food chain: 50% reduction per person in retail and households and 20% in production chains and supplies from 2020, thus advancing towards the Sustainable Development Goal (SDG). • Promoting reuse and reuse enabling activities until reaching 10% of municipal waste. • Improving water use efficiency by 10%
Wales	<ul style="list-style-type: none"> • Become zero waste by 2050 • By 2025: 26% reduction in waste, Zero waste to landfill, 50% reduction in avoidable food waste, 70% recycling By 2030, 33% reduction in waste, 60% reduction in avoidable food waste • By 2050: One planet resource use, 62% reduction in the waste, Zero waste, Net zero carbon

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Overview of sustainable consumption and production strategies



■ Countries with a sustainable consumption and production strategy as of April 2024



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