

Land Use Transformations Project (JHI-C3-1) Additional output: Policy indicators and targets

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1 Introduction

This research memo is part of the work package '[Joined up approaches to managing land](#)' (WP3.2), of the [Land Use Transformations](#) project (JHI-C3-1) within the Scottish Government's SRP 2022 – 27. It was originally written as an internal working document, but following discussions with Scottish Government contacts, it was deemed to be valuable as a more widely accessible document.

The document aims to help answer the research question 'How can coherence be monitored more effectively in the future?'. In order to monitor policy coherence, it is necessary to also monitor individual policies. This document summarises our analysis of targets and indicators in our sample of land-use policies. Targets are important as they establish the specifics of a policy's goals and enable the evaluation of progress towards these goals, while indicators are the means to do this evaluation. Clear targets and indicators are also important for policy coherence, as all policies aiming to achieve a joint goal should include coherent targets and indicators.

2 Method

The team examined a sample of 66 policies related to land use and land use change in rural Scotland and assessed whether each of these policies addressed five goals associated with land use transformation: (1) climate mitigation, (2) biodiversity, (3) climate adaptation, (4) rural prosperity, and (5) justice and inclusion. We then indicated whether the policies include indicators and targets associated with each of these goals, using 'Y' (yes), 'N' (no) 'NA' (not applicable, i.e., when the policy does not address that goal). We also included a textual reasoning for selecting each response. We define **indicators** as a specific qualitative or quantitative measurement (not an action plan or list of tasks). We define **targets** as a clear statement that something will be done by some time or will reach some standard (not general goals, visions or actions).

We also categorised each policy according to the type of policy mechanism (instruments, primary legislation, and steering strategies), and the topic area they belong to (Agriculture, Forestry and Fisheries (AFF), Environment, Climate Change, and Socio-Economic).

For this analysis we looked at the percentages of policies that include targets and indicators, organised by policy mechanism and topic area. To do this we excluded any policies that do not address the goals the targets and indicators are associated with, so percentages are calculated in relation to policies that address each goal (Tables 2, 3, 4 and 5).

When the text states 'policies' we are referring to the 66 policies we analysed, not all existing Scottish government policies. As the findings are dealing with interpretation of qualitative data, our counts and percentages should be used to understand relative differences, and not as precise measurements. The research takes a non-experimental, naturalistic and interpretative approach to policy evaluation.

See Appendix 1 for the full list of policies analysed. For a detailed description of the method used, see [D5 Technical Report](#) (p. 7).

3 Findings

3.1 Do our policy documents reference indicators and targets?

The majority of policies in the sample contain some indicators or targets associated with at least one of the land use transformation goals (climate mitigation; biodiversity; climate adaptation; rural prosperity; and justice and inclusion). Only four policies do not include any targets or indicators associated with these goals. These are: The Scottish Government's Policy on [Control of Woodland removal](#) (2009); [Scotland's National Strategy for Economic Transformation](#) (2022); [The National Plan for Scotland's Islands](#) (2019); and the [Just Transition Land Use and Agriculture](#) (2023). It is worth noting the diversity of type of mechanism, topic of focus, and age of these policies, therefore these do not help explain the lack of targets or indicators in these policies.

3.2 Indicators and targets for individual goals

When examining whether each policy addresses each individual goal, it appears that the majority of policies do not include targets or indicators associated with the specific goal (Figure 1). For example, out of the 47 policies found to be addressing Goal 1, only 18 of them include indicators associated with this goal, and only 13 of them include targets associated with goal 1. While this is not surprising given that a particular goal may not be the main focus of a policy, it has implications for policy coherence and the achievement of joint goals. For example, a policy may have clear targets and indicators associated with a particular goal, but if these are not clear in other policies contributing to the same goal, then these policies may not be effectively contributing to the goal. It also presents issues with monitoring policy coherence, as without clear targets and indicators it is not easy to know which policies should be working together towards a goal.

While one could assume that policies that include indicators would also include targets associated with a particular goal, this is often not the case; many policies that include indicators do not include targets associated with a goal. For example, the [Agri-Environment Climate Scheme](#) (2022) includes a farm environment assessment as an indicator to assess the environmental impact of each applicant to the scheme. However, it does not include any specific targets associated with this. Another example is the [Forestry Strategy 2019-2029](#), which identifies as indicators (associated with goal 4) economic contribution of forestry to the Scottish economy and volume of available timber but does not express any targets for these. The opposite case is also frequent, where policies include targets, but no indicators associated with a particular goal. For example, the [Agricultural Reform Route Map](#) (2024) includes a target of expanding protected areas by at least 30% by 2030 (goal 2), but does not include indicators associated with this. In these cases, the indicators may be implied from the outcome, and may be available even if not explicitly stated in the document. For example, in the Agricultural Reform Route Map, indicators on the extent and quality of protected areas would help monitor progress to 30% expansion and might be derived from the NatureScot [official statistics](#).

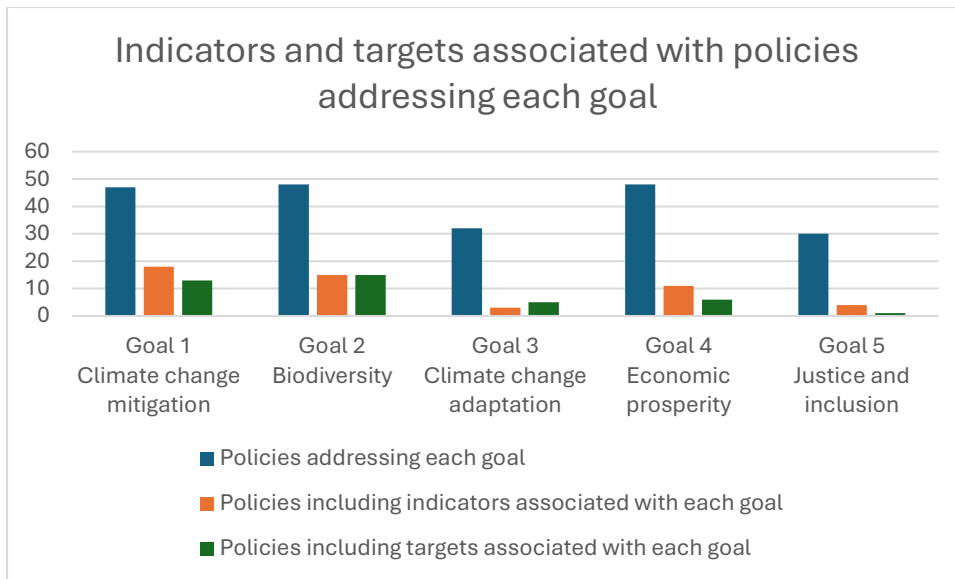


Figure 1. Indicators and targets associated with sample policies addressing each goal.

As the figure above shows, there are more policies that include indicators and targets associated with Goals 1 (climate change mitigation) and 2 (biodiversity). This is partly because there are more policies in our sample that address these goals than goals 3 (climate change adaptation) and 5 (justice). However, Goal 4 (economic prosperity) is addressed by a similar number of policies as Goals 1 and 2, and yet fewer of these include indicators, and especially targets, associated with this goal.

The sample includes more indicators than targets associated with goals 1, 4 and 5. On the other hand there are overall more policies including targets than indicators associated with goal 3, and an equal number of policies including indicators and targets associated with goal 2.

Although 15 policies in the sample address all five goals (see Table 1 in Appendix 1), there are no policies that include *indicators* associated with all goals, and only one policy that includes *targets* associated with all five goals (this is the [Update to the Climate Change Plan \(2018-2032\)](#)). This Plan also includes indicators associated with goals 1 and 2, but not with the other goals, including goal 3 (climate adaptation).

[The Climate Ready Scotland: Second Scottish Climate Change Adaptation Programme 2019-2024](#) includes targets and indicators for all goals except goal 1 (which it does not address).

Many policies include general goals, such as creating ‘new green jobs and economic opportunities to support thriving communities by 2045’ ([Tackling the Nature Emergency - Scottish biodiversity strategy to 2045](#), p. 33), but do not include specific qualitative or quantitative targets. Some policies have implied rather than explicit targets, such as through mentions of net zero, e.g. the [Sustainable and regenerative farming - next steps: statement](#) (2022). Some policies include actions or recommendations but not specific qualitative or quantitative indicators or targets. For example, the [Towards a Robust, Resilient Wellbeing Economy for Scotland: Report of the Advisory Group on Economic Recovery](#) (2020) makes recommendations of how Scottish Government could move forward but doesn't provide any targets or indicators to evaluate if the recommendations will lead to change.

Other policies provide information of where to find specific targets and indicators, but these are found in other legislation and guidance rather than in the policy documents analysed. For example, the [Scottish Land Rights and Responsibilities Statement](#) (2017) includes a link to the Low Carbon Economic Strategy (p. 15) which sets out carbon emission targets. This might be seen as a form of diagonal coherence, where the objectives of one policy are delivered through the instruments of another.

In some cases, where the documents analysed do not include indicators or targets, policies state that more detailed plans will be developed. For example, the [Environment Strategy for Scotland: vision and outcomes](#) (2020) states that they will develop a monitoring framework which will set out indicators to track and report progress. A similar example is the [National Plan for Scotland's Islands](#) (2019), which does not include indicators or targets, but which states that it will develop a route map to deliver the objectives of the plan.

The age of the policies (i.e. the publication year) appears to have some correlation to the existence of targets and indicators, with recent policies being more likely to contain targets and indicators. For example, all policies that include indicators associated with goal 2 were published in 2016 or later, and all policies including targets associated with goal 4 were published in 2018 or later. However, this pattern is not always clear, particularly when there are few policies under this category (e.g. there are only two policies including indicators associated with goal 3). In addition, it is important to note that the policy sample does not have an even spread across all years of publication; there are more policies in our sample that were published more recently.

3.3 What policy mechanisms include indicators and targets?

The majority of policies including indicators and targets associated with the five goals are steering strategies (Figure 2 and Figure 3). The primary legislation rarely contains indicators or targets, and instruments rarely contain targets. Indeed, there are only two instruments that include targets (both of these are regulations: [The Town and Country Planning \(Environmental Impact Assessment\) \(Scotland\) Regulations 2017 Schedule 1+2](#); and [The Conservation of Salmon \(Scotland\) Regulations 2016](#)). None of the instruments in our sample include targets or indicators associated with Goal 5 (justice).

There is no primary legislation in our sample that include targets or indicators associated with Goal 3 (climate adaptation) or Goal 5 (Justice).

The only policies in our sample that include indicators or targets associated with goal 5 are steering strategies. These are: the [Scottish Biodiversity Strategy to 2045](#); the [Climate Ready Scotland: Second Scottish Climate Change Adaptation Programme 2019-2024](#); the [National Performance Framework](#) (2022); the [Update to the Climate Change Plan 2018-2032](#); [Scotland's Forestry Strategy 2019-2029](#); and the [Land Use Strategy](#) (2021).

There are some policies for which we would not expect to find targets or indicators, for example, the [Just Transition Land Use and Agriculture](#) (2023), being a discussion paper, includes general statements rather than specific targets or indicators.

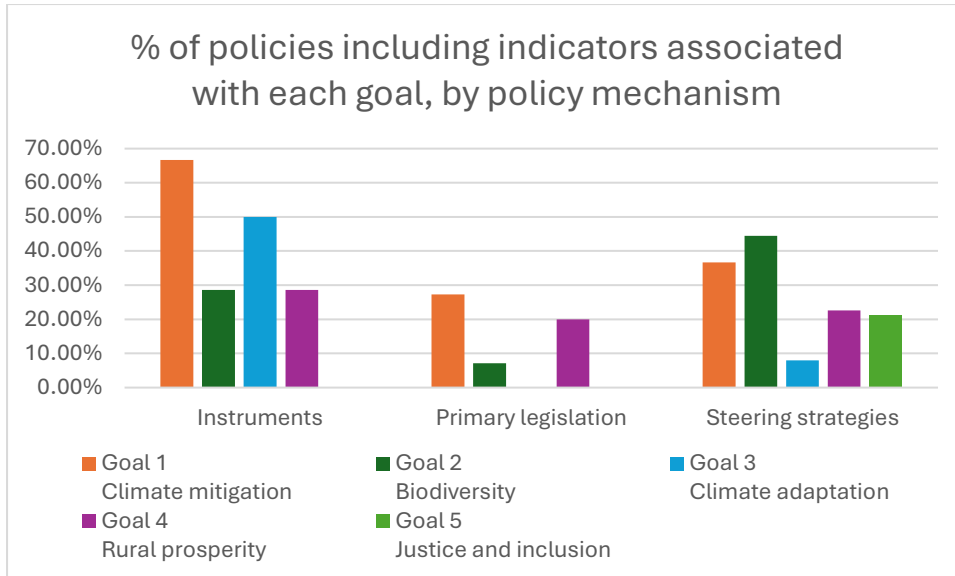


Figure 2. Percentage of sample policies addressing each goal, which include indicators associated with this goal, organised by policy mechanism.

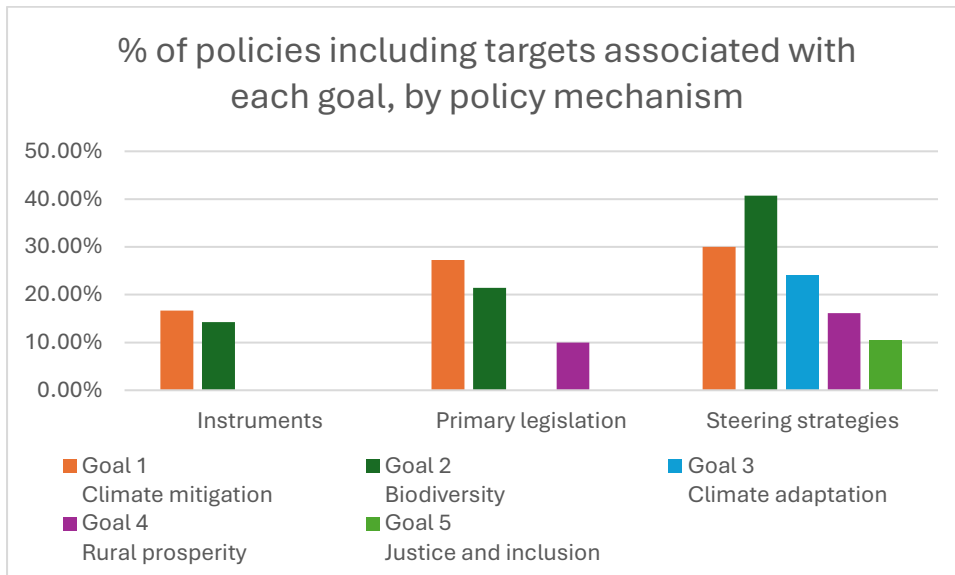


Figure 3. Percentage of sample policies addressing each goal, which includes targets associated with this goal, organised by policy mechanism, E.g. of the Instruments addressing climate mitigation, 17% of these include targets associated with this goal.

It is noteworthy that the only policies in the sample that include both targets and indicators addressing a particular goal are steering strategies (see Table 1 in Appendix 1).

3.4 What topic areas include indicators and targets?

Every topic area includes policies that have *indicators* associated with all five goals, except for the socio-economic area, which does not include policies with indicators associated with goals 3 and 5 (Figure 4), whereas our AFF land use policies have are no *targets* addressing goals 3 and 5, and in the

environment and socio economic land use policy areas, there are no targets addressing goal 5 (Figure 5).

Climate change is the topic area where policies most often include indicators and targets.

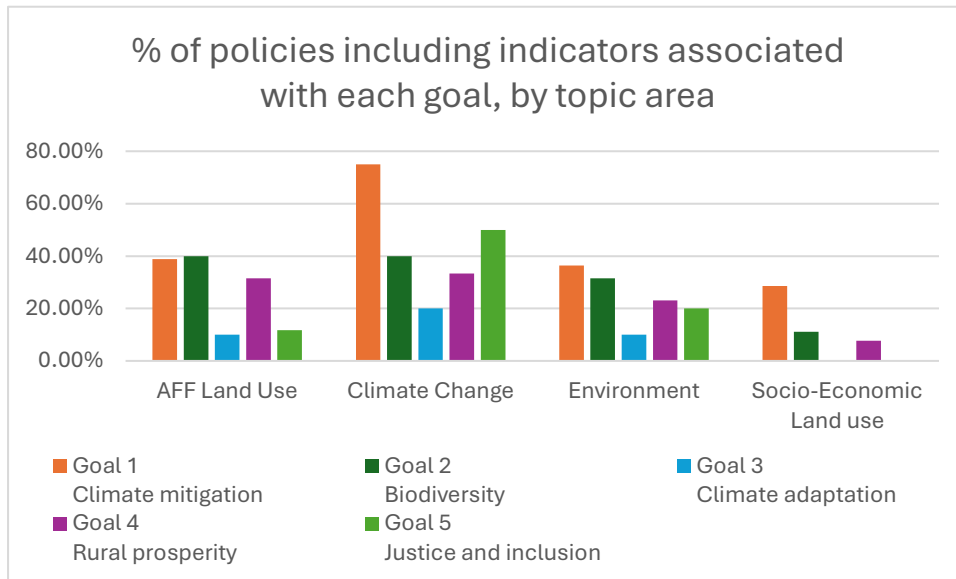


Figure 4. Percentage of sample policies addressing each goal, which include indicators associated with this goal, organised by topic area.

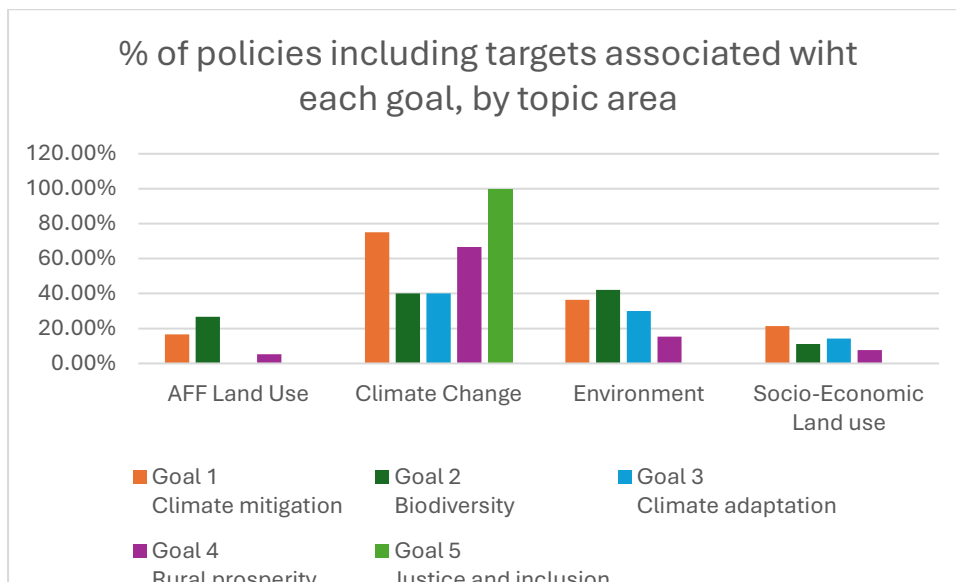


Figure 5. Percentage of policies addressing each goal, which include targets associated with this goal, organised by topic area.

3.5 Other considerations

Indicators and targets can be aimed at measuring either process or outcome of a policy. Indicators and targets for process are useful for measuring the uptake of a policy, whereas outcome indicators and targets help know the extent to which a policy has achieved its goals. Both process and outcome indicators and targets are important, but policies do not always include both. For example, the [Sustainable and regenerative farming - next steps: statement](#) (2022) includes a process target to integrate enhanced conditionality to at least half of all funding for farming and crofting by 2025, but it does not include outcome targets addressing what difference this might make to the environment or to the farming industry.

Another important consideration is the source and availability of data to inform monitoring of policies. Other research has shown that the data available comes from disparate administrative and research-based sources, and that a better integration of these data is required to inform monitoring, as well as the development and implementation of policies ([Policy Note Spatial Landownership Data](#)).

4 Summary for discussion

Our research addresses policy coherence as a way to get to 'joined up approaches' to managing land use in a way that addresses the major themes of Scottish Government's Programme for Government since 2022. Policy coherence has multiple forms, either **horizontal** (connections between different policies to achieve the same goals) or **vertical** whereby the primary legislation, strategic documents and secondary instruments align to connect objectives with implementation. We also found **diagonal** coherence whereby the objectives of one policy is delivered by instruments or strategies associated with another.

Evaluation of progress to policy goals requires clear targets, and indicators that represent a means to measure this progress. Therefore, considering how targets and indicators can support policy coherence has emerged as an additional aspect for us to research.

The findings above show that, based on our analysis of the selected policies, there are rarely clear and explicit indicators and targets within policy domains addressing specific policy goals. There may be arguments for not setting a clear target, or identifying explicit indicators, given the complexity of land use systems; and the difficulty for Scottish government policy to prevail over global drivers (e.g. input inflation, change in consumer demand, climate change impacts). However, we contend that without setting both targets and indicators, it is difficult to undertake policy evaluation.

Furthermore, there may be targets and indicators in use within policy cycles that were not explicitly stated within the documents analysed. It is also possible that there are tacit theories of change used by policy designers that are not in the public domain, for political reasons or just to make documents shorter and more palatable to the general public (as monitoring is often seen a technical issue of limited interest to the public).

Without clear individual building blocks of individual policies having targets and indicators for their own goals, it is more difficult to see how to monitor policy coherence. A first step would be to have more explicit theory of change for each policy domain (if not individual policies), so it is clear what outcomes are expected to be achieved; and the activities and steps that are required to achieve them. Then it would be possible to build a theory of change for connections across domains (e.g. for the next Land Use Strategy) to address targets and indicators for coherence. Often several policies

share common data sets for their indicators, so once the framework is developed, it might be relatively quick to repurpose the data to look across policies.

Our contention, strongly expressed in the [Quantitative Story Telling](#) approach used in the wider research project, is that findings are a boundary object for debate and improvement, not an end in itself. Therefore, any theory of change or evaluation framework should be developed with the policy teams interested in, and responsible for, their policies and the interpretation of the outcomes is also as important as calculations themselves. Doing this will help advance policy coherence by laying out different assumptions, expectations and constraints, and building a shared vision of what policy coherence is for.

5 Potential further work in this area

Potential further analysis include looking at how the directorate that own or implement a policy might help explain the presence or absence of targets and indicators. It might also be useful to look further into whether the targets are addressing policies' process or outcomes.

Appendix 1

Table 1. List of policies analysed, categorised by policy mechanism groups, and primary topic area groups (gold = AFF Land use; pink = Socio-Economic; green = Environment; Blue = Climate). The table indicates whether each policy addresses each of the five goals, and whether they include indicators and targets associated to each goal (Y = Yes; N = No; NA = Not applicable; Other = Other answer, e.g. unable to answer). The bold highlights policies that include both indicators and targets for a particular goal.

Policy mechanism groups	Policy	Goal 1 (Climate mitigation)			Goal 2 (Biodiversity)			Goal 3 (Climate adaptation)			Goal 4 (Rural prosperity)			Goal 5 (Justice and inclusion)		
		Addresses Goal 1?	Goal 1 indicators	Goal 1 targets	Addresses Goal 2?	Goal 2 indicators	Goal 2 targets	Addresses goal 3?	Goal 3 indicators	Goal 3 targets	Addresses Goal 4?	Goal 4 indicators	Goal 4 targets	Addresses Goal 5?	Goal 5 indicators	Goal 5 targets
Steering strategies	Biomass Action Plan (2007)	Y	NA	NA	N	N	N	N	NA	NA	N	NA	NA	N	NA	NA
	Scottish Soil Framework (2009)	Y	Y	Y	Y	N	N	Y	N	N	Y	Y	N	N	NA	NA
	National Planning Framework 3 (2014)	N	NA	NA	N	NA	NA	Y	NA	NA	Y	N	N	N	NA	NA
	NatureScot's Scotland's National Peatland Plan (2015)	Y	N	Y	Y	N	Y	Y	N	N	Y	N	N	Y	N	N
	The Scottish Plant Health Strategy (2016)	N	NA	NA	Y	Y	N	Y	N	N	Other	N	N	N	NA	NA
	Scottish Land Rights and Responsibilities Statement (2017)	Y	N	N	Other	N	N	N	NA	NA	Y	N	N	Y	N	N
	Scottish Energy Strategy: The future of energy in Scotland (2017)	Y	N	N	N	NA	NA	N	N	N	Y	N	N	N	NA	NA

Tourism in Scotland: the economic contribution of the sector (2018)	N	NA	NA	N	NA	NA	N	NA	NA	Y	NA	NA	N	NA	NA
Update to the Climate Change Plan 2018-2032 (2018)	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	Y	Other	N	Y
Climate Ready Scotland: Second Scottish Climate Change Adaptation Programme 2019-2024	N	NA	NA	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
The National Plan for Scotland's Islands (2019)	Y	N	N	Y	N	N	Y	N	N	Y	N	N	Y	N	N
Scotland's Forestry Strategy 2019–2029 (2019)	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	N	Y	Y	N
The Scottish Government's rationale for woodland expansion (2009)	Y	N	N	Y	N	N	N	NA	NA	Y	N	N	Y	N	N
The Environment Strategy for Scotland: vision and outcomes (2020)	Y	N	Y	Y	N	N	y	NA	NA	Other	NA	NA	N	NA	NA
Towards a Robust, Resilient Wellbeing Economy for Scotland: Report of the Advisory Group on	Y	N	N	Y	N	N	Y	NA	NA	Y	N	N	Other	N	N

Economic Recovery (2020)																
The management of wild deer in Scotland: Deer Working Group report (2020)	Y	Y	N	Y	Y	N	Y	NA	NA	Y	Y	N	N	NA	NA	
River Basin Management Plan for Scotland (2021-2027)	Y	N	N	Y	Y	Y	Y	N	Y	Y	N	Y	Other	NA	NA	
A Scotland for the future: opportunities and challenges of Scotland's changing population (2021)	N	NA	NA	N	NA	NA	N	NA	NA	Y	N	N	Other	NA	NA	
Crofting: national development plan	Y	Y	N	Y	N	N	Y	N	N	Y	N	N	Y	N	N	
Just Transition - A Fairer, Greener Scotland: Scottish Government response (2021)	Y	N	N	Y	NA	NA	Y	N	N	Y	NA	NA	Y	N	N	
Bioenergy Update	Y	Y	Y	Y	N	N	N	NA	N	Y	N	N	Other	NA	NA	
Housing to 2040 (2021)	Y	N	N	N	NA	NA	Y	N	N	N	NA	NA	Y	N	N	
Scotland's Energy Strategy Position	Y	N	N	N	NA	NA	N	N	N	Y	Y	Y	Y	N	N	

	Statement (2021)															
	National Planning Framework 4 (2021)	Y	N	N	Y	N	N	Y	N	N	Y	NA	NA	Y	N	N
	Local Food strategy (2021)	Other	N	N	Other	NA	NA	N	NA	NA	Y	N	N	Y	N	N
	Land Use Strategy (2021)	Y	Y	N	Y	Y	N	Y	N	N	Y	Y	N	Y	Y	N
	Scottish Government and Scottish Green Party Shared Policy Programme (AKA The Bute House Agreement) (2021)	Y	Y	Y	Y	N	Y	Other	NA	NA	Y	Other	Other	Y	N	N
	Sustainable and regenerative farming - next steps: statement (2022)	Y	Y	N	Y	Y	Y	Y	N	N	Y	N	N	N	NA	NA
	Delivering our Vision for Scottish Agriculture: Proposals for a new Agriculture Bill (2022)	Y	NA	NA	Y	NA	NA	Y	NA	NA	Y	NA	NA	Y	NA	NA
Primary legislation	Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland) (Habitats Regulations)	N	NA	NA	Y	N	N	N	NA	NA	Y	N	N	N	NA	NA
	National Parks (Scotland) Act 2000	N	NA	NA	Y	N	N	N	NA	NA	Y	N	N	N	NA	NA

Land Reform Act (2003)	N	NA	NA	N	N	N	N	NA	NA	Y	N	N	Y	N	N
Nature Conservation (Scotland) Act 2004	N	NA	NA	Y	N	Y	N	NA	NA	N	NA	NA	N	NA	NA
Flood Risk Management (Scotland) Act 2009	N	NA	NA	Y	N	N	Y	N	N	Y	N	N	N	NA	NA
Climate Change Act (2009)	Y	Y	Y	Y	NA	NA	Y	N	N	Other	NA	NA	Other	NA	NA
Sustainable Use of Pesticides Directive 2009/128/EC	N	N	N	Y	N	N	N	NA	NA	N	NA	NA	N	NA	NA
Crofting Reform (Scotland) Act 2010	Other	N	N	Y	N	N	N	NA	NA	N	N	N	Y	N	N
Wildlife and Natural Environment (Scotland) Act 2011	Y	N	N	Y	N	Y	N	NA	NA	Y	N	N	N	NA	NA
Scottish Planning Policy 2014	Y	NA	NA	Y	N	N	Y	N	N	Y	N	N	N	NA	NA
Peatland and energy: Draft policy statement (2016)	Y	N	N	Y	N	N	N	N	N	N	NA	NA	N	NA	NA
Land Reform Act (2016)	Y	N	N	N	N	N	N	NA	NA	Y	N	N	Y	N	N
Forestry and Land Management (Scotland) Act (2018)	Y	Y	Y	Y	Y	Y	N	NA	NA	Y	Y	Y	Other	NA	NA
Climate Change (Emissions Reduction Targets) (Scotland) Act 2019	Y	Y	Y	Y	NA	NA	Y	NA	NA	N	NA	NA	N	NA	NA

	Agriculture (Retained EU Law and Data) (Scotland) Act 2020	Y	N	N	Other	N	N	N	NA	NA	Y	N	N	Other	N	N
	Good Food Nation (Scotland) Act (2022)	Y	N	N	Y	N	N	N	NA	NA	Y	N	N	Y	N	N
	Proposed new Land Reform Bill (during 2023)	Y	NA	NA	Y	NA	NA	N	NA	NA	Other	NA	NA	Y	N	N
	Agriculture and Rural Communities (Scotland) Bill (2023)	Y	N	N	Y	N	N	Y	N	N	Y	Y	N	Y	N	N
Instruments	The Scottish Government's Policy on Control of Woodland Removal (2009)	Y	N	N	Y	N	N	Y	N	N	Y	N	N	Y	N	N
	The Water Environment (Controlled Activities) (Scotland) Regulations 2011	N	NA	NA	Y	N	N	N	NA	NA	Y	N	N	N	NA	NA
	The Common Agricultural Policy (Cross-Compliance) (Scotland) Regulations 2014	N	NA	NA	N	NA	NA	N	NA	NA	N	NA	NA	N	NA	NA
	The Conservation of Salmon (Scotland) Regulations 2016	N	NA	NA	Y	N	Y	N	NA	NA	N	NA	NA	N	NA	NA

The Water Environment (Miscellaneous) (Scotland) Regulations 2017	N	NA	NA	Other	N	N	N	NA	NA	N	NA	NA	N	NA	NA
The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 Schedule 1 + 2	Y	Y	Y	Other	NA	NA	N	NA	NA	N	NA	NA	N	NA	NA
Scottish Rural Development Programme (2021-2024)	Y	Y	N	Y	Y	N	Y	Y	N	Y	Y	N	Y	N	N
Agri-Environment Climate Scheme (2022)	Y	Y	N	Y	Y	N	N	N	N	Y	N	N	Y	N	N
Good Agricultural and Environmental Conditions (GAECs) 2022	Y	N	N	Other	N	N	N	NA	NA	N	NA	NA	N	NA	NA
Interim Principles for Responsible Investment in Natural Capital (2022)	Y	Y	N	Y	N	N	N	NA	NA	Y	N	N	Y	N	N
Less Favoured area Support Scheme	N	NA	NA	N	NA	NA	N	NA	NA	Y	Y	N	Y	N	N