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Assessing the effectiveness of Finland's sustainable development policy to facilitate a sustainability transition

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Abstract
Sustainable development policies have been implemented during several decades, but so far with too little impact apart from awareness raising. Environmental changes, such as biodiversity loss, pollution, and resource overuse, have evolved from local problems to global crises interconnected with social issues like inequality and polarization. The need for rapid and large-scale sustainability transition is evident. Finland is one of the countries with relatively advanced national sustainable development policy and top ranking in several international comparisons of sustainability performance. Focusing on the societal uses of knowledge, this article uses Finland as a case to assess the effectiveness of conventional sustainable development policy, including national strategies, institutions, and practices. Recommendations applicable also for other countries and avenues for more impactful implementation of sustainability solutions are identified, emphasizing the urgent need to adopt a strong sustainability mindset shifting from short-term economic priorities towards coherent long-term targets beyond 2030, with corresponding policy and legal changes.

Keywords Agenda 2030, Finland, Policy effectiveness, Sustainable development, Sustainability transition

1 Introducing the alleged sustainability champion

Together with the other Nordic countries, Finland has been recognised as a top performer in various comparisons of national progress. It was named the happiest country in the world for the eighth consecutive year in 2025 [1], is perceived as one of the least corrupt countries globally [2], and scores highly in the Freedom of the Press Index [3], Rule of the Law Index [4] and the Democracy Index [5]. Climate awareness of Finns is the highest in the European Union [6]. Finland ranks high also in many [7–10] but not all [11, 12] comparisons of sustainable development.

Despite Finland performing well on selected environmental indicators, such as water scarcity [13] and air quality [14], achieving economic prosperity and human well-being

takes a heavy toll on ecosystems and natural resources. As shown by key indicators of ecological sustainability (Fig. 1.) and numerous national [15–21] and international studies [11], Finland is performing poorly on the fundamental aspects of ecological sustainability. The average Finn's ecological footprint is 3.6 times higher than the world's maximum biocapacity per person [22]. Finland also has the highest material resource consumption in Europe [23]. While carbon dioxide emissions from energy production have been reduced dramatically, net greenhouse gas emissions increased from 49.4 to 53.1 million tonnes (CO2-eqv) between 1990 and 2023, primarily due to reduced carbon sinks in land use and forestry [24]. In terms of biodiversity, Finland has a globally high-level monitoring and assessment system, with results indicating a negative trend. One in six species is endangered [25]. Moreover, 48% of 388 assessed habitat types were evaluated as threatened [26]. This situation persists despite national commitments to halt biodiversity loss, first by 2010, then by 2020, and currently with the internationally agreed target for 2030.

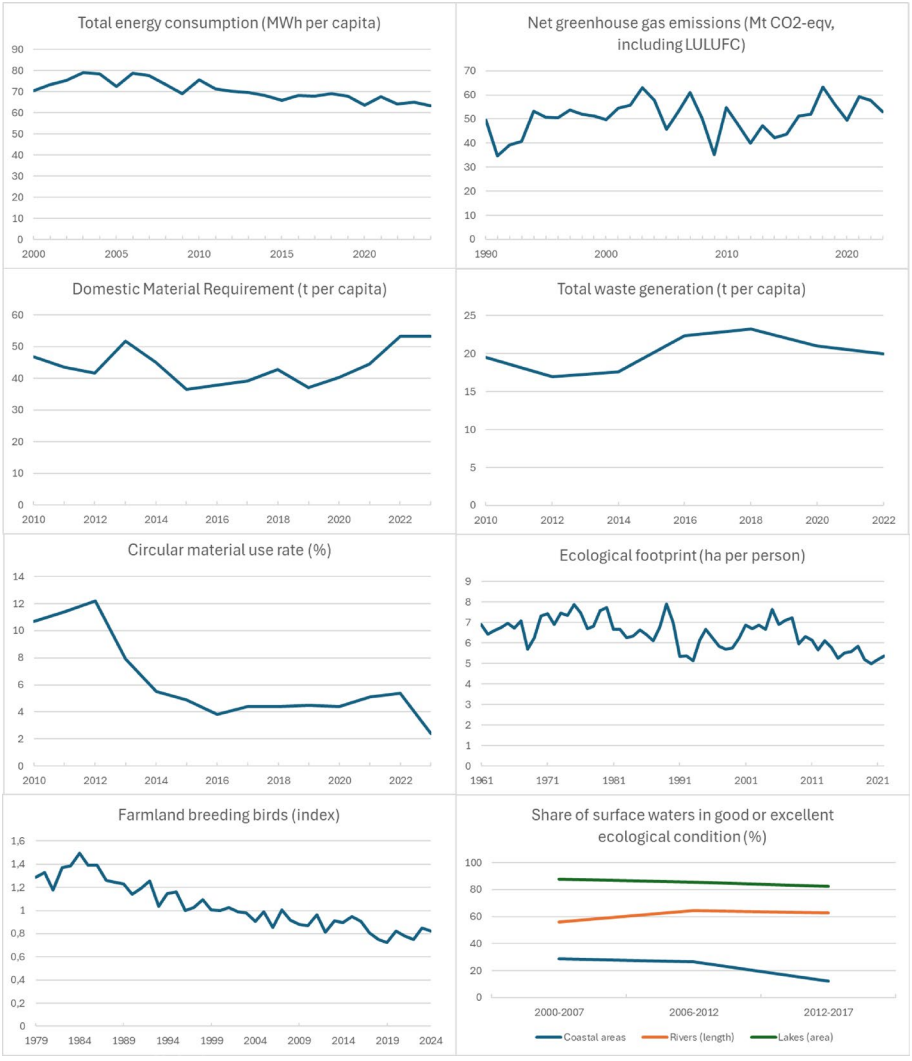

Fig. 1 Selected key indicators of ecological sustainability for Finland. Indicators selected based on [27–29] and updated with data from Statistics Finland, Global Footprint Network and Eurostat

Sustainable development (SD) policy provides a context for examining both national sustainability successes and failures. Finland has consistently pursued SD policy since the late 1980s [30–32]. Considering Finland's success in (relative) country comparisons and difficulties in reducing (absolute) environmental pressures, the country can serve as an internationally interesting example of the design and implementation of national-level SD policies.

This study examines Finland's national SD policy through three key aims. First, it provides a concise and up-to-date overall view of the coordination model for SD policy in Finland, encompassing national strategies, institutions, and practices. Second, the study comprehensively reviews the SD policy, identifying potential gaps in implementation and possibilities for enhanced societal impacts to promote sustainability. This responds to the calls for identifying key political, cultural, and socio-economic factors influencing SD policy design, implementation, and effectiveness in different national contexts [33, 34]. Third, it draws more widely applicable key lessons from this case study focusing on a small Nordic country.

To ensure broader applicability and comparability, this study utilizes the UN 2030 Agenda and the Sustainable Development Goals (SDG) framework as a common benchmark, acknowledging that many SDG target formulations are vague [35] or lack specific attention to vulnerable groups [36]. Furthermore, the level of policy ambition expressed in negotiations before 2015 does not necessarily correspond to the current scientific understanding of the gravity of sustainability challenges and how to promote sustainable development among citizens [37, 38].

The study is based on a review of national sustainable development strategies and government reports, policy evaluations and sustainability assessments. National SD policy is assessed from the perspective of societal uses of knowledge, motivated by decades of research indicating that policy-makers seldom use the findings of policy evaluations, sustainability assessments or indicators directly as a basis for decisions [31, 39, 40]. Instead, findings related to sustainability issues are most likely to contribute through enlightenment and policy learning, often in a diffuse way and among several other contributing factors [41]. The findings may remain unused, or they can be (mis)used in ways not intended by knowledge providers [42].

The study is organised as follows: Section two presents the study approach, materials, and methods, emphasising our focus on societal uses of knowledge. Section three addresses the first research aim by identifying and discussing the key components of the Finnish model of SD policy, with a particular focus on recent developments. Section four addresses the second research aim through an interpretative discussion. This involves assessing the limitations and opportunities within the Finnish SD policy model with insights from other case studies focusing on relevant peer countries. Finally, the third research aim is tackled in the summary, which presents suggestions for improving the overall effectiveness of SD policy, particularly in the context of future developments beyond 2030.

2 Case study approach, materials and methods

This study follows a case study approach (Fig. 2). The study is rooted in sustainability transition studies arguing that more analytical attention is needed to policy processes [43]. Different interpretations exist regarding how the concept of transition or

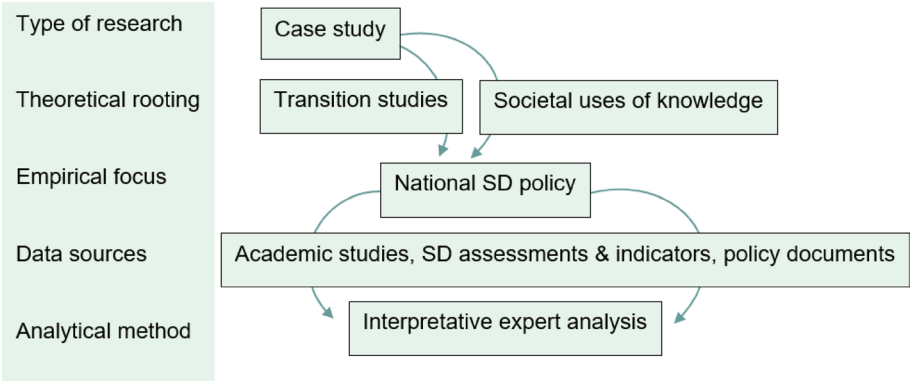

Fig. 2 Study design

Table 1 Materials for the study

Type of materials	Rationale for selecting the materials	References
National SD indicators and independent assessments	Identification of key sustainability trends and impacts of SD policy	[15, 16, 28, 56–62]
National SD strategy documents	Identification of the official national level visions and targets	[63–68]
Government reports, planning documents	Identification of government views of the SD policy implementation	[18–21, 69, 70]
Personal observations, unpublished memorandums	Enriching the data and verifying the interpretations relying on public documents	n.a
Academic studies	Critical views of the Finnish situation and comparative insights	Key references: [31, 32, 34, 40, 71–73]

transformation should be understood, and various approaches have been proposed to capture the key processes [44–46]. Transition studies have typically focused on certain sectors of society, such as transport or energy systems, often addressing the multi-level interplay of niche, regime and landscape-level changes. These studies have explored how certain socio-technical systems fulfil a societal function and how they can change [46]. This study adds to the sector-specific and often technology-oriented literature by focusing on SD policy as an overarching societal system specifically designed to induce a sustainability transition affecting the whole society.

This study adds to the accumulating literature of case studies focusing on the national-level SD strategies and policies [34, 47–54]. Aligning with this literature, this study documents the specific features of the Finnish context of SD policy, as well as identifies potential commonalities especially with other high-income countries.

This case study is based on a selective review of multiple data sources, including pertinent earlier research focusing on the Finnish SD policy, national-level SD indicators, assessment and evaluation reports, government reports and strategy documents as well as unpublished planning documents and memorandums (Table 1). Document analysis is complemented and supported by participatory observations by the authors of this study, following the insider action research approach [55]. The lead author has participated in the development of Finnish SD indicators since the early 2000s and supported the coordination of the Finnish Expert Panel for Sustainable Development from 2019 to 2024. The second author is the coordinator of the panel, and the other co-authors are members of the panel during the period 2023–2025.

The assessment of societal impacts of SD policy is based on qualitative expert interpretations by the authors. The assessment builds partly on the earlier national overviews by the Finnish Expert Panel for Sustainable Development, aimed to evaluate the status of the sustainable development in Finland [16, 28, 62]. SD policy is assessed against policy goals as outlined by the SDG framework, national SD strategy [68], and Government programme [74], as well as science-based understanding of the changes needed toward sustainability in a setting of a North European industrial country [75].

Understanding and assessing SD policy actions, and their outcomes, is challenging due to the complex and interdependent nature of the socioeconomic and environmental systems, multiple uncertainties and long timeframes involved [52, 76, 77]. The assessment method utilised here focuses on identification of general types of societal impacts instead of detailed or quantified analysis of causes and effects. A general-level typology of policy impacts of knowledge outlined by earlier studies is utilised, differentiating between instrumental, conceptual, political and routine uses of knowledge [78, 79]. Instrumental use occurs when certain knowledge is directly employed as a basis of decisions. Conceptual use occurs when knowledge catalyses learning and generates new understanding, potentially influencing decisions on in the longer term. Political use aims at supporting certain predetermined positions with selective utilisation of knowledge. It can include tactical use masking inaction or deflecting criticism. Routine use refers to symbolic, ritualistic or habitual use of knowledge not making meaningful contribution to sustainability transition.

Typical caveats related to case study research also apply to this study. While a focus on a single country offers rich, context-specific insights, generalizability is limited due to cultural, political, geographical and institutional differences. The lessons are likely to be most relevant for the development of national-level SD policy in other countries of the Global North. Another major caveat is related to the use of qualitative expert assessment as a method aiming for a holistic overview of a wide-spanning policy area. Here, risks of unintentional biases are minimised through an assessment process combining a large set of source material containing primary-level interpretations of national level sustainability and secondary-level interpretations by 11 highly experienced scholars representing different disciplinary backgrounds.

3 Insights from the Finnish model of sustainable development policy

3.1 Origins and early coordination of SD policies

In Finland, SD policies emerged as a specific policy area during the late 1980s. Prior to 2016, SD policies were coordinated by a small secretariat consisting of one to three persons based under the Ministry of the Environment and working under the auspices of the Finnish National Commission on Sustainable Development (hereafter the Finnish SD Commission) [30, 32]. It serves as a broad, parliamentary discussion forum with an advisory function. It has been operating since 1993, making it world's longest-lived parliamentary body giving the mandate for SD policies. It has been chaired by the Prime Minister for most of its history. Members consist of policymakers representing the Government, parliamentary groups and Ministries, as well as local administration, business, trade unions, science, the church and non-governmental organisations. The number of members has varied around one hundred (including vice-members). The members are appointed by the Government for a period of four years, based on invitations sent to key

stakeholder groups to self-nominate their representatives. The Finnish SD Commission holds about two to three official meetings annually.

3.2 Evolution of Finnish national SD strategies

Together with international initiatives starting from the so-called Brundtland commission report [80], various national-level strategies have outlined SD policy priorities and guided SD coordination activities. The first Finnish SD strategy was accepted in 1998 [63] and the second in 2006 [64]. Both were rather extensive and detailed formal government documents. The third strategy was a concise charter, "Finland We Want 2050", approved by the Finnish SD Commission in 2013 and updated in 2016 in line with the UN 2030 Agenda [67]. It outlined a vision for sustainability to 2050 and defined the general-level guiding principles and eight aspirational objectives. The 2016 strategy update formulated national vision as "A prosperous and globally responsible Finland that protects the carrying capacity of nature". The current national strategy repeats the 2016 vision. It was released by the Finnish SD Commission in 2022, and it focuses on the years 2022–2030 [68]. It is based on the national roadmap requested by the Government and approved by the Commission in February 2022 [65] and accepted by the Government with minor revisions [66].

In addition to the long-term national strategies approved by SD Commission, the Finnish government has introduced implementation plans aimed at addressing the UN 2030 Agenda. The Finnish parliament first discussed the 2030 Agenda and the parliament's role in December 2016. Three Government National Implementation Plans for the 2030 Agenda have been presented as reports to the national Parliament [18, 19, 70]. National monitoring and reporting on the progress has also provided the Parliament with an opportunity to make recommendations to the Government [69].

3.3 Current SD policy coordination structure

The simplified overall coordination model as of 2025 is outlined in Fig. 3. The key coordination unit for SD policies in Finland is the strategic department within the Prime Minister's Office (PMO). The PMO is an inter-ministerial government organisation supporting the Prime Minister and the Government in the planning of the overarching government functions and decision-making. The PMO is responsible for long-term planning, foresight, research and development activities, and government support. It focuses on societal policy planning related to issues that do not fall within the mandate of any single ministry and coordinates processes involving several ministries. This includes SD policies. The PMO also manages certain inter-administrative projects and bodies, including societal sustainability assessment and councils focusing on research, innovation, and the economy. The PMO currently has about seven full-time expert posts, supported by some assistant workforce and occasional trainees, focusing on tasks related to SD policy coordination, coordination of the Finnish Expert Panel for SD, and running the national sustainability assessment.

3.4 Roles and responsibilities of the PMO in policy coordination

The roles of the PMO in SD policy encompass various tasks. The PMO coordinates and assists the Finnish SD Commission in enhancing networking between key actors to support the implementation of the 2030 Agenda and the national SD strategy. Starting in

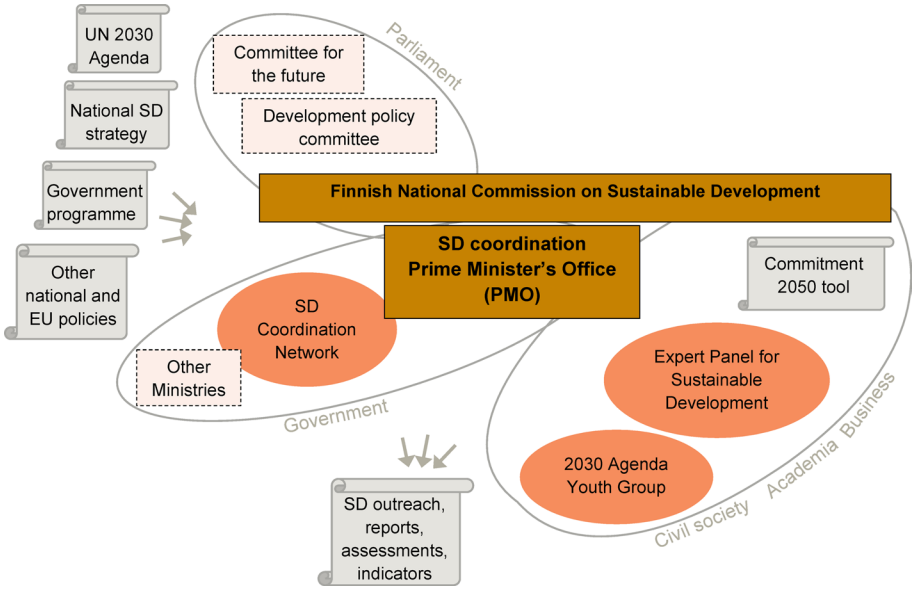

Fig. 3 The coordination model of national SD policy in Finland (based on [34, 60, 70]). Squares denote key policy actors, ovals are networks and advisory organs. See text for further descriptions

2024, the strategy's implementation will be monitored and evaluated every two years based on thematic articles [17]. Additionally, the PMO supports the Government in forming the implementation plan for the 2030 Agenda and ensuring its execution in coordination with all ministries through a network. The PMO also serves as a hub connecting different actors to implement the SD strategy, maintaining networks that include various branches of government, stakeholders such as NGOs, academia, and private sector actors. It coordinates assessments and knowledge synthesis related to SD policy implementation, including designing a long-term societal sustainability assessment [81]. Furthermore, the PMO handles much of the knowledge brokering, reporting, and communication activities related to SD policy, including preparing reports for the government and the UN Voluntary National Reviews [51, 52].

The PMO hosts the General Secretariat of the Finnish SD Commission, consisting of two persons who help the committee to implement the sustainable development policies and strategies and to facilitate the work on sustainable development in society. The Secretariat also aims to influence sustainable development work in the EU, UN, OECD and Nordic contexts. The secretariat is active internationally and collaborates in two international networks: the European Sustainable Development Network, the Global Forum for SD advisory bodies. In addition, the secretariat, together with the Ministry of Foreign Affairs, acts in the UN as well as in the EU sustainable development working groups. Overall, the role of EU-level SD activities remains weak if compared with international UN-level activities. The secretariat and the Finnish SD Commission maintain interactions with the Development Policy Committee of the Finnish Parliament, responsible for issues related to development aid and SD issues related to foreign policy. This interaction focuses mostly on the role of Finland in the implementation of global sustainability policies. Another key collaborative parliamentary organ is the Futures Committee which focuses on the long-term policy designs outside the normal policy cycles.

3.5 Supporting networks and actors

The SD coordination network (Fig. 3) consists of representatives from ministries and aims to support policy coordination and to secure information exchange between individual sector ministries and bodies with coordinating roles (Finnish SD Commission, Prime Minister's Office). The network provides a more up-to-date and non-formal forum for information exchange. The aim of this network is to inform all ministries and reconcile views of different administrative branches with the national SD implementation plans.

The Internal Policy Group, which consists of the heads of both the administrative unit of the PMO and the political lead of the PM, meets on a weekly basis and offers an opportunity to discuss sustainability issues and reflect on current political concerns and initiatives. Additionally, an unofficial governmental sustainability thinking network aims to spark discussions related to SD policies. The PMO collaborates also with the State Treasury, which is responsible for coordinating annual organisational sustainability reports from all state organisations.

A wider network, labelled as National Monitoring Network, consisting of representatives of ministries, key data providers and stakeholders such as labour and trade unions was operational during 2016–2024. It was established with an aim to build a national set of sustainable development indicators [72]. Indicators were selected through a collaborative process, considering data availability and reconciling the views of various stakeholders about the relevance of selected issues and indicators. The updating of the national SD indicator set ceased in 2023 due to the renewal of reporting system. Indicator-based SD monitoring is continued with a set of SDG indicators, produced mainly for international reporting, following the indicator selection by the UN. Updates of this set are coordinated by Statistics Finland [61]. National indicator-based reporting was replaced with more qualitative assessment aiming for increased societal influence through narratives addressing six selected key areas of Finnish society, first version released in 2024. Furthermore, the design of a separate societal sustainability assessment process was initiated by the PMO in 2024 [81].

3.6 Engagement with non-governmental stakeholders

Engagement with society and interaction with non-governmental stakeholders have been a priority in the Finnish SD policy model, partly building on the tradition of the corporatist policy system of Finland [82]. Interaction with non-governmental actors has been considered a key tool to enhance the societal influence of SD policies, ensure the inclusion of viewpoints by key stakeholders, and improve public visibility and acceptance of SD policies (Fig. 3). Interaction processes aim to collaborate with the academia, foster citizen involvement, build public–private partnerships, and involve NGOs.

The most notable tool for interaction and involvement of non-governmental actors has been the Commitment2050 process [83]. It encourages businesses, communities, educational institutions, public administration, political parties, cities, and other actors including private citizens, to make an operational commitment to concrete actions to achieve sustainability goals. The commitments are openly shared and communicated on a specific web portal.[1] The portal is maintained by PMO and currently operated by Motiva Ltd, a state-owned sustainable development company. Commitments aligned

[1] https://sitoumus2050.fi/.

with SDGs and aim to describe novel and concrete actions that can be taken within the next 5–10 years. Specific forms of commitments are designed for "Green Deals", supporting public–private partnerships through industry-wide agreements. As of 2025, over 3000 actors have participated with their commitments.

The Finnish Expert Panel for Sustainable Development was established in 2013 [84]. It aims to improve the interaction between decision-making and academia. It started as an experiment coordinated by the independent national foundation SITRA (2013–2018). During 2019–2022, it was coordinated by three research institutes: Finnish Environment Institute, Helsinki Institute of Sustainability Science, and the Natural Resources Institute Finland. From 2023 onwards, it has been operating as an independent science panel working in conjunction with the PMO. It is composed of 14 professor-level experts selected by an independent committee and nominated by the PMO. The coordination of the panel is currently funded by the PMO, and the expert members of the panel participate on a voluntary basis. The Finnish panel is a member of the European Environmental and Sustainable Development Advisory Councils network, providing wider European perspectives.

The Agenda 2030 Youth Group was set up in 2017 and nominated by the Finnish SD Commission. It aims to increase youth participation in the national planning and implementation of the UN 2030 Agenda [85]. The group is composed of 20 people aged 15–28 years from all around the country. Members of the group are invited to various stakeholder meetings, workshops, discussions, and events on SD. The members also serve as advocates and multipliers for ideas in their own region, organisation, school, or workplace. The members participate on a voluntary basis.

Non-governmental organisations (NGOs) are directly represented in the Finnish SD Commission. NGOs were also invited to participate in the second Voluntary National Review to the UN. It included independent one-page critical reviews of each SDG by NGOs, representing views of civil society [20]. The reviews were invited from established NGOs and other actors identified as relevant by the Finnish SD Commission secretariat.

3.7 Attempts for wider public engagement and indigenous perspectives

While various initiatives have aimed to engage the public, businesses, and policymakers, they often target those already interested or involved. Examples include tailored leaflets explaining SD indicators to policymakers [71] and a more recent citizen panel evaluating societal development through the national SD indicator set. The "Hopeful Future" writing competition, held during the Finnish SD Commission's 30th anniversary in 2023, encouraged people to envision a sustainable future. More conventional engagement includes the annual "State and Future of Sustainable Development" seminar, which summarises progress and recognises achievements. As sustainability knowledge varies widely among different groups, broader participation would be necessary [86]. One promising avenue is integrating SD into various aspects of working life, where social, ecological, and economic challenges—such as occupational health risks, inequalities, and polarization—intersect [87].

Also, the supreme political body of Finland's only Indigenous group, the Sámi Parliament, critically views Agenda 2030 and the Sustainable Development Goals (SDGs), particularly for their inadequate recognition of Indigenous peoples' rights and needs [88].

While the SDGs align with broader societal goals, the Sámi Parliament argues that they insufficiently address the unique position of the Sámi. A key criticism is that Agenda 2030 prioritises state-driven policies without adequately consulting Indigenous communities, potentially undermining their self-determination and cultural preservation [89]. The Sámi Parliament stresses that sustainable development for Indigenous peoples must encompass the protection of their languages, traditions, land rights, and governance structures, beyond merely environmental and economic considerations.

4 (How) can SD policy unleash sustainability transition?

4.1 Challenges in national sustainability strategies

Despite the widespread rhetorical acceptance of the concept of sustainable development as a societal goal and the establishment of various institutions and processes to promote sustainability, national sustainability strategies have generally lacked the capacity to change the society [34, 52, 90]. When judged against the long history of the Finnish SD policy, the policy impact remains particularly weak and subordinate to other policy goals. A partial explanation is that, in Finland and in other Nordic countries, the idea of welfare society based on continuous economic growth has dominated as a societal goal [15, 28, 75, 91]. This presents a fundamental policy dilemma, as achieving ecological sustainability is likely to require questioning the paradigm underpinning the very idea of the Nordic welfare society based on endless economic expansion [92].

4.2 Conceptual limitations and policy dilemmas

On a conceptual level, the limited impact of Finland's SD policy can also be partially attributed to the dominance of weak sustainability approach framing ecological sustainability as secondary to economic targets [93–97]. Besides the Government reports [70], this is demonstrated, for example, by the Government programmes outlining the key policy priorities. The government programme of Prime Minister Sanna Marin (2019–2023) highlighted climate concerns and SD but in practice failed to deliver significant progress towards such sustainability goals [98]. This was partly due to Covid-19 pandemic and escalation of hostilities by Russia in Ukraine in 2022, severely affecting Finnish society [70]. The programme of the right-wing government of PM Petteri Orpo (2023–2027) brings economic development to the forefront, sidelining climate concerns and even replacing the concept of "green transition" with the concept of "clean transition", emphasizing fiscal savings and sustainable growth that prioritizes economic considerations over environmental and social goals [74].

The war in Ukraine elevated hard security and the economy to central issues within the political agenda. While economic growth and militarised security considerations often align, both can pose significant challenges to ecological sustainability. This underscores the urgent need for Finland to shift its paradigm from weak to strong sustainability. Such a shift from economic growth to economic sufficiency is a challenge for other high-income countries as well [11, 38, 95, 97]. Currently, sufficiency considerations are missing from the Finnish national policy agenda, which is dominated by economic and security considerations.

4.3 Reliance on non-binding policy instruments

Besides a conceptual shift, instrumental changes are needed as well. While other policy areas like fiscal policy employ robust, binding instruments, SD policy in Finland heavily relies on "soft" informative policy instruments like communication and awareness-raising that present indicators, scenarios or general level systems analysis or vague policy recommendations but lack concrete and actionable steps for implementation [16, 28, 62]. This often leaves stronger instruments, such as laws with binding targets and economic incentives, unutilized and without a clear and practicable implementation pathway for the various public and private actors [99].

Consequently, SD policy still struggles to achieve legal, political, social, and economic feasibility [100]. This can be labelled as sustainability obstruction, a process where expectations of wide-based voluntary action are diluted to real-life inaction in the world of specific legal mandates and requirements, and political and economic realities favouring the fulfilment of individual short-sighted self-interest. Much like in climate obstruction, the question is not about outright denial but about various forms relying on symbolic and rhetorical acts delaying or watering down concrete changes affecting current power relations and actor positions [101].

4.4 Narrow core group and shallow public engagement

A well-established but narrow sphere of core actors is directly and sometimes deeply involved in national-level SD policy [15, 31, 40, 60]. Regular routine reporting to the parliament, national communication events, SD indicators, assessments, and reporting to the UN have maintained some policy visibility for SD policy. For example, the preparation phase of Voluntary National Review 2020 was inclusive and relatively wide-based with the involvement of several NGOs [20]. Overall, the VNR process focuses attention on backward-looking integrative evaluations of individual actions rather than forward-looking planning that could guide large-scale societal transition.

Despite an emphasis on informative SD policy tools in Finland, public and policy awareness and engagement remain shallow and fragmented [15, 56, 60]. However, this does not mean an absence of SD issues from the public and policy agenda. Several issues closely related to SD have been intensively debated. For example, news coverage of climate change has provided increasing but still limited coverage of climate change as a sustainability issue, widely affecting health, culture and societal development [102, 103]. Thus, SD discussions are framed around individual issues rather than recognizing the interconnectedness of challenges. Similarly, economic policies and decisions are frequently discussed without acknowledging their broader repercussions on sustainability issues [104, 105]. This siloed approach to discussing sustainability issues risks further dividing citizens along ideological lines, hindering collaborative efforts to address shared challenges. Ultimately, this fragmented public discourse undermines the potential for creating sufficient political and social leverage to drive meaningful progress towards large-scale transitions [73].

4.5 Symbolic use of sustainability rankings

While Finland often receives praise in international rankings for its sustainability achievements, their policy impact is typically limited to ritualistic or symbolic use in policy documents, positioning Finland with other countries [18, 21, 70]. This is in line

with earlier results highlighting the limited instrumental use of sustainability indicators in Finland [31, 40]. Furthermore, positive publicity may paradoxically undermine the sense of urgency needed for societal change and discourage the development of radical sustainability solutions that challenge established goals and practices, such as those related to the current social welfare state based on economic growth.

Thus, SD policy at its best remains a series of incremental niche-level "small wins", ultimately failing to significantly challenge the unsustainable trajectory of current societal model [73, 106]. This may be a relevant risk also for other Nordic countries and other small and open economies often found from the top positions of international sustainability rankings [7–9, 107]. Additionally, publicity focusing on the relative successes may undermine the core message about the need for absolute reductions of resource use of high-income export-oriented countries [12, 38]. This problem is exacerbated by the lack of reliable and comprehensive knowledge about environmental impacts outsourced to other countries. For example, according to the preliminary model calculation focusing on Finnish public sector, on average over 90% of the public procurement biodiversity footprint geographically situates outside of Finland [108].

4.6 Sectoral fragmentation and policy coordination challenges

The development of robust and more inclusive national SD policy instruments with genuine transition capabilities faces significant obstacles due to the pre-existing framework of sector-based national policies, each with its own distinct priorities and operational logic. These logics are typically highly legalised, since governmental activities such as treaty organisations, regional public actors, and state ministries all require a constitutive source of authority [109, 110].

The constitutive mandate directs the attention of public institutions, limiting the scope of their interventions. Often, these mandates are sectorally divided, further reinforcing siloed approaches. While sectoral policies may effectively support SD objectives in certain areas, such as health and social well-being, green technology advancement, high-quality education, or decent work, challenges arise when coordination is needed to address trade-offs between the sectors [15, 60].

4.7 National SD frameworks and global influence

SD policy should ensure that potential trade-offs between sector-based goals are transparently recognised and addressed, or synergies fully achieved. For example, energy policy favouring forest-based bioenergy can be in line with climate change mitigation, national energy security, and local employment goals but contradict biodiversity and water protection goals and forestall innovations towards new wood-based products [111, 112]. More generally, sectoral policies are particularly incoherent with respect to natural resource use and management causing societal costs that become accentuated with increasing requirements for economic growth [113]. Recently, this has been distinctive feature of the austerity policy emphasised by the right-wing government [74], with the Ministry of Finance prioritising reduction of government spending, which often comes at the cost of environmental, health and social goals. Overall, gaps remain in assessing and addressing interlinkages, trade-offs, and synergies between targets in different sectors of society, and adopting systems thinking and integrated analytical approaches [16, 111, 114].

The gradually weakening role of nationally based SD policy formulations can be considered as one explanatory factor for low policy impact in Finland: SD framings focusing on global-level problems have weaker domestic policy resonance. Following 2016, the parallel implementation of international SDGs has gained influence over Finnish national SD strategy. Activities aligning with the SDG framework encompass corporate sustainability reporting, particularly among large firms; municipalities implementing local-level sustainability agendas through planning and reporting; and educational organizations—from kindergartens to universities—integrating SD issues into their curricula. For example, originally designed for implementing the national SD strategy, Commitment 2050 is now strongly aligned with international SDGs [83].

4.8 Educational integration and long-term opportunities

The Finnish education system presents significant long-term opportunities for integrating SD policy with the sectoral policies. Introduction of the concept of eco-social education into the national core curricula in 2014 aimed to cultivate a sustainable and resilient society, emphasizing systems thinking and a comprehensive scientific worldview grounded in strong sustainability [115]. The eco-social approach explicitly rejects prioritizing short-term economic gains over the long-term health of the planet (planetary boundaries). It posits that (1) the viability of ecosystems and sustainable use of natural resources determine the success and possibilities of society and the economy, (2) realizing human rights (justice, equality, democracy, cultural diversity) influences the economy's success and (3) markets are not an end in themselves but rather a means to achieve well-being [115]. While sharing core aspirations with SD policy, the eco-social education operates within a distinct administrative framework, separated from key SD policy players. The Finnish National Board of Education is responsible for developing national core curricula for preschool, basic, and general upper secondary education. It is not among the key players of the SD policy, highlighting the need for bridging the established sustainability silos.

4.9 Institutional shifts in SD policy coordination

Moving SD coordination from the Ministry of the Environment to the Prime Minister's Office in 2016 showed a recognition of SD policy as a holistic issue encompassing economic and social well-being, not just an ecological or green concern. Positioned as an overarching organization closely aligned with key policymakers, the PMO offers—at least in principle—an ideal platform for coordinating activities across administrative silos and diverse societal sectors. The shift also led to some strengthening of the resource base, even though the resources remain very limited if contrasted with the all-encompassing scope of SD policy. Thus, the shift was primarily a symbolic one, strengthening the current routines of SD policy but lacking deep impacts on the instrumental decision-making in other policy sectors. This kind of failure of national-level SD policy integration across relevant sectors has been identified as a key challenge also globally [116].

4.10 Funding uncertainties and resource constraints

Funding for SD coordination depend on governmental prioritization during annual state budget negotiations. This creates inherent uncertainty for long-term planning. Uncertainties exist especially regarding funding outside the routine core tasks and obligatory

responsibilities of SD policy coordination. Securing adequate funding for in-depth policy evaluations, timely and effective reporting, and wide-based outreach poses a significant challenge. Acquiring resources for ambitious new experiments and development projects and long-term activities with broader societal impacts, even internationally, presents an even greater challenge. Recent cuts to development aid, coupled with escalating geopolitical tensions, further constrict the possibilities for enhancing Finland's international SD influence and cooperation with Global South.

4.11 Resilient coordination model with weak coordinating power

If compared to other countries, the Finnish coordination model for SD policy has proven remarkably resilient to change [32, 34, 54, 117]. Strong traditions of SD policy, coupled with relatively well-established institutions like the Finnish SD Commission, contribute to this continuity. Paradoxically, the relatively modest resources allocated to SD policy may also contribute to this. Because the activities have not been seen as a primary source of savings during budget austerity periods, they have not faced the same pressure for cuts [118].

The more concise format of the 2013 SD strategy charter was primarily an attempt to increase the policy impact and public appeal of SD policy. The charter aimed to outline SD policy as a distinctive policy area rather than a large and somewhat obscure collection of various strategic goals aligned with sustainability endeavours. It also aimed to encourage broader stakeholder engagement in SD activities. The most recent SD strategy also aims to improve policy relevance by changing the time horizon from 2050 to 2030. This aligns with the UN 2030 agenda and fits better with national policies and strategies often focusing on activities implemented within a timescale of 5–10 years. However, for SD policy such timelines may prove unrealistic due to various implementation delays and the slow response of affected systems.

Overall, SD policy exhibits weak coordinating power, primarily by bringing together existing policy initiatives and goals from other sectors rather than creating new initiatives and visions that guide sector-based target setting. For example, the expectations of direct instrumental use of SD indicators as a basis of decision-making have largely failed, and the use of indicators has been relatively limited, selective and focused on informational contexts [31]. The Finnish SD Commission exemplifies this largely routine or performative role, as its infrequent meetings diminish its policy impact. Importantly, it is not designed to prepare legislative proposals or execute policies but to discuss and oversee the implementation of overarching SD policies. This type of influence, largely confined to symbolic impact, has been observed in SD policies across various countries and in the global implementation of the SDGs [90, 117].

5 Conclusions and recommendations

With the midpoint of the implementation period passed (agreed upon in 2015 and targeting 2030), the global progress toward achieving the SDGs is lagging. Numerous assessments indicate that even in the absence of new shocks such as Covid-19 pandemic, the development trajectories for many of the SDGs are unsatisfactory [7–9, 37, 38]. This situation is particularly critical in countries with limited resources and weak ecological and social resilience to withstand negative change. But as the Finnish case shows, even the sustainability champions must aim higher, not maintaining complacency. As Salo et

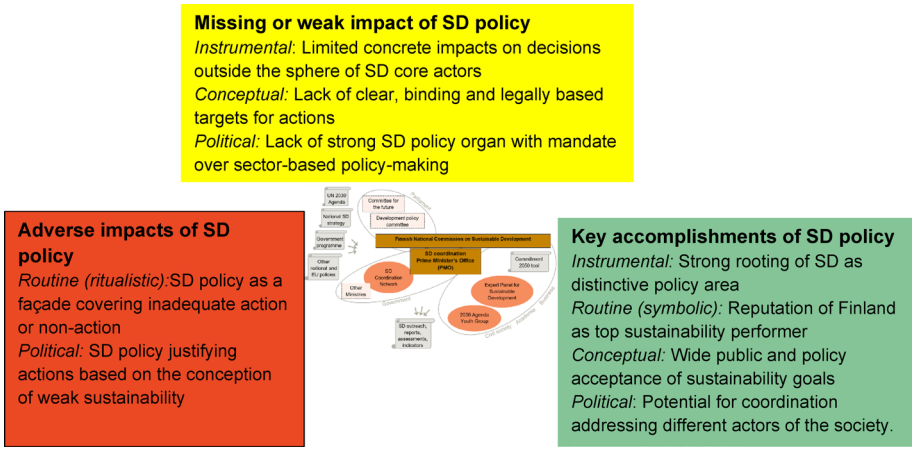

Fig. 4 Summary highlighting the selected key societal influences of Finnish SD policy

al. [73] put it, SD policy should strive for both small, continuous wins as well as larger, more revolutionary wins to truly contribute to sustainability transition. In other words, effective SD policy comprises of win–win strategies where niche or micro-level activities are coherently lined with regime or macro-level activities. This requires capabilities to address complex multi-level systemic interactions [44, 46], as well as capabilities to communicate about key interactions in a constructive and inspiring way.

In conjunction with other case studies and reviews that provide a broader perspective, this case study offers insights for outlining and implementing more impactful national SD policies. Key strengths, weaknesses and risks of the Finnish SD policy are summarised in Fig. 4 from the perspective of instrumental, conceptual, political, and routine knowledge use. These strengths, weaknesses and risks can be drawn upon by other countries as a list of what to avoid and imitate when setting up and implementing SD policies.

A key conclusion from the Finnish case is that SD policy alone is not equipped to induce sustainability transition. The study showed that, instead of a truly impactful and overarching policy, SD policy has become institutionalized as one part of siloed governmental structures and specialized authorities. The SD policy exercises largely symbolic power reactively integrating initiatives from other sectors within the SD policy rather than proactively providing visions for other sectors.

During its history, Finnish SD policy and coordination activities have struggled with low resources in relation to broad responsibilities and extensive expectations. Coordination activities have been maintained by a very small team of experts, and despite recent improvements, permanent funding and the policy mandate are not adequate for coordinating a sustainability transition addressing all sectors of the society. However, the long tradition and well-rooted institutional setting of SD policy, as well as the placement of coordination activities under the Prime Minister's Office create some long-term prospects for enhanced policy influence. One concrete possibility is to strengthen the role of Finnish SD Commission or the parliamentary committee for the future, which has a similar function [28]. A parliamentary organ with a mandate to influence legislation from the holistic perspective on long-term sustainability would be a necessity in policy realms currently driven by short-termism and economic considerations.

Another possibility is to strengthen the collaboration and integration between SD and education policies. This could lead to fundamental, long-term changes in both knowledge and values, fostering sustainable ways of thinking and action in everyday life and supporting willingness, motivation and commitment to communicate about key interactions in a constructive and inspiring way. The question is not only about creating a comprehensive understanding of sustainability challenges rooted in robust science, but also developing essential skills to address tensions between different and even opposing ideologies, interests, aspirations, and legal rights. In a country with an Indigenous population, integrating Indigenous and local knowledge can provide valuable perspectives and practices that enhance sustainability efforts by fostering deeper connections to ecosystems and community-driven solutions.

Nationally, there is a need to shift focus from the formulation of SD strategies and policies to the actual implementation. A key recommendation is that stronger institutional frameworks, including legal changes, are needed for SD policy to take a prominent role guiding the society [34, 51, 119]. This requires changes in ministry mandates to consider SD more explicitly, changes in legislative impact assessment to consider systemic SD impacts of legislation, and substantive legal obligations for natural resource decisions to be guided or even limited by ecological criteria. Most importantly, the potential of SD policy to address cross-sectoral interactions, prevent trade-offs, and enhance synergies between sector policies needs to be fully harnessed.

Internationally, Finland should continue supporting and implementing the UN 2030 Agenda and SDGs as well as contribute to the formulation of the beyond 2030 targets from a strong sustainability perspective. Possibly together with the other Nordic countries, Finland could take a more active role in developing and strengthening EU-level SD policy.

Finally, utilization of scientific knowledge of sustainability challenges must be improved. The knowledge has not been translated into decisions and sustainability actions, so it is essential that the existing knowledge is accepted as a guiding factor in decision-making. This entails a new social contract committing actors from different sectors of society to act on specific focus areas from their perspective [120]. Promoting the sustainability transition requires sustainability competencies, such as communication and systemic competency, which are still lacking. One key issue is the formulation of unambiguous and obligatory science-based minimum targets for ecological and social sustainability [35, 99]. In practice, the overarching SD policy goals need to be clarified and translated into specific targets for sectoral plans and permits affecting landowners and industries. Current SD policies lack concrete and legally binding connections to these practical applications. Many current SDGs lack clear targets [35], making it difficult to accurately assess progress and allowing for the potential sidelining of unfavourable developments under a select few indicators that showcase superficial improvement. In particular, the strong sustainability approach is needed for genuinely efficient use of market economy as a tool that helps to minimise the use of natural resources and maximise the number of people enjoying sufficient levels of wellbeing.

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Declarations

Ethics and consent to participate
Not applicable.

Consent for publication
By submitting my article I agree to pay the APC in full if my article is accepted for publication (unless it is covered by an institutional agreement or journal partner, or a full waiver has been granted). The results/data/figures in this manuscript have not been published elsewhere, nor are they under consideration by another publisher.

Competing interest
I declare that the authors have no competing interests as defined by Discover, or other interests that might be perceived to influence the results and/or discussion reported in this paper.

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