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Policy Gaps and Diverging Perceptions of Effectiveness: An Assessment of Sustainable Permanent Grassland Management in Switzerland

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Abstract: This article focuses on the effectiveness of the Swiss policy mix promoting sustainable permanent grassland (PG) management in the country. We used the Cascade Framework and stakeholder's sentiment analysis to qualitatively assess propagation pathways for generating policy effectiveness in terms of PGs' deliverance of ecosystem services (ESs), to ultimately enable sustainable PG management. We employed a mixed-method approach combining a review of governmental documents, formal policies and policy evaluations with semi-structured interviews with Swiss stakeholders. Through this analysis, we identified 16 policy instruments influencing PG management, including 3 regulatory instruments, 11 incentive instruments, and 2 informational instruments. Results showed that these instruments primarily aim to promote sustainable PG management by employing measures targeting the very structure and composition of the landscape. As such, we found gaps in the types of instruments employed, particularly in terms of demand-side policies, which can explain the poor policy outcomes in relation to a number of environmental quality objectives. In parallel, we found that most of the interviewed stakeholders considered Swiss grassland policy as generally effective, mainly because it was perceived as democratic. While this study focuses on Switzerland, its novel conceptual and methodological approach of using the cascade-framework for policy analysis can be applied to other biogeographical regions and socio-economic contexts. Our findings can improve the calibration of future policy instruments to enable land managers and grassland landscape users to restore or maintain PGs in good ecological condition, by targeting mechanisms that can ensure achieving environmental quality objectives while remaining democratically legitimate.

Keywords: permanent grasslands; sustainable land management; ecosystem services; policy effectiveness; policy instruments



Citation: Quatrini, S.; Hunter, E.; Tindale, S.; Newell Price, P.; Frewer, L.; Lieberherr, E. Policy Gaps and Diverging Perceptions of Effectiveness: An Assessment of Sustainable Permanent Grassland Management in Switzerland. *Agronomy* **2024**, *14*, 2599. <https://doi.org/10.3390/agronomy14112599>

Academic Editor: Gianni Bellocchi

Received: 17 June 2024

Revised: 16 September 2024

Accepted: 5 October 2024

Published: 4 November 2024



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1. Introduction

In the pursuit of transitioning toward sustainable land management, permanent grassland (PG) systems play an important role [1]. PGs are central for the delivery of multiple ecosystem services (ES) and other valuable contributions of nature to human wellbeing, such as food production, nutrient cycling, regulation of water quality and quantity, soil erosion protection, carbon storage, spiritual and cultural value, landscape and aesthetic value and recreational spaces [2]. However, the demand for ES from PG varies across stakeholders and sectors. Depending on the objectives pursued and policy instrument used, they can drive either sustainable or unsustainable land management

decisions at different spatial scales, potentially affecting a large range of ES and a diversity of stakeholders.

In this article, we set forward the question of how effective the Swiss policy mix promoting sustainable PG is? To answer this question, we explore the means or “propagation pathways” that generate policy effectiveness in terms of PGs’ delivery of ES, ultimately enabling sustainable PG management. We do this by applying the socio-ecological systems (SES) approach [3,4] and specifically the Cascade Framework to map PG policies [5,6]. We supplement the policy mapping with sentiment analysis of how stakeholders perceive policies as effective in influencing sustainable PG management. We aim to contribute to the literature on how public policies address the abovementioned challenges [7,8], by focussing on formal policies intended to promote sustainable PG management. Scholars illustrated multiple propagation pathways by which policy measures change target groups’ behaviour and in the end on ES generated by PG. [5]. Following [5], we define propagation pathways as the routes through which policy measures are expected to generate their intended effects either on landscape assets, biophysical structure and function, ES flows, or the behaviour of target groups (such as consumers, farmers, foresters, landowners, local and regional governments, etc.).

In socio-economic contexts where the multifunctionality of agriculture is recognized such as in Switzerland and the European Union [9], an established policy approach consists of providing basic or direct payments to farmers for the delivery of ES beyond the production of marketable food and fibre [10,11]. There are, however, some differences between the basic payments in the EU and the direct payments in Switzerland: while both are designed to provide income support to farmers, ensuring a stable livelihood while promoting sustainable agricultural practices, the Swiss direct payments are more closely tied to specific environmental and social goals. The Swiss direct payments are typically contingent on farmers meeting certain ecological criteria, promoting biodiversity, and maintaining landscape quality [9]. This is often complemented by agri-environmental policies that aim to protect ecosystems, balancing production with environmental protection. This multifunctional approach has the goal to maintain sustainability, but also adds complexity and potential conflicts between sectors and stakeholders [12,13]. These conflicts can be exacerbated by shocks exogenous to the agricultural sector such as those produced by the COVID-19 pandemic as well as exceptional circumstances disrupting the international trade of agricultural commodities, which may strengthen the case for domestic food security and self-sufficiency arguments [14].

Empirically, we focus on the Alpine country of Switzerland where PGs are subject to a number of pressures affecting their sustainability (Supplementary S1). We first map the extant body of relevant policies influencing PG management in Switzerland. Then, we review the findings of existing policy evaluations. Lastly, we triangulate and complement these results with semi-structured interviews.

The remainder of the paper is structured as follows: Section 2 describes the research approach. Section 3 presents the results from our analysis of documentary evidence and stakeholder perceptions. Section 4 outlines potential policy options and related decision-support tools based on evidence of policy gaps. The concluding section summarizes the salient findings, outlining potential implications for policy and future research.

2. Research Design, Materials and Methods

Our research design followed the SESs approach [3,4] to study the interaction between natural resources (their functions and ESs), governance systems (here in terms of formal policies), and users. To assess these interactions, we employed a mixed-method approach as outlined below.

2.1. Conceptual Framework

We used the Cascade Framework [5,6] to illustrate and compare the propagation pathways followed by relevant PG policies.

The Cascade Framework enabled us to visualize the logic behind the interventions by linking all supply-side and demand-side factors targeted by the policies. The former refer, for instance, to the institutional, economic and market structures that characterize the operational contexts within which actors operate. The latter refer to individual and societal drivers that affect consumption patterns and (un)sustainable behaviour.

Policy effectiveness has been defined as the “use of particular policy instruments in such a way as to increase the chance to achieve the defined policy target” [15]. As such, it is supposed to address the “state of the underlying problem” [16]. Policy effectiveness pertains to the degree to which policy objectives are achieved [17]. However, the definition of a policy problem can vary significantly among different actors, each with their own interests and goal orientations [18]. Two key aspects are crucial when evaluating policy effectiveness. First, democratic considerations are essential for addressing stakeholder needs and ensuring that all interests are represented fairly. Second, the relevance of the policy hinges on the alignment between the defined problems and the established objectives. More broadly, policy effectiveness is closely linked to what stakeholders deem acceptable, particularly since the implementation of public policies inherently entails some level of top-down state intervention and enforcement authority [15]. Scholars have proposed that legitimacy, particularly regarding the acceptance by relevant stakeholders, is of significant importance [16]. Other scholars contend that efficiency is a crucial factor in governance and resource management. Efficiency refers to the capability to achieve desired outcomes while minimizing costs and avoiding waste or adverse effects [19].

We employed a sentiment analysis approach, following a lexicon-based, manual process to capture positive and negative stakeholder opinions about the identified policy mix [20]. For this purpose, we adopted a holistic approach and captured all the above-mentioned dimensions of policy effectiveness as our independent variables. We used both top-down and bottom-up approaches to triangulate qualitative findings about the perceived importance of these determinants of policy effectiveness for each policy instrument identified. The top-down analysis allowed us to assess impact claims expressed by publications by the policy-making authorities themselves or resulting from independent policy evaluations. The bottom-up analysis allowed us to elicit indicators of perceptions of effectiveness from representatives of key stakeholder groups, including academia, farmers, government, and other interest groups. With this model (Figure 1), we collected and assessed 460 stakeholder statements both from the impact claims from the grey literature as well as from the interviews.

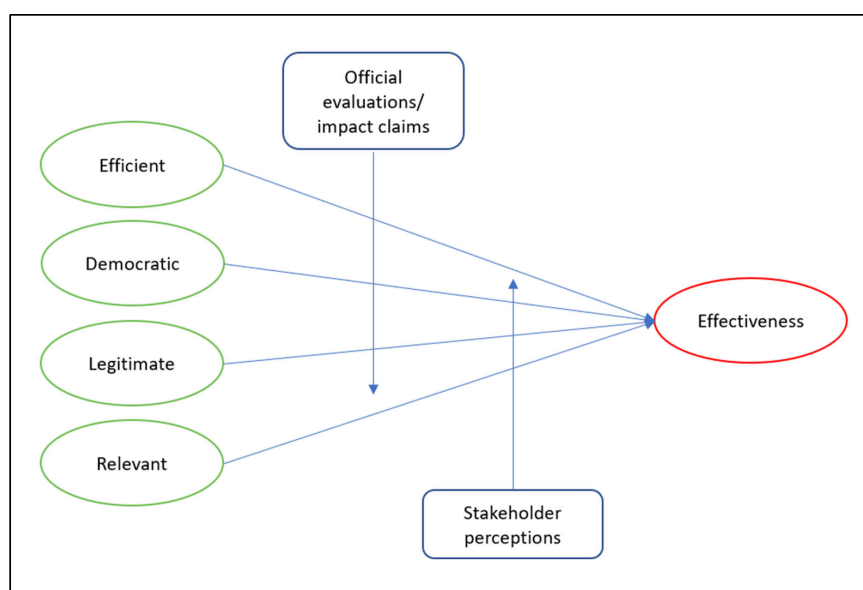


Figure 1. Our model for sentiment analysis of policy effectiveness. Note: in our sentiment analysis model, the effectiveness of policies is illustrated as a dependent variable (highlighted in red), which

depends on four dimensions or attributes, namely efficiency, democracy, legitimacy, and relevance (highlighted in green). These latter can be considered to have a different weight or importance in terms of influencing policy effectiveness, depending on whether they are evaluated from the perspective of policymakers (i.e., a top-down approach) or from the perspective of other stakeholders (i.e., a bottom-up approach). Source: [21].

2.2. Swiss Case Study

We used a case study approach due to the complexity of the subject of analysis, where the context affects the case in a real-world situation with many uncontrollable variables, such as weather and climate and socio-economic and political events [22]. We chose Switzerland as a case study representing the Alpine region. Given its extensive share of grasslands and competing uses for very limited space, the challenges and pressures that PG management faces in Switzerland are illustrative of similar situations that can be found in several other European countries.

The purpose of this case study is to determine whether Swiss policies have been effective in promoting a balanced provision of multiple ESs, taken as a proxy for sustainability. To this end, we identify and assess Swiss PG policies that support the delivery of multiple ESs, such as provisioning services (e.g., food, fodder, wool and biomass production), biodiversity-related services (e.g., species richness, maintenance of target species of flora and fauna, pollination, etc.) and other non-provisioning services (e.g., climate regulation, water purification, mediation of water flows, flood protection/mitigation, erosion control, landscape, recreation, and animal welfare).

2.3. Policy Mapping

We first mapped the extant body of current Swiss policies (those into force in 2019) promoting sustainable PG management and then complemented this with a review of the findings of policy evaluations. We thus did not focus on policies that may compromise PG sustainability or lead to a reduction of PGs (e.g., for agricultural intensification, land use change, etc.) [21]. Thus, relevant policies included those that target a broad set stakeholders and entities, including farmers, landowners, land users, tourists, forest owners, landscape planning entities, conservation entities, etc.

We followed a two-step process to identify relevant policies. First, we combined internet search and snowballing [23] to source official policy documents, evaluations, and related stakeholder statements. We identified 85 documents in this way. Then, we consulted with a panel of experts to validate our selection. In this panel, we included 10 experts from different sectors (academia ($n = 1$), national government ($n = 3$), regional government ($n = 2$), farmers' interests ($n = 2$), and public interests ($n = 2$)). Next, we focused on policy instruments as a central tenet in studying policy effectiveness [17]. We distinguished between 'sticks' (i.e., regulatory instruments), 'carrots' (i.e., economic incentives), or 'sermons' (i.e., information instruments) [24].

We coded each policy and policy instrument using the Policy Analysis Table (PAT), developed under the EU-funded SUPER-G project (Sustainable Permanent Grassland (SUPER-G): <https://www.super-g.eu/>, accessed on 1 June 2024). The PAT has three sections: (i) policy description; (ii) policy content, and (iii) policy instruments (Supplementary S2).

2.4. Stakeholder Interviews

To validate the results of the top-down assessment of the identified written statements regarding policy impacts, conducted interviews with 10 policy experts representing relevant stakeholder groups. For the identification and selection of a representative panel of PG experts, we followed the Blue Ribbon Panel approach established within the framework of the SUPER-G project for all participating countries [21]. Stakeholders were identified using a snowballing technique [23,25], as outlined below.

First, we developed a list of potential interviews ($n = 38$) covering the following stakeholder groups: academia ($n = 6$); national government ($n = 9$); regional government

($n = 9$); farmers interests ($n = 3$); public interests ($n = 11$) [21]. We then narrowed the list to 10 stakeholders based on (i) their connection to the relevant policies and (ii) their expertise on the subject matter, as determined by their position, responsibilities, published information, and feedback from peers. They represented the following stakeholder groups: academia ($n = 1$); national government ($n = 3$); regional government ($n = 2$); farmers' interests ($n = 2$); and public interests ($n = 2$) [21]. We developed a protocol (Supplementary S3) for semi-structured interviews with these stakeholders to collect their perceptions about the Swiss PG policy mix and about the drivers of such performance, as the basis for our sentiment analysis (Section 2.1). We conducted the interviews between 22 May 2019 and 23 July 2019. All but one interviewee agreed to the use of audio recordings. A representative of the regional government sent their answers in written form [21].

3. Results

3.1. Relevant PG Policies and Policy Instruments

As shown in Figure 2, we identified five national level policies aiming to protect or benefit Swiss PGs. These policies generally align with the provisions of art. 104 of the Swiss Constitution, because they recognize agriculture multifunctionality by pursuing one or more of the following objectives: (i) security of the population's supply of quality food; (ii) decentralized occupation and use of the territory; (iii) conservation of natural resources; (iv) maintenance of the rural landscape [21].

Policy	SR number [†]	Policy Instrument
Federal Act on Agriculture (AG)	910.1	Additional payment for non-use of silage
		Animal-friendly methods of production
		Biodiversity subsidies (quality/corridors)
		Cheese processing aid
		Difficult farming/hilly areas
		Difficult farming/steep slopes
		Grassland-based milk/meat programme
		Open landscape contribution
		Proof of Ecological Performance
		Quality of the landscape
		Use of alpine pastures
		Use/maintenance of summer pastures
Federal Act on the Reduction of CO ₂ Emissions (CO ₂)	641.71	Climate change adaptation strategy – Livestock farming
Federal Act on Forest (FOR)	921.0	Compensation for deforestation
Federal Act on Protection of Nature and Cultural Heritage (NAT)	451	Mires and Mire Landscapes of Outstanding Beauty and National Importance
Spatial Planning Act (SPA)	700	Structure Plans & Land Use Plans

[†] Swiss law number as per the Systematic Registry (SR) of the Official Compilation of Federal Legislation.

Figure 2. Swiss policies and policy instruments governing PG management (own illustration based on the PAT, cf. 24). Note: this figure provides a visual map of the Swiss policy mix related to PGs. Swiss policy instruments related to PGs are assigned an abbreviation and a color scheme. The color scheme is as follows: spatial planning policy instruments are highlighted in yellow, wetland-related policy instruments are highlighted in blue, forest-related policy instruments are highlighted in brown, climate change-policy instruments are highlighted in red, and agriculture-related policy instruments are highlighted in light green (direct payments) or dark green (market support).

Within the abovementioned policies, we identified 16 policy instruments influencing PG management, which included 3 regulatory instruments, 11 incentive instruments, and 2 informational instruments. Most of these instruments (twelve in total) are deployed via

the Federal Act on Agriculture, as illustrated in Figure 2, and mainly take the form of direct payments or market support measures.

Although non-exhaustive, as explained (in Section 2.3), this list was validated by our Blue-Ribbon Panel as representative of the policy instruments that contribute the most to sustainable PG management in the country. It should be noted that other instruments have been put in place to pursue complementary policy objectives. For example, as part of the Swiss biodiversity strategy, in 2010, the Federal Council passed a new ordinance for the protection and conservation of dry meadows and pastures of national importance (Ordinance of 13 January 2010 on the Protection of Dry Meadows and Pastures of National Importance (Dry Grassland Ordinance), SR 451.37).

3.2. Propagation Pathways

Our analysis shows that the majority of Swiss policy instruments aim to promote sustainable PG management by employing measures focused on the fundamental make-up and structure of the landscape, that is, on grasslands within farmlands, or as part of the mosaic of land uses in the area [21]. In other words, they operate at the very top of the cascade (see propagation pathway no. 1 in Figure 3). This is where the three regulatory instruments can be found. They target land managers and/or landowners, more generally.

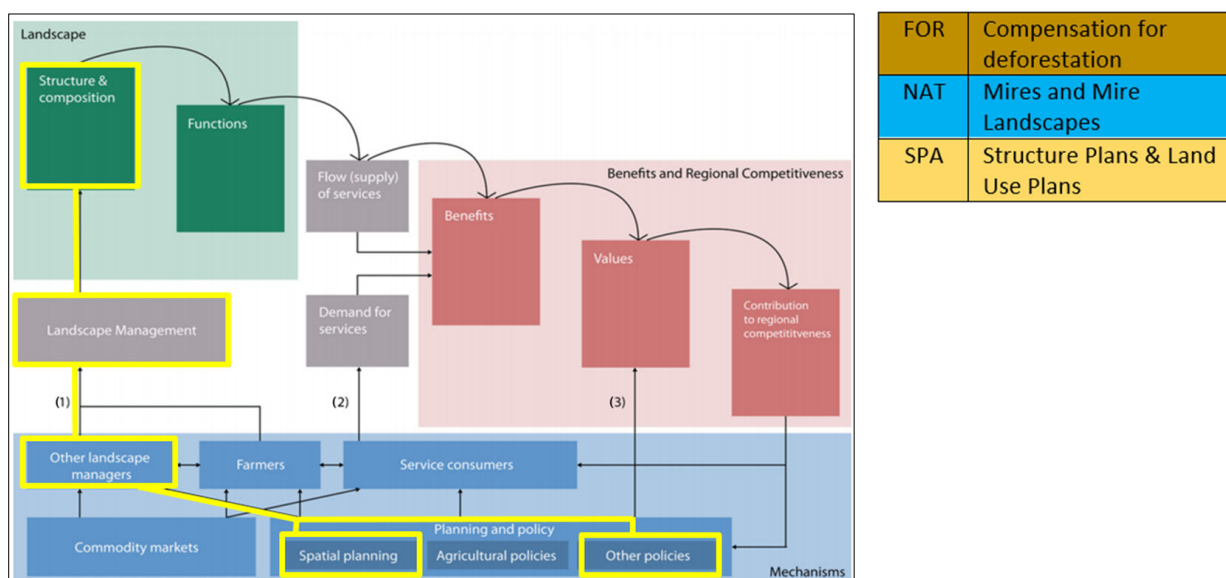


Figure 3. Propagation pathway followed by regulatory policy instruments (SPA, NAT, FOR). Legend: FOR = Federal Act on Forests, NAT = Federal Act on Protection of Nature and Cultural Heritage, SPA = Spatial Planning Act (re. Figure 1). Color scheme of policy instruments as in Figure 1. Propagation pathway is highlighted in yellow. Source: adapted from [5,6,21].

Six policy instruments introduced by the Federal Act on Agriculture target farmers, such as those operating Alpine pastures or under difficult farming conditions in mountain areas [21]. This approach is pursued mainly via incentive measures (DPs), but it follows essentially the same propagation pathway as the abovementioned regulatory measures, as illustrated in Figure 4.

The rest of the instruments address a lower level of the cascade, namely where agricultural activity interferes with the capacity of PG ecosystems to deliver other ES than those required for agricultural production [21]. Since these policy instruments are established by the Federal Act on Agriculture, they target farmers in terms of enabling them to adopt or maintain agricultural practices to generate beneficial effects from grassland ecosystems, their functions and/or services [21]. These instruments involve incentives through subsidies for the e.g., type of milk used in cheese production and for the non-use

of silage or payments for ecological performance. They follow propagation pathway no. 2, as illustrated in Figure 5, with the aim to influence the corresponding flow of ESs [21].

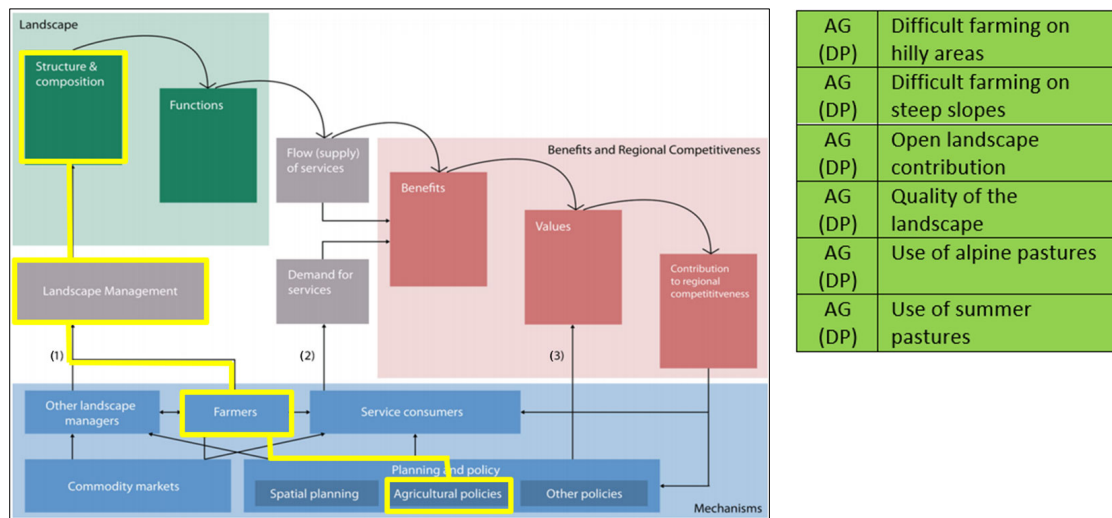


Figure 4. Propagation pathway followed by 6 policy instruments (direct payments) of the Federal Act on Agriculture (AG). Legend: AG = Federal Act on Agriculture, DP = direct payment (re. Figure 2). Color scheme of policy instruments as in Figure 2. Propagation pathway is highlighted in yellow. Source: adapted from [5,6,21].

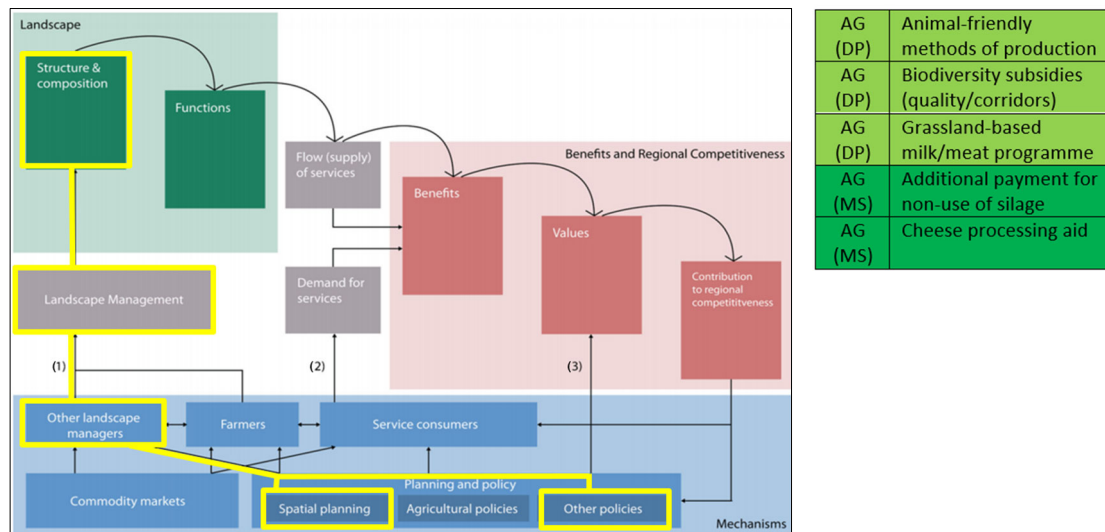


Figure 5. Propagation pathway of 5 other policy instruments of the Swiss Agricultural Policy (AG). Legend: AG = Federal Act on Agriculture, DP = direct payment, MS = market support (re. Figure 2). Color scheme of policy instruments as in Figure 2. Propagation pathway is highlighted in yellow. Source: adapted from [5,6,21].

We identify a gap in demand-side policies (in the policy mix of interventions targeting Swiss PGs [21]). Demand-side policies are those that would use propagation pathway no. 3, addressing the lowest level of the cascade [21]. On the demand side, there could be a wide range of instruments aiming at promoting, protecting or rewarding appropriate PG use or non-use. As such, they could complement supply-side policies for preserving or balancing a portfolio of values associated with sustainable PG management such as aesthetic, cultural, recreational, climate regulation and, biodiversity supporting values [21]. The interviews with stakeholders revealed that, in the absence of demand-side policies, several market-based solutions have been developed by industry actors in Switzerland over

the past few years, including two successful labels IP-Suisse (<https://www.ipsuisse.ch/>, accessed on 1 June 2024) and Bio Suisse (<https://www.bio-suisse.ch/de.html>, accessed on 1 June 2024), among others (WWF. Guida ai marchi alimentari. Available: <https://www.wwf.ch/it/guida-marchi-alimentari#guide-content>, accessed on 1 June 2024).

More detailed findings are summarized in Table 1. In the Swiss regulators' preference for supply-side measures over demand-side ones, farmers are predominantly the main targets of intervention (76%). Achieving sustainable PG objectives largely depends on the use of incentive instruments (75% of all instruments deployed), which promote resource management actions at the level of landscape structure or functions (53%) or influencing the delivery of specific ESs (47%).

Table 1. Targets, instruments, and delivery mechanisms of Swiss PG policies (own illustration based on the PAT).

Policy/Instrument	Target			Instrument Type			Propagation Pathway		
	C	F	L	Regulatory	Incentive	Information	(1)	(2)	(3)
Structure plans and land use plans (SR 700)	1	1		1			1		
Mires and mire landscapes (SR 451)	1	1		1			1	1	
Compensation for deforestation (SR 921)	1	1		1			1		
Climate change adaptation strategy—livestock farming (SR 641.71)	1					1	1	1	
Market support—payment for milk in cheese making (SR 910.1)	1				1				1
Market support—payment for non-use of silage (SR 910.1)	1				1				1
Direct payments—proof of ecological performance (SR 910.1)	1				1				1
Direct payments—open landscape contribution (SR 910.1)	1	1			1		1		
Direct payments—difficult farming/hilly areas (SR 910.1)	1				1		1		
Direct payments—difficult farming/steep slopes (SR 910.1)	1				1		1		
Direct payments—use of alpine pastures (SR 910.1)	1				1		1		
Direct payments—use/maintenance of summer pastures (SR 910.1)	1				1		1		
Direct payments—biodiversity subsidies (quality/corridors) (SR 910.1)	1				1				1
Direct payments—quality of the landscape (SR 910.1)	1	1			1		1	1	
Direct payments—grassland-based milk/meat programme (SR 910.1)	1				1				1
Direct payments—animal-friendly methods of production (SR 910.1)	1				1				1
Totals:	0	16	5	3	12	1	10	9	0
share (%)	0	76%	24%	19%	75%	6%	53%	47%	0

Note: Target categories: C = consumers, F = farmers, L = landscape managers/landowners. Propagation pathways: (1) via landscape management, (2) via demand for ESs, (3) via final beneficiaries.

3.3. Policy Effectiveness

From the combined analysis of stakeholder sentiments based on both the written statements from the grey literature (impact claims) and interview results (perceptions), we found that the majority of governmental stakeholders tended to have an overall positive opinion about the effectiveness of the Swiss PG policy mix, while most NGOs had a rather negative opinion. Interestingly, representatives from farmer organizations and academia expressed more nuanced opinions, and in general they did not express clear-cut negative views about policy effectiveness.

In relation to the five determinants of policy effectiveness that this study focussed on, the results of our analysis can be summarized as follows:

Relevance: the stakeholders find the identified policy-mix to be generally relevant for PG sustainability [21]. However, they also consider several other policies to have negative impacts and put pressure on PGs. Some stakeholders argue that Switzerland needs a policy specifically for grasslands, as they cover 60–70% of the country, with PGs constituting 28% of the land [21].

Legitimacy: Most stakeholders recognize that effective PG management necessitates policies that balance production and conservation goals. Some ES offered by PGs are understood and appreciated by the Swiss population, such as attractive open landscapes, biodiversity habitats, and regulating services like water purification. However, some stakeholders believe that the consensus-building process surrounding specific policy instruments, such as direct payments, along with significant lobbying from the agricultural sector, has resulted in a weakening of the original policy objectives. [21].

Democracy: The consultation and participation process in Swiss policymaking typically instils a high degree of institutional trust in many stakeholders [26]. However, stakeholders also note that this process may give certain lobbying groups a stronger influence on policymaking than others [21]. The interviewees note that initiatives aimed at changing this or reducing the influence of such entrenched interests are unlikely to succeed [21]. For example, the recent initiative “For clean drinking water and healthy food” submitted to popular vote in June 2021, brought these aspects on the policy agenda and fired a political debate, but ultimately the public vote failed. **Efficiency:** There is no straight-forward evidence from the interviewees that Swiss support for the agriculture sector is efficient [21]. All stakeholders noted that the Swiss policy system is very expensive, where public spending on agriculture is well above EU average. Some acknowledge that the system permits a certain level of free riding among some farmers, who opt out of adopting the most responsible farming practices in favor of maximizing direct payments or subsidies [21]. In addition, policy evaluations by the Swiss federal government [27] put the added value of some incentive payments such as biodiversity compensations into question, as their effectiveness is unclear.

Impact: The impact of PG policies is comparatively more favorable regarding impacts that are more easy to quantify, such as the spatial extent of PGs than it is for impacts that are more difficult to quantify, such as the degree of agricultural intensification and biodiversity conservation, which requires more nuanced assessments of e.g., pesticide use or species’ decline [21]. The abovementioned evaluation [27] found that none of the 13 environmental goals for agriculture established in 2008 by the Federal Council have been achieved, and it is unlikely that any of these issues will be addressed in the current agricultural policy cycle (2022–2025) [21]. Against this backdrop, several stakeholders called for a more dedicated PG policy and a more comprehensive range of policy instruments for promoting sustainable PG management, particularly in terms of quality, via the engagement of a broader set of stakeholders.

3.3.1. Impact Claims

Through our review of the grey literature we found that, statements published statements made by policy-making authorities often reflect their respective sectoral views, sometimes revealing a degree of self-complacency and political bias. In contrast, indepen-

dent evaluations, on the other hand, provide a more nuanced picture. Evidence-based evaluations, in particular, show that some environmental quality objectives have not been reached, indicating lack of effectiveness. The main criticism refers to the agricultural policy (N surplus, excessive number of animals), forest policy (forest land conversion, limited multifunctional use of forests), environmental conservation policy (poor state and declining quality of marshes, bogs and low swamps), and spatial planning in general, which is regarded as (unsustainable overall) (Supplementary S4). Positive impacts were acknowledged by multiple independent sources in the following areas, suggesting satisfactory effectiveness of the corresponding policies:

- Spatial planning: quality of air, water, built environment, and infrastructure;
- Forest services: protective function, biodiversity protection, and conservation;
- Animal welfare: regular outdoor program, livestock housing, and milk for cheese.

The evolution of public expenditure for direct payments to farmers suggests that public incentives experience a rapid uptake (subsidies quickly reach plateau levels, indicating that they attract a relatively stable number of farmers) but seem to have limited effectiveness (in terms of attracting more farmers) over time. This is mostly ascribed to the following reasons:

- Quality targets are too low (e.g., biodiversity subsidies, grassland-based milk incentives);
- Indicators that trigger payments are too easily achievable without major efforts or change (e.g., proof of environmental performance, quality of landscape);
- Administrative burden is too high for smaller farmers (e.g., those operating on summer pastures, alpine pastures, on steep slopes);
- Subsidies are not enough to offset market inertia in relation to maintenance of unsustainable practices (e.g., silage, open landscape, quality of landscape);
- Lack of awareness and training to farmers about ESs and benefits arising from the maintenance of farm constructs such as tree, hedges, and dry-stone walls [24].

3.3.2. Interview Results

The overall opinions expressed during the interviews are summarized in Table 2.

Table 2. Perceptions by stakeholder type, all policy effectiveness factors combined (own illustration based on interview results).

	Academia	Farmers	Government	Special Interests
Positive	40%	50%	52%	0
Negative	0	0	24%	80%
Nuanced	60%	50%	24%	20%

For more details, see Supplementary S5.

Two actor groups representing special interests were particularly critical about the effectiveness of Swiss policies to promote sustainable PG management: environmental NGOs were critical on all points, except for democracy. They perceived the current policy as leading to intensification and argued for more quality and improved biodiversity subsidies via more demanding regulations in relation to Proof of Environmental Performance (PEP). Yet, these special interest actors were sceptical about the future, seeing the agricultural lobby as too dominant.

One representative of farmers' interests expressed a positive opinion across the board, signalling an overall satisfaction with the current system of incentives and direct payments for ecological performance. Another representative of this stakeholder group, on the other hand, provided a more nuanced opinion across the five policy effectiveness dimensions, mainly because of concerns about blended policy goals balancing agricultural production with biodiversity promotion.

The five governmental respondents expressed divergent views about policy effectiveness depending on the sectors they represented. For instance, a representative from

central government working in the agricultural sector perceived the Swiss PG policy as effective across the five dimensions of analysis, while another one mainly concerned with environmental issues perceived the policy as ineffective throughout. Criticism focuses in particular on the direct payment scheme, which has arguably hampered the achievement of the 13 environmental quality goals of agriculture jointly established by the Federal Offices for Agriculture (FOAG) and the Federal Office for the Environment (FOEN) upon request by the Federal Council in 2008. According to that respondent, there is a lack of regulatory instruments, such as sanctions for non-compliance, as well as a lack of more stringent impact assessments regarding biodiversity and livestock density. The same stakeholder added that “politically we have no chance today”, lamenting the fact that the farmer lobby is too strong and has greater influence in parliament compared to other interest groups. Both governmental and non-governmental organizations pursuing environmental objectives noted that despite the ambitious environmental agenda behind the proposed Swiss Agricultural Policy reform (also known as AP22+) (the Federal Council’s Dispatch on the development of agricultural policy after 2022 (AP22+) was adopted on 12 February 2020 (source: FOAG). However, the legislative process was suspended in 2021 and resumed in March 2023), no solution is in sight to reduce livestock density, i.e., one of the main drivers of excessive nitrogen surplus in the country.

4. Discussion

Our findings indicate that the dominant propagation pathway to promote sustainable PG management in Switzerland is to target farmers with financial incentives (direct payments) to manage their landscape in accordance with a set of standards. The emphasis should be on landscape structure and tangible benefits, rather than on creating or preserving ecosystem value. While corroborating earlier evidence of this ‘greening’ approach followed by the Swiss government [28], our findings also reveal other noteworthy characteristics.

As shown in our results on the propagation pathways in Section 3.2, we find significant policy gaps, particularly in terms of lack of demand-side policies and awareness-raising instruments that could help establish a more conducive environment for a broader acceptance of measures required to achieve better ecological outcomes. Indeed, despite considerable evidence that environmental policy objectives continue to be far from reached, the Swiss legislative and regulatory process seems to have failed to deliver major changes. Nonetheless, the most recent policy developments in 2022 are attempting to tackle some of the policy gaps, as the Federal Council calls for agricultural policy that puts more emphasis on consumers than is currently the case (<https://www.admin.ch/gov/de/start/dokumentation/medienmitteilungen.msg-id-89439.html> (accessed 19 July 2022)).

Despite the policy gaps and negative impacts on ecological quality, we also found that most of the interviewed stakeholders see Swiss grassland policy as generally effective overall, largely because it tends to be perceived as democratic. The Swiss political system mandates a collaborative and iterative approach to policymaking. Initially, an expert group within the federal administration drafts a proposal for national legislation, which is then shared with various federal departments for internal consultation. Following this, the government conducts a public consultation, allowing citizens, interest groups, political parties, and cantonal authorities to express their views. For the draft to be enacted as federal law, it must receive approval from a relative majority in both chambers of parliament. Finally, the process incorporates direct democracy through an optional national referendum, which can contest the newly proposed legislation [21]. The flipside of the high democracy might be a lack of efficiency [9]. Indeed, many stakeholders expressed concern about the lack of efficiency of the Swiss grassland policy, particularly in terms of high public spending. Moreover, despite the unique direct democratic processes in Switzerland, there is still leeway for the Federal Council to circumvent existing policies through executive orders and rulings (that do not go through the legislative process) “in order to counter existing or imminent threats of serious disruption to public order or internal or external security” (Art.

185(3) of the Swiss Constitution) (See <https://www.fedlex.admin.ch/eli/cc/1999/404/en> (accessed 9 September 2024)).

On the one hand, we found that a majority of the stakeholders interviewed expressed the view that Swiss grassland policy is generally effective, and these actors were in favor of financial incentives (“carrots”) and market mechanisms rather than tighter regulations. These actors emphasized food security and the value of the Swiss open landscape with abundant pastures. Conversely, a minority of our informants expressed concern with the current policy, wanting more stringent regulations (“sticks”) and prioritizing environmental quality and diversity. The different positions expressed by our small panel of experts illustrate that a broad diversity of opinions may coexist across and within stakeholder groups.

On the other hand, demand-side policies and ‘softer’ policy instruments, such as information and awareness-raising material, are virtually lacking from the Swiss policy mix. Information instruments typically support other ‘harder’ instruments [21]. They play an important role in shaping public discourse and the development of opinions, as the exchange of information and knowledge often serves as the foundation for decision-making processes [29,30]. The underlying assumption is that environmentally responsible behaviour is encouraged if citizens are informed. A key instrument here is labelling where standardized information about companies is transferred to society. At the same time, the credibility deficit surrounding most sustainability labels and standards to-date demand a new generation of decision-support tools and assurance mechanisms to enable the sustainability transition. In addition, despite protracted evidence that environmental policy objectives continue to be far from reached, the Swiss legislative and regulatory process seems to fail to deliver major changes, even when supported by popular initiative. This can be explained, in part, by our finding that most of the interviewed stakeholders consider Swiss grassland policy as generally effective, mainly because it is perceived as democratic.

Our approach has already been applied to other biogeographical regions and socio-economic contexts in the frame of the EU-funded SUPER-G project [21]. In [21] we found that, overall, grassland policies across Europe (including the Swiss case) are viewed positively, with government entities expressing the highest levels of approval, while special interest groups are less favorable. The detailed case studies of individual countries highlight both commonalities and differences among nations and stakeholder groups, offering insights into the specific issues, challenges, and obstacles that impact the effectiveness of these policies [21]. While both Switzerland and the EU aim to protect and manage permanent grassland, Switzerland’s approach is more integrated into its unique geographical and cultural context, emphasizing the balance between agriculture and environmental stewardship. The EU’s policy, while also environmentally focused, operates within a broader framework of agricultural policy across diverse Member States, with a strong emphasis on meeting EU-wide environmental targets. Both policies reflect a commitment to sustainability but are tailored to their respective agricultural landscapes and policy frameworks.

5. Conclusions

This article has addressed propagation pathways to generate policy effectiveness in terms of PGs’ delivery of ecosystem services to ultimately enable sustainable PG management. We first mapped the extant body of relevant policies influencing PG management at the national level in Switzerland and then complemented this with a review of the findings of existing evaluations. To validate the results of the latter top-down assessment of the identified written statements about policy impacts, we interviewed key policy experts representing diverse stakeholder groups, including representatives of both agricultural and non-agricultural interests.

Our key findings are as follows. We found that the majority of Swiss policy instruments aim to promote sustainable PG management by employing measures targeting the very structure and composition of the landscape (i.e., grasslands themselves within farmlands, or as part of the mosaic of land uses in the area). We also found poor policy

outcomes in relation to a number of environmental quality objectives. In addition, different stakeholder groups had varying views on the perceived capacity of the current policy mix to deliver on the announced sustainability goals and targets. Another key finding of the review of policy documents (n = 85) and expert interviews (n = 10) related to the challenges, opportunities, and trade-offs faced in the transition towards more sustainable PG ecosystems in Switzerland. These findings can, in part, be explained by our additional findings that there seem to be significant gaps in the types of instruments employed, particularly in terms of demand-side policies and awareness-raising instruments. The latter could help establish a more conducive environment for a broader acceptance of measures required to achieve better ecological outcomes. In contrast, we found that most of the interviewed stakeholders considered Swiss grassland policy as generally effective, mainly because it was perceived as democratic.

Our findings contribute to the ongoing debate about the priorities of the Swiss agricultural policy (e.g., beyond AP2022+) and the calibration of policy measures aiming to promote sustainable development. They can inform how to target mechanisms that can ensure achieving environmental quality objectives while remaining democratically legitimate, conserving natural resources, and rural value chains in areas such as clean energy, bioeconomy, circular economy and eco-tourism [11,21].

In addition to facilitating the calibration of future policy instruments, these findings can guide future research in addressing the limitations of this study. For example, more research surveying a larger group of stakeholders will be required to assess the potential of demand-side policies and the mechanisms through which such policies can find more support in the current Swiss institutional setup and governance landscape. Finally, gaining more knowledge about the factors that can drive the responsible behaviour of citizens, consumers, and producers will be important in the development of a more inclusive, systematic approach to the sustainability transition.

Supplementary Materials: The following supporting information can be downloaded at <https://www.mdpi.com/article/10.3390/agronomy14112599/s1>. Supplementary S1: Description of case study area; Supplementary S2: PAT template; Supplementary S3: Interview script; Supplementary S4: Analysis of impact claims of the Swiss PG policy mix—synoptic table; Supplementary S5: Stakeholder perceptions.

Author Contributions: Conceptualization, methodology, analysis, writing: S.Q. and E.L. Visualizations: S.Q. Conceptualization, methodology, analysis: E.H. and S.T. Conceptualization, methodology: L.F. and P.N.P. All authors have read and agreed to the published version of the manuscript.

Funding: The SUPER-G project (Grant Agreement No.: 774124) has received funding from the European Union Horizon 2020 Research and Innovation Program. The views and opinions expressed in this paper do not represent the official position of the European Commission and are entirely the responsibility of the authors. The authors would like to thank the reviewers for their constructive comments and feedback on previous drafts of the paper.

Data Availability Statement: The original contributions presented in the study are included in the article/Supplementary Materials. Further inquiries can be directed to the corresponding author.

Conflicts of Interest: The authors declare no conflicts of interest.

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