Faster than politics – Policy forecasting ahead of government formation?

Detlef F. Sprinz [a,b,*], Max Krott [c]

[a] *Potsdam Institute for Climate Impact Research, Potsdam, Germany*
[b] *University of Potsdam, Potsdam, Germany*
[c] *Department of Forest and Nature Conservation Policy, Georg-August University Göttingen, Germany*

ARTICLE INFO

ABSTRACT

Will a new government potentially formed in 2025 pursue different forest policies as compared to its predecessor? Using the German government formation in spring 2025 as an example, we employ a negotiations prediction model to forecast specific forest policies ahead of their coalition agreement. As compared to predictions about the policies of the immediately preceding government as of 2022, the scope for remuneration of forest carbon will be very mildly increased, the remuneration for forests adapted to climate change somewhat increased, and the predicted remuneration for forest conservation substantially reduced. We demonstrate that short-term policy predictions based on numeric negotiations models are feasible and outline the implications for the forest sector and science-based policy advice.

1. The usefulness of rapid policy predictions

It is often observed that scientific expertise takes too much time in view of the more immediate needs of policy makers. Legions of advisory councils can attest to it, including on forest policy (Böcher and Krott, 2016; Hetemäki, 2019; Science Advice for Policy by European Academies (SAPEA), 2019). Our article wishes to demonstrate how an applied negotiation model can contribute to close the time gap in terms of providing advice expeditiously on specific policy issues. Both natural and social science advice often relies on projects of multiple years of duration to generate new knowledge, corroborate existing findings, or reject received wisdom. The strength of forest policy research is to focus on forest issues and provide specific scientific information to forest policy-making as well as to suggest policy options. The issue of forest ecosystem services and payments for them is well researched. Sound scientific information about innovative payment instruments are available, and strategies of forest as well as nature conservation actors are well analysed (Beland Lindahl et al., 2023; Forest Europe, 2019; Juerges et al., 2020; Loft et al., 2022). Regrettably, the scientific information produced by this kind of research will likely arrive too late for political actors if they have to make expeditious decisions when new windows of opportunity arise. Building on the foundations of Sprinz et al. (2024), we demonstrate the potential usefulness of a political negotiation model for forecasting government payments for forest ecosystem services *during* a government formation process.

Re-electing or electing new governments is standard democratic practise. Given the negotiations of a potential federal German government in April 2025 and the conclusion of the coalition agreement by early May 2025, we undertook a policy forecast for the likely federal government coalition regarding payments for forest ecosystem services in the first half of April 2025; we compare these forecasts with those from 2022 for the outgoing government. Negotiations on the coalition agreement are a classical window of opportunity to set the longer term agenda. We wish to predict whether and how a government coalition under formation will agree with or differentiate itself from its predecessor on an important aspect of forest policy. We will focus on the specific case of payments for forest ecosystem services (FES). For decades, basic scientific information about FES has been available, but the specific scientific information how the window of opportunities under conditions of conflicting interests influences policy formation remains missing. We aim to rectify this situation by offering predictions undertaken in April 2025 of the likely policy of an emerging federal coalition government - whose coalition program had been completed only in May 2025. The government coalition agreement is likely to guide forest policies for the duration of the legislative period.

Building on Sprinz et al. (2024), we briefly summarize the negotiation model used for our predictions undertaken in 2022 and describe the changes made to the input data to arrive at predictions for the federal government coalition under formation in the first half of 2025. Subsequently, we offer our predictions for the agenda of the new German

---

* Corresponding author at: PIK – Potsdam Institute for Climate Impact Research, P.O. Box 60 12 03, 14412 Potsdam, Germany.
E-mail address: detlef.sprinz@pik-potsdam.de (D.F. Sprinz).

federal government for payments for FES as well as conclude with the broader implications for employing negotiation models to support policymakers.

2. The model: the Predictioneer's Game

In Sprinz et al. (2024), we summarized the background on the Predictioneer's Game as well as the data employed for forecasting German forest policy in the fall of 2022 for the *then current* government configuration.

The Predictioneer's Game is a rationalist, non-cooperative game-theoretic model that computes the bilateral interactions among all stakeholders round-by-round, based on their position, the salience of the issue under investigation relative to other issues, the actor's flexibility in the negotiations, formal veto rights, and the potential influence that the actors bring to the negotiations. Each input is actor-specific, yet inter-comparable by way of common coding rules. The stakeholders included in the negotiations modelled comprise forest owners, the relevant trade union, political parties, environmental NGOs, relevant ministries, and the EU. In this commentary, we will particularly focus on systematic variation of the potential influence of *select* actors introduced by the results of the German federal Parliamentary elections in February 2025 as compared to the governmental configuration of October 2022.

The particular coding of the potential influence rests on an adaption of Max Weber's sources of power (Weber, 2000) as augmented by Krott et al. (2014) and further expanded in Sprinz et al. (2024). Summarized briefly, potential influence is derived from the sum of

- coercion,
- material & immaterial (dis-)incentives,
- loyal information, and
- scientific information.

Each of these dimensions were coded in Sprinz et al. (2024) based on a study by Schaefers (2022).

Given the likely change in government configuration as a result of the outcome of the February 2025 federal Parliamentary elections to the German Bundestag, we made minimalist adjustments to the components of potential influence of select actors to generate novel insights - while otherwise continuing to use 2022 data for the potential influence of the remaining actors. For all other input variables (except potential EU veto, see below), we employ 2022 data as we had no reasons to believe in April 2025 that these entries would fundamentally change as compared to October 2022 (Sprinz et al., 2024).

3. The impact of the 2025 German federal Parliament elections

This project commenced shortly after the German federal Parliament elections on 23 February 2025 and was completed *before* the new government was formed and sworn into office on 06 May 2025. The outcome of the elections made it likely that the former traffic light coalition (comprising Social Democrats, the Greens, and Liberals) might be replaced by a coalition of the Christian Democrats (CDU/CSU) with the Social Democratic Party (SPD). The Liberal Party did not re-enter Parliament, and party resolutions by the CDU/CSU forbid formal coalitions at the federal level with the far right or far left political parties. In particular, the Green Party was not needed for the formation of a majoritarian government. This left exactly one configuration for a minimal winning coalition, comprising the CDU/CSU and the SPD. In order to make useful predictions on the likely forest policy of a government under formation, we systematically changed the component sub-weights of potential influence of relevant actors as described below. All predictions were executed and logged on 11 April 2025, i.e., one day after the publication of the coalition agreement. Only the data on potential influence were partially changed as compared to the fall of 2022 - reflecting the new weights in Parliament (see below). At the time of computing the results, it remained unclear whether the coalition in formation will be approved by Parliament, who the federal ministers will be, and how the ministries will be (re-)shaped or transformed. We maintained the ministerial setup as of October 2022 as we had no knowledge at the time whether and how the various ministries will be composed.

3.1. Changes to data inputs

In a first step, we removed the Liberal Party as a stakeholder as it did not re-enter Parliament. Second, building on the coding explicated in detail in Sprinz et al. (2024), we accounted for the power of political parties that form a government by scoring *each* of them "2" for "coercion" and "material (dis-)incentives." This is justified since they can marshal relevant Parliamentary majorities and thereby dominate the opposition parties on coercion and decide the federal budget, incl. payments for climate-adapted forests. This upgrading implies changes (from 2022 data) in both components of the potential influence score for the CDU/CSU from 0.1 (when it was an opposition party in 2022) to 2 and a commensurate downgrading of the Green Party (as they are expected to switch from the government to the opposition bench in 2025) from 2 to 0.1. The scores for the Social Democratic Party (SPD) remain unchanged as they formed a core part of the previous as well as the expected new government. As a result of the reweighted potential influence, the SPD (as the new junior partner rather than the chancellor's party in the previous government) is weaker than the CDU/CSU but substantially stronger than the parties on the opposition benches. Third, as environmental NGOs had direct access to the Green ministries while the Green Party was a government party in charge of the climate, environment, as well as agriculture/forestry ministries, we downgraded the loyal information they held in 2022 from "1" to "0.1" for three environmental NGOs. This is warranted by the expectation that direct access for the environmental NGOs will be much curtailed in a CDU/CSU government with the SPD (see Table 1) (Böcher and Töller, 2012).

Table 1
Changes in data inputs: potential influence.

Components of potential influence	Original values (Sprinz et al. (2024))		New values
Coercion	CDU/CSU: 0.1		CDU/CSU: 2.0
	Greens: 2.0		Greens: 0.1
Material & immaterial (dis-) incentives	CDU/CSU: 0.1		CDU/CSU: 2.0
	Greens: 2.0		Greens: 0.1
Loyal information	BUND: 1.0		BUND: 0.1
	NABU: 1.0		NABU: 0.1
	Greenpeace: 1.0		Greenpeace: 0.1
Scientific information		no changes	

Source: If no change is indicated in Table 1, then the data in Sprinz et al. (2024) were retained.
Note: In Sprinz et al. (2024), we computed the results with potential veto rights for the EU. Since this veto option has been waived since 2023, our model runs for 2025 do not code the EU as a potential veto player.

In moving from our October 2022 input matrix to April 2025, we changed 7 values of the input matrix out of (18 stakeholders * 4 variables =) 72 values of remaining stakeholders (omitting the veto score for each stakeholder, see below) – plus four values by omitting the Liberal Party which did not re-enter Parliament. As the European Commission has cleared the German forest ecosystem payment system since calendar year 2023 for payments in this program, no actor was given formal veto rights. All other variable scores (position, flexibility, salience) were retained from Sprinz et al. (2024). The changes to the potential influence scores was applied to all three issues under investigation.

3.2. Forecasting climate-adapted forest management for 2025+

The case for our forecasts are payments by the *federal* government of Germany for forest ecosystem services – which are of ecological and societal value. We focus on three forest ecosystem services which are key issues in German forest policy: (1) storage of CO_2; (2) biodiversity conservation and (3) climate-resilient forest management (Sprinz et al., 2024). We predict the degree of support of the government guideline for each of these three issues in the future – thereby allowing for a comparison between the previous (Sprinz et al., 2024) and the expected new government. The predictions apply, in particular, to the funding programs of the federal government in Germany and do not cover the funding programs which individual German states may develop in the future.

Employing the Predictioneer's Game with these revised input matrices yields the following results (in comparison to Sprinz et al., 2024).

On the first issue, namely the scope of financially rewarding the carbon sink function of forests, the revised predictions end the negotiations at 48.6 rather than 46.6 on a 0–100 scale, i.e., a mild broadening of the quantities for forest carbon to be remunerated as compared to 2022. Substantively, this is a change of less than 5 percentage points (see Table 2).

Second, with respect to the payments for nature protection functions of forests, we forecast a sharp downturn from 47.0 to 33.0 on a 0–100 scale. This predicted change represents a downgrade of ca. 30 percentage points based on 2022 predictions, yet is very much in line with current regulations as of Oct. 2022/May 2023. This suggests that the new government barely has an interest in a change of the status quo on this issue.

Third, renumerating the climate resilience of forests as explicated in Sprinz et al. (2024) is expected to increase from 20.6 to 22.6 (on a 0–50 scale) when comparing our 2022 predictions with our new predictions. Given these results, we expect that this aspect will gain increased weight in forthcoming regulations by the new German federal government.

Overall, we witness substantial similarity of results on the expected payments for forest carbon (issue 1) as compared to 2022, moderate upward changes on the payments for climate resilience of forests (issue 3), as well as substantial downward changes regarding the payments for nature conservation aspects of forests (issue 2).

4. Implications for the forest sector

In this section, we concentrate on the relevance of the predictions for forest policymaking while the following section attests to the advantages of political modelling from an applied methods perspective.

On payments for forest carbon (issue 1), we witness unfulfilled scope for payment forest carbon with both the 2022 as well as with the new input data: substantial scope for financial payments for forest carbon is predicted. Like in 2022, it does not look very probable in the short run that such a program will be realized despite the carbon sink goals enshrined in Article 3a of the German Climate Law. The proposal by the EU Commission for the 2040 net emission goals for 2040 (European Commission, 2025) makes it likely that forest carbon sinks will play an important part for the EU on its way to greenhouse gas emission neutrality by 2050. It is worth noting that the EU Green Deal and related legislation mentions expectations about the contribution of forest carbon to net emissions. The EU carbon removal and carbon farming regulation focuses solely on payments within voluntary markets. Consequently, it would be logical that a national government does not concern itself with this issue. However, as the member countries are in the lead on forests, we suggest that our prediction of payment for forest carbon remain plausible as long as forests contribute annual net sink increments.

On the payment for the nature conservation functions of forests (issue 2), the new model predictions are essentially congruent with the actual 2022/2023 payment system in place. Put differently, in 2022, Green ambitions were successful in driving results to new heights at the time, the times have changed, and the new realities lead to a sharp difference as compared to the predictions based on 2022 data. We should broadly expect the status quo to prevail on the payments for the nature conservation functions in Germany.

Finally, on the management for the climate resilience of forests (issue 3), our predictions point to a moderate upgrade in the payments. As this third issue is of core interest to forest owners of managed forests, a moderate predicted upgrade for payments may be in line with the 2025 coalition contract (CDU, CSU, and SPD, 2025), yet the latter is substantially more imprecise compared to our rather precise predictions. Forest owners may be rightly on track to expect that the state and its taxpayers further enable climate-adapted forestry under climate change.

The prediction model indicates clear expectations about policy directions during the remaining legislative period. Since our changes to the input matrix are moderate as compared to October 2022 data, we do not take into account potential changes in the salience of the three issues due to external circumstances (e.g., military defence) or the impact of overall budget constraints on the positions of actors. Despite these limitations, the results of the prediction model indicate plausible directions for upcoming political decisions on payments for FES.

5. Implications on the use of policy forecasting models

In this article, we highlight four main findings on the use of policy forecasting models on the payments for forest ecosystem services, yet also more generally in the context of science-based forest policy support

Table 2
Comparison of predictions and actual policies.

	Status quo ante legislation	Guideline climate-adapted forests (2022/2023)	Sprinz et al. (2024): predictions in 2022	Novel predictions for 2025+
CO_2 Storage (Issue 1)	0 (Scale 0–100)	0 (Scale 0–100)	46.6 (Scale 0–100)	48.6 (Scale 0–100)
Biodiversity Conservation (Issue 2)	30 (Scale 0–100)	35 (Scale 0–100)	47.0 (Scale 0–100)	33.0 (Scale 0–100)
Climate Resilience (Issue 3)	12 (Scale 0–50)	15 (Scale 0–50)	20.6 (Scale 0–50)	22.6 (Scale 0–50)

Note: The scales and past findings are explained in detail in Sprinz et al. (2024).

(Lentsch and Weingart, 2011; Stevanov and Krott, 2021):

1. feasibility of forecasting on short notice,
2. complementarity of political modelling and natural science modelling,
3. assistance in investment decisions, and
4. precision of the predictions.

First, the derivation of novel results by forecasting under conditions of short lead times is entirely feasible. As long as the issues can be clearly delineated as well as the input variables be coded, policy forecasting models can deliver on short notice. Modelling political decisions enables us to ask structured "what if" questions: Which are the consequences of select changes to the configuration of the input matrix? This capability of computer experimentation has been long known in the natural sciences as well as economics. The political science profession has joined the field. Conversely, policy forecasting models enable the probing of policy designs and related negotiations, thereby elucidating the political feasibility space. While the data inputs in our examples are public knowledge, this is not necessarily always the case: Private actors may employ such modelling for their private benefits without informing the public. In an applied sense, computer experimentation also allows to learn from potential "errors" in the sense that particular changes induced into the model runs may lead to unwanted policy negotiation outcomes. In such cases, the advisor or academic may be able to advise on which roads to avoid.

Second, in forest modelling, the natural sciences and economics have, so far, been dominant (Blanco and Lo, 2023). Given the advent of political modelling, we can complement these efforts by way of asking whether recommended policy changes are politically feasible and potentially why.

Third, forests are long-term investment projects for the public and the private sectors. Investors of managed forests are likely to be interested how they can generate sufficient returns under government regulation. Policy forecasting models allow for short- to medium-term policy forecasting, and current experiments focus on the feasibility of predicting emerging political properties over the next decades. Policy forecasting can thus practically assist investment decisions as relevant to forests (and many other policy areas).

Finally, as the current coalition agreement (CDU, CSU, and SPD, 2025) shows, our predictions appear to find favour with the new German federal government's published policy preferences. While the coalition agreement is broad and provides only very general directions on forest policy, our predictions are nuanced and more easily falsifiable than political declaration are. This may, indeed, be the greatest scientific strength of policy forecasting models. A conclusive assessment of our novel predictions has to await the end of the current regular Parliamentary legislative period.

Our experience with a numerical negotiations model shows that policy forecasting models can make a valuable contribution to forest policy research. Policy forecasting is able to complement the contributions made by natural science and economic modelling of forests, and integration of all three would enhance our competence for science-based support of policymaking. Political decision-making models can be employed at local, regional, national, European, and global scales. And given data availability, such forecasts may be undertaken much faster than more slowly unfolding political processes.

CRediT authorship contribution statement

Declaration of competing interest

Acknowledgements

Data availability

Data will be made available on request.

References

Beland Lindahl, K., Söderberg, C., Lukina, N., Tebenkova, D., Pecurul, M., Pülzl, H., Sotirov, M., Widmark, C., 2023. Clash or concert in European forests? Integration and coherence of forest ecosystem service–related national policies. Land Use Policy 129, 106617. https://doi.org/10.1016/j.landusepol.2023.106617.

Blanco, J.A., Lo, Y.-H., 2023. Latest trends in modelling forest ecosystems: new approaches or just new methods? Curr. For. Rep. 9 (4), 219–229. https://doi.org/10.1007/s40725-023-00189-y.

Böcher, M., Krott, M., 2016. Science Makes the World Go Round: Successful Scientific Knowledge Transfer for the Environment. Springer. https://doi.org/10.1007/978-3-319-34079-1.

Böcher, M., Töller, A.E., 2012. Umweltpolitik in Deutschland - Eine politikfeldanalytische Einführung. Springer VS. https://doi.org/10.1007/978-3-531-19465-3.

CDU, CSU, & SPD, 2025. Verantwortung für Deutschland - Koalitionsvertrag zwischen CDU, CSU und SPD (21. Legislaturperiode). https://www.koalitionsvertrag2025.de/sites/www.koalitionsvertrag2025.de/files/koav_2025.pdf.

European Commission, 2025. Proposal for a Regulation of the European Parliament and of the Council Amending Regulation (EU) 2021/1119 Establishing the Framework for Achieving Climate Neutrality {SWD(2025) 524 Final}. European Commission, Brussels. Retrieved from. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52025PC0524.

Forest Europe, 2019. Valuation and Payments for Forest Ecosystem Services in the Pan-European Region. https://foresteurope.org/wp-content/uploads/2016/08/PES_Final_report.pdf.

Hetemäki, L., 2019. The role of science in forest policy–experiences by EFI. Forest Policy Econ. 105, 10–16. https://doi.org/10.1016/j.forpol.2019.05.014.

Juerges, N., Arts, B., Masiero, M., Başkent, E.Z., Borges, J.G., Brodrechtova, Y., Brukas, V., Canadas, M.J., Carvalho, P.O., Corradini, G., Corrigan, E., Felton, A., Hoogstra-Klein, M., Krott, M., van Laar, J., Lodin, I., Lundholm, A., Makrickienė, E., Marques, M., Pivoriūnas, N., 2020. Integrating ecosystem services in power analysis in forest governance: a comparison across nine European countries. Forest Policy Econ. 121, 102317. https://doi.org/10.1016/j.forpol.2020.102317.

Krott, M., Bader, A., Schusser, C., Devkota, R., Maryudi, A., Giessen, L., Aurenhammer, H., 2014. Actor-centred power: the driving force in decentralised community based forest governance. Forest Policy Econ. 49, 34–42. https://doi.org/10.1016/j.forpol.2013.04.012.

Lentsch, J., Weingart, P. (Eds.), 2011. The Politics of Scientific Advice: Institutional Design for Quality Assurance. Cambridge University Press. https://doi.org/10.1017/CBO9780511777141.

Loft, L., Schleyer, C., Klingler, M., Kister, J., Zoll, F., Stegmaier, P., Aukes, E., Sorge, S., Mann, C., 2022. The development of governance innovations for the sustainable provision of forest ecosystem services in Europe: a comparative analysis of four pilot innovation processes. Ecosyst. Serv. 58, 101481. https://doi.org/10.1016/j.ecoser.2022.101481.

Schaefers, T.V., 2022. Interessen und Macht wichtiger waldpolitischer Akteure in Deutschland als Grundlage der Modellierung der politischen Entscheidung über eine Honorierung von Waldökosystemleistungen - Fallstudie Deutschland [Unpublished Master Thesis]. Georg-August-University Göttingen, Faculty of Forest Sciences and Forest Ecology.

Science Advice for Policy by European Academies (SAPEA), 2019. Making Sense of Science for Policy Under Conditions of Complexity and Uncertainty (Evidence Review Report). https://zenodo.org/record/3349557/files/MASOS-ERR-online.pdf.

Sprinz, D.F., Schaefers, T.V., Lenk, F., Krott, M., 2024. Forecasting forest-related political decisions in a climate-constrained world – the remuneration of forest ecosystem services in Germany. Forest Policy Econ. 169, 103231. https://doi.org/10.1016/j.forpol.2024.103231.

Stevanov, M., Krott, M., 2021. Embedding scientific information into forestry praxis: explaining knowledge transfer in transdisciplinary projects by using German case. Forest Policy Econ. 129, 102508. https://doi.org/10.1016/j.forpol.2021.102508.

Weber, M., 2000. Basic Concepts in Sociology. Citadel Press.