

Kahl / Weller

Climate Change Litigation

A Handbook



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A Handbook

edited by

Wolfgang Kahl
Marc-Philippe Weller

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Foreword from the Editors

This handbook investigates important legal issues that emerge from the highly topical discourse on climate protection. Experts from all over the world share their knowledge on “Climate Change Litigation”, illuminating different legal perspectives: international law, European law, as well as national public and private law.

In addition, the present volume gives an overview of ongoing lawsuits and their relevant legal frameworks in different jurisdictions, including, inter alia, the United States, Canada, Australia, the UK, France, the Netherlands, Italy, Brazil, and Germany.

Climate change is one of the greatest societal challenges of our time. Its legal coverage is in the process of establishing itself as an independent branch of environmental and international law and will most likely become one of the major legal markets of the future.

Building upon this development, our handbook aims to pave the way for further legal research on climate change and upcoming legal proceedings in order to help protect our climate.

We would like to thank the Fritz Thyssen-Foundation for the generous co-funding of this handbook.

*Wolfgang Kahl and Marc-Philippe Weller
Heidelberg University*

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PART 6 CONCLUSIONS

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I. Introduction

Many scholars view the third decade of the 21st century as the decade in which 1 global climate protection must be decisively advanced, in order to limit global warming to at least 2°C, or better yet to 1.5°C, when compared to the pre-industrial level.¹ To do so, expert opinion holds that it is necessary to reduce global greenhouse gas emissions by at least 50 % by 2050 and by 80-90 % by 2100. Within the EU, the objective is to reduce greenhouse gas emissions by 40 % by 2030, compared to 1990.² By 2050, EU-wide greenhouse gas emission is supposed to be reduced by 80-95 %, compared to 1990.

In order to reach these reduction objectives and emerge from the “planetary state of 2 emergency”,³ fundamental and drastic changes are needed, in particular in the sectors of energy, industry, transport, construction, and agriculture. Therefore, climate protection – together with the protection of biodiversity⁴ (both objectives are closely linked) – is *the*

¹ Thus, the duty on the basis of the Paris Agreement from 12.12.2015, concluded in the framework of the United Nations Framework Convention on Climate Change (UNFCCC), which was ratified by 197 states (OJ EU L 282/5), on this Voigt, mn. 3. In detail on the Paris Agreement and the UN Climate Conference COP24 in Katowice Franzius/Kling, mns 1 et seq. Furthermore Clark, *Notre Dame Journal of International & Comparative Law* 8, 2018, 107 et seq.; Streck/v. Unger/Krämer, *JEEPL* 2019, 165 et seq.; Voland/Engel, *NVwZ* 2019, 1785 et seq.; Rajamani, *Journal of Environmental Law* 28, 2016, 337 et seq.; Franzius, *EurUP* 2017, 166 et seq.; Franzius, *ZUR* 2017, 515 et seq.; Klein/Carazo/Doelle/Bulmer/Higham, *The Paris Agreement on Climate Change*, 2017; Saurer, *NuR* 2019, 145 et seq., and on the concept of planetary limits that underlie the 2 and 1.5°C objectives Calliess, *ZUR* 2019, 385 et seq. A vivid discussion of humanity’s “soon-to-be-exhausted ‘carbon budget’” in Hofmann, *NVwZ* 2019, 1145.

² Meeting of the European Council (23./24.10.2014), Conclusions on Climate and Energy Policy Framework, *SN* 79/14. Currently, under its new President of the Commission *v. der Leyen*, the EU is working on advancing its climate change policy (“Green Deal”), although the concrete steps taken thus far remain too cautious, in the view of climate activists, cf Kafsack, in: *FAZ* from 4.3.2020, cited from: <https://www.faz.net/-iu4-9x5kg> (last consulted on 7.3.2020). Cf on the current climate protection goals at the international, European, and German level also the overview in German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit), *Klimaschutz in Zahlen*, 2018. Generally on the relationship of competition and convergence between European and global climate change policy Proelss, in: Gundel/Lange (ed.), *Europäisches Energierecht zwischen Klimaschutz und Binnenmarkt*, 2020, 1 (19 et seq.).

³ Cf on this *Der Spiegel* Nr. 50 v. 7.12.2019, 108 et seq.

⁴ According to the WWF, the earth is currently experiencing the greatest extinction of species since the extinction of the dinosaurs, and that only marks the beginning of this development, <https://www.spiegel.de/wissenschaft/natur/tierschutz-wwf-warnt-vor-groessten-artensterben-seit-verschwinden-der-dinosaurier-a-1302823.html> (last consulted on 7.3.2020).

global challenge in the Anthropocene,⁵ which can only be handled by the community of states in the political multi-level system, in other words, inter- and transnationally.⁶ But this must not prevent the individual states from beginning with model measures “on their own doorstep”, that is to say, locally, regionally, and nationally.⁷

- 3 Yet despite first successes in the battle against the temperature rise and with climate change adaptation,⁸ the political measures still clearly take too long and lack far too much ambition to bring about a fundamental political transformation⁹ of the economic and energy system. It will therefore still take decades before there are no greenhouse gas emissions anymore globally and climate change is stopped. Until then, climate change will cause much more damage. The median temperature in most land and ocean areas will continue to increase. There will be increased heat extremes in most populated regions as well as heavy precipitation. The probability of drought and precipitation deficits will increase as well.¹⁰ These (and other) climate changes have numerous negative effects in turn, so that, for instance, water resources will become scarce in some regions, more species will go extinct, ecosystems will change, certain regions will no longer be inhabitable or at least not cultivable, and not least, climate change will also lead to severe damage to health and increased mortality for humans.¹¹ Consequently, this is a key question of generational equality¹² and fair ecological distribution.¹³ At the same time, human dignity is at stake, since the economic and ecological subsistence level of people living in the future, as a prerequisite for their subject quality (autonomous self-development), is threatened.¹⁴
- 4 In light of this fact, a heated debate has emerged globally in legal scholarship on who is liable for the damages (jointly) caused by climate change and by what means, before which courts, and with what prospects of success such compensation claims, should they exist, could be asserted (“climate change litigation”).¹⁵ Since, as mentioned above,

⁵ On this Franzius, *EurUP* 2019, 498 et seq.; generally Kersten, *Das Anthropozän-Konzept*, 2014; Winter, *ZUR* 2017, 267 et seq.

⁶ Voigt, mn. 6. Cf also Fisher, *GLJ* 2020, 5 et seq.; Ziehm, *ZUR* 2018, 339 et seq.

⁷ For instance, Germany has obligated itself in the Federal Climate Change Act of 12.12.2019 (Federal Law Gazette I S. 2513) to gradually reduce its greenhouse gas emissions by 2030 by at least 55 % compared to 1990. Cf on this Frenz/Overath, *UPR* 2019, 479 et seq.; v. Oppen, *ER* 2020, 3 et seq.; Saurer, *NuR* 2018, 581 et seq. On the climate protection laws in other European states, see the comparative overview in WWF, *Klimaschutzgesetze in Europa*, 2019.

⁸ Cf Fischer, *Grundlagen und Grundstrukturen eines Klimawandelanpassungsrechts*, 2013.

⁹ Rightly on the need for this, German Advisory Council on Global Change (Wissenschaftlicher Beirat der Bundesregierung für Globale Umweltveränderungen, WBGU), *Welt im Wandel – Gesellschaftsvertrag für eine Große Transformation*, 2011.

¹⁰ IPCC, Summary for Policymakers, 2018, in: *Global Warming of 1.5 °C: An IPCC special report on the impacts of global warming of 1.5 °C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*, B.1.; IPCC, 2014: *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2.2.; IPCC: Summary for Policymakers, 2014, in: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Working Group II Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, A.1.

¹¹ IPCC, 2014: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Working Group II Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, FAQ 3.2, 4.4, 4.5, 11.1.

¹² Fundamentally Mathis, *Nachhaltige Entwicklung und Generationengerechtigkeit*, 2017.

¹³ Fundamentally Ehemann, *Umweltgerechtigkeit*, 2020; Hahn, *Umwelt- und zukunftsverträgliche Entscheidungsfindung des Staates*, 2017.

¹⁴ Cf Frenz, *UPR* 2020, 1 (1 et seq., 4 et seq.).

¹⁵ Cf only representatively for Germany Kahl/Daebel, *EEELR* 201, 67 et seq.; Wagner, *Klimahaftung vor Gericht*, 2020; Wissenschaftliche Dienste des Deutschen Bundestages, *Rechtliche Grundlagen und Möglichkeiten für Klima-Klagen gegen Staat und Unternehmen in Deutschland*, *WD 7-3000 – 116/16*,

legislatures worldwide are not yet active enough regarding effective measures against climate change, citizens and interest groups are increasingly “taking up the gauntlet” across the globe and – actively and/or ideationally supported by environmental protection associations (NGOs) as well as by global protest movements (“Fridays for Future”) – advocating in court a more effective climate protection legislation or for compensation for the damages they have suffered.¹⁶ In first climate actions, some of which have already been successful, the courts have begun to shape the new legal field of “climate damage liability”, which is still in the making.¹⁷ Yet many legal questions remain open and undecided, debated among lawyers as well,¹⁸ for they bring up fundamental questions of democracy and the separation of powers¹⁹. But this much is certain: globally, “climate change litigation” is a central topic, treated with equal intensity in scholarship and in practice (lawyers, courts, companies, NGOs). What is more, climate change litigation will surely – unfortunately – have a “great” future, much like the subject it involves, namely the damage caused by climate change. The present volume aims to contribute to treating the related legal issues, by focusing specifically on the perspectives of international and comparative law and analysing how the community of states as a whole can benefit from the – positive and negative – experiences of individual states with handling the damaging effects of climate change.

The legal problems discussed in connection with climate damage liability are diverse 5 and range from fundamental questions, which are relevant for all legal orders, to international and European issues, to national specificities. This volume has attempted to encompass all of these topics and to interlink them. In the process, many facts, insights, and conclusions have emerged, which, in their range and diversity, cannot be presented here in any comprehensive way. Instead, the final contribution is limited to taking up some especially important conclusions from the individual contributions and summarizing them, for one, but also, for another, interlinking them with a view to the future.

II. Fundamental questions

1. Sustainability and environmental justice

Kloepfer and *Neugärtner* understand “sustainability” and “environmental justice” as 6 framework conditions for evaluating environmental and climate decisions, whose different emphases complement each other: Sustainability emphasizes “time”, while environmental justice focuses on “space”.²⁰ Yet both framework conditions concentrate on the question of justice for humans in the environment, not of justice towards nature. Their traditionally strongly anthropocentric and instrumental emphasis therefore makes them “by and large [...] ignorant of and blind to non-human interests”.²¹ The question of justice towards nature can be better evaluated with the help of “ecological justice” as an additional framework condition. It is especially aware of “strange agents”, such as

2016; for the USA Rosso Grossman, *American Journal of Comparative Law* 66, 2018, 345 et seq. and for France Cournil/Le Dyllo/Mougeolle, *CCLR* 2020, 40 et seq.

¹⁶ Cf the overviews in Wegener, *ZUR* 2019, 3 et seq.; Meyer, *NJW* 2002, 894.

¹⁷ Cf as one example G. Wagner, *Klimahaftung vor Gericht*, 2020.

¹⁸ Critically for ex. Wegener (fn. 16), who fears a threat to parliamentary democracy and the division of powers. Similarly also Gärditz, *ZfU* 2019, 369 (382 et seq.). Favorably by contrast Graser, *ZUR* 2019, 271 et seq.

¹⁹ Often thematised in the literature under the keyword of the “danger of an eco-dictatorship”, cf Graf Kielmansegg, in: *FAZ* v. 16.9.2019, 6.

²⁰ Kloepfer/Neugärtner, mns 13 et seq., 16 et seq.

²¹ Kloepfer/Neugärtner, mn. 24.

greenhouse gases.²² With the help of these framework conditions, problems such as the temporal divergence of the causation of greenhouse gas emission and the time of damage (“time”), the spatial divergence of causation and the place of damage (“space”), and the requirement of adequate causation (greenhouse gases as “strange agents”) can be better understood and evaluated.

2. Polluter-pays principle

- 7 One of the central problems in climate liability procedures is identifying a responsible party. The polluter-pays principle, which *Rehbinder* analyzes and which is recognized as a legal principle in many legal orders today, is crucial in this respect.²³ Materially, the issue at stake is attributing the costs of pollution or of measures to prevent pollution. The costs are redistributed from the (potential) victims of environmental damages or the state (the general public) to the polluter and thus – in the language of environmental economy – no longer “externalized” but “internalized”.²⁴ However, determining the polluter creates complex problems. Causality is an essential requirement for establishing responsibility.²⁵ Climate liability law deals with global geographically remote damages (*Distanzschäden*) and cumulatively caused damages (*Summationsschäden*).²⁶ Consequently, the proof of causality between an activity that leads to climate change and a concrete damage in *Rehbinder’s* view raises considerable, perhaps even insurmountable problems.²⁷ This touches a sore spot at the heart of climate change litigation. Many other authors in this volume follow suit and also illuminate questions of causality from their particular perspective.

3. The role of the legislature and the judiciary

- 8 *Payandeh’s* contribution addresses another fundamental question by examining the courts’ role in climate protection and the separation of powers. Legal disputes in connection with climate change are very diverse. They can be carried out before different international, national, and regional courts; they concern different parties and actors and pursue entirely disparate goals.²⁸ At the international level, primarily the International Court of Justice would have jurisdiction.²⁹ But to date, it has not taken any decision directly concerning climate change.³⁰ The same applies to the European Court of Human Rights, which has however already developed comprehensive jurisprudence on the effects of environmental damages on human rights.³¹

²² Klopfer/Neugärtner, mns 25 et seq.

²³ *Rehbinder*, mns 5 et seq.

²⁴ *Rehbinder*, mn. 23.

²⁵ *Rehbinder*, mn. 33.

²⁶ Cf on this issue generally Lübbe-Wolff, *NVwZ* 2001, 481 (485 et seq.).

²⁷ *Rehbinder*, mn. 42.

²⁸ *Payandeh*, mn. 4.

²⁹ *Payandeh*, mn. 5.

³⁰ However, the ICJ discusses environmental issues in several judgments, cf *Gabcikovo-Nagumaros Project (Hung. v. Slov.)*, 1997 I.C.J. 3 (Order of Feb. 5), para. 53: “The existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment”. This idea was later applied in the *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*, Provisional Measures, Order of 13 July 2006, I.C.J. Reports 2006, 113, para. 204: “In this sense, the obligation to protect and preserve, under Article 41 (a) of the Statute, has to be interpreted in accordance with a practice, which in recent years has gained so much acceptance among States that it may now be considered a requirement under general international law to undertake an environmental impact assessment where there is a risk that the proposed industrial activity may have a significant adverse impact in a transboundary context, in particular, on a shared resource.”

³¹ *Payandeh*, mn. 6.

To date, the majority of court decisions dealing with climate change have been issued 9
by national courts. The possible litigational objectives are manifold. Actions can aim, first,
to force the authorities to take more effective measures to reduce emissions³² or, secondly,
to force the administrative agencies to take climate change concerns into account or
accord them greater importance.³³ Thirdly, it is possible to bring actions to reduce
greenhouse gas emissions directly against the emitting companies.³⁴ Another group of
actions aims to cope with the effects of climate change.³⁵ Finally, there are legal disputes
concerning the compensation of damages that have resulted from climate change.³⁶

4. Duties of protection

Gross' contribution attends to the importance of basic rights in their capacity as 10
climate-related duties of protection. He concentrates on the legal situation in Europe,
where there is already a common understanding upon which to build – also in the area
of environmental protection.³⁷ Only very few constitutions worldwide contain special
provisions on climate change. In these cases, constitutional duties to fight climate
change can only be derived from general environmental protection clauses or from
human rights.³⁸ Since the constitutional provisions to protect the environment often
cannot be claimed in court, human rights are extremely important in actions that aim to
take measures against climate change.³⁹ These protect not only from state measures
restricting the freedom of the individual but also impose the duty on the state to prevent
human rights violations by other human actors or natural catastrophes.⁴⁰

So far, the courts have passed rather restrained judgments. First of all, as a rule, there 11
are already considerable admissibility hurdles to overcome: where a constitutional
complaint to the Federal Constitutional Court in Germany is concerned, these hurdles
involve, in particular, substantiating the fundamental rights violation as a result of
alleged legislative omission as well as attributing effects in the case of global geographi-
cally remote damages (*Distanzschäden*) and cumulatively caused damages (*Summa-
tionsschäden*), in addition to exhausting all legal remedies.⁴¹ For example, the EU
General Court (EGC) has rejected individual plaintiffs' actions for annulment against
various legal acts of the EU as inadmissible, because the plaintiffs were not individually
affected (art. 263 para. 4 TFEU).⁴² In cases in which the admissibility hurdle was
cleared, the majority of courts so far have dismissed human rights violations in
connection with climate change at the merits level.⁴³ Nevertheless, these decisions carry
great ideational weight. The actions spur public debate and can influence political
activity in the state concerned and beyond its borders, even if they are dismissed.⁴⁴

³² Payandeh, mn. 11.

³³ Payandeh, mn. 12.

³⁴ Payandeh, mn. 13.

³⁵ Payandeh, mn. 14.

³⁶ Payandeh, mn. 15.

³⁷ Gross, mn. 5.

³⁸ Gross, mn. 6.

³⁹ Gross, mn. 11.

⁴⁰ Gross, mn. 11.

⁴¹ Gärditz (fn. 18), 384.

⁴² EU General Court Case T-330/18 *Carvalho et al./Parlament und Rat*, ECLI:EU:T:2019:324; on this
Winter, *ZUR* 2019, 259 et seq. Against the General Court's judgment, an appeal was lodged with the ECJ,
cf. Az. C-565/19 P. Generally on actions related to climate protection before the EU General Court, cf. the
overview in Krämer, *JEEPL* 2019, 198 et seq. with further references.

⁴³ Gross, mn. 58.

⁴⁴ Gross, mn. 59.

III. Procedural issues and Conflict of Laws

1. Procedures before civil courts

- 12 Climate change actions before the civil courts are of comparable ideational importance. Those affected by already apparent climate change effects thus attempt to eliminate impairments of their property and other rights by private parties (jointly) responsible for climate change. Non-governmental organizations, which often offer support, simultaneously aim to motivate the political actors to take action and to change the mindset of the general public (strategic litigation).⁴⁵
- 13 Because climate change is a global phenomenon, the circumstances underlying these actions refer to the law of multiple states.⁴⁶ Before a court can adjudicate the merits, it must therefore first clarify whether it has international jurisdiction in the matter and what substantive law applies to the case.⁴⁷ *Kieninger*'s contribution is dedicated to these questions of private international law in the broader sense. The country report on Germany by *Weller/Nasse/Nasse* also deals with these issues.
- 14 The principle of state immunity automatically rules out claims under private law against foreign states, for example to force them to take climate-protecting measures.⁴⁸ But this does not apply in matters involving the extraction or processing of fossil fuels by a foreign state or state-owned enterprise, since this constitutes a (private) economic activity.⁴⁹
- 15 According to the Brussels Ibis Regulation, the courts of the European Member States have international jurisdiction for actions against a legal entity at the registered seat, the administrative seat, or the seat of headquarters.⁵⁰ For tortious acts, the plaintiff may also choose courts based on their jurisdiction of the place of conduct or the place of damage.⁵¹ Parties (jointly) responsible for climate change are thus at risk of being sued in potentially any place worldwide for damages caused by the emission of greenhouse gases and the resulting global effects of climate change.⁵² But neither *Kieninger* nor *Weller* and *Nasse* consider it necessary to correct this jurisdiction rule in favour of the emitter.⁵³ The Brussels Ibis Regulation also allows for bringing joint action against a parent company and its subsidiaries, provided that the seat of the latter is in another EU Member State.⁵⁴ If the subsidiary has its seat in a third state, it depends on the national rules of jurisdiction of the court seized.⁵⁵ Actions in the USA against emitters established there also fall within the jurisdiction of the courts at the seat or at the place of headquarters, according to the US principles of jurisdiction.⁵⁶ Actions brought by foreign plaintiffs in particular, regarding damages that occurred abroad, are likely to fail due to the doctrine of *forum non conveniens*.⁵⁷

⁴⁵ *Infra* VII.4.c); cf *Weller/Nasse/Nasse*, mn. 4.

⁴⁶ *Kieninger*, mns 2 et seq.

⁴⁷ *Kieninger*, mn. 1.

⁴⁸ *Kieninger*, mns 6 et seq.

⁴⁹ *Kieninger*, mns 8 et seq.

⁵⁰ *Kieninger*, mns 14 et seq.; *Weller/Nasse/Nasse*, mns 28 et seq.

⁵¹ *Kieninger*, mns 19 et seq.; *Weller/Nasse/Nasse*, mns 30 et seq.

⁵² *Kieninger*, mn. 20.

⁵³ *Kieninger*, mns 23 et seq.; *Weller/Nasse/Nasse*, mns 34 et seq.; but see *Lehmann/Eichel*, *RabelsZ* 83 (2019), 77 (90 et seq.).

⁵⁴ *Kieninger*, mns 26 et seq.

⁵⁵ *Kieninger*, mns 28 et seq.

⁵⁶ *Kieninger*, mns 32 et seq.

⁵⁷ *Kieninger*, mns 38 et seq.

2. Applicable law

The Rome II Regulation determines the applicable law for actions before the courts of an EU Member State.⁵⁸ If the parties have not chosen a law, art. 7 Rome II Reg. applies to climate change litigation cases: The plaintiff can choose between the law at the place of damage and the law at the place of conduct.⁵⁹ Emitters therefore potentially face liability under the law of all states in which damages occur or threaten to occur as a result of global warming.⁶⁰ This can be mitigated by considering plant licenses at the level of (foreign) substantive law, although the details of this method of cognizance are disputed.⁶¹ According to US conflict-of-law rules, in principle, the applicable law is that of the place where the effect of the violation occurred. But since US Courts only apply conflict of laws when the parties plead foreign law, in practice questions of the applicable law are often not addressed in climate actions either, be it in principle or in the particular case.⁶² **16**

3. Arbitration proceedings

In addition to proceedings before national courts, the effects of climate change will also be the subject of arbitration proceedings. *Lennarz'* contribution sheds light on these proceedings. But the two essential branches of climate change litigation – actions against states to obligate them to increase climate protection and reduce emissions, and actions against private emitters – will not regularly be the subject of arbitration proceedings, because of lacking relevant arbitration agreements.⁶³ It could be different in the future for arbitration proceedings between states involved in disputes over natural resources. In the past, there have already been arbitration proceedings between states due to pollution, so that comparable proceedings for climate change are conceivable.⁶⁴ By contrast, proceedings directly on the basis of international climate treaties are also not to be expected in the near future because of lacking arbitration agreements.⁶⁵ But in the process of implementing these treaties, disputes between states, intergovernmental organizations, and private parties will arise indirectly, which can be settled in mixed or private arbitrations.⁶⁶ Moreover, as an indirect effect of climate change, disputes between individual actors may arise from an economy increasingly oriented towards sustainability and therefore transformed, as well as from new investments for a greener economy.⁶⁷ **17**

IV. State liability under international and European law

Wolfrum's contribution deals with the issue of environmental liability in international law. To date, there is no international regulation.⁶⁸ Instead, there are numerous liability **18**

⁵⁸ Kieninger, mns 41 et seq.; Weller/Nasse/Nasse, mns 40.

⁵⁹ Kieninger, mns 44 et seq.; Weller/Nasse/Nasse, mns 42 et seq.

⁶⁰ Kieninger, mn. 47; Weller/Nasse/Nasse mn. 53.

⁶¹ Kieninger, mns 50 et seq.; Weller/Nasse/Nasse, mns 57 et seq.

⁶² Kieninger, mns 60 et seq.

⁶³ Lennarz, mns 33 et seq.

⁶⁴ Lennarz, mns 40 et seq.

⁶⁵ Lennarz, mns 45 et seq.

⁶⁶ Lennarz, mns 56 et seq.

⁶⁷ Lennarz, mns 67 et seq.

⁶⁸ Wolfrum, mn. 3.