

# Perceptions of Soil in Catholic Theology

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In September 2016, the German bishops published a socio-ethical expert advice on the protection of soil.<sup>1</sup> In it, soil protection is understood as a central field of probation for contemporary responsibility for creation, because of the indispensable affordances that fertile farmland effects not only for human nutrition, but for the whole network of living processes. From the analysis - how much these functions are endangered worldwide by a creeping process of degradation - results the postulate of a paradigm shift towards a nature-compatible agriculture and area planning, a shift that touches upon some aspects of agricultural policy, development cooperation and consumption habits.<sup>2</sup> The way churches handle their considerable land ownerships has come under scrutiny, too. The following theses take up the Catholic text “*Der bedrohte Boden*“ (The Endangered Soil) and sketches some guidelines of Christian environmental ethics for the example of soil conservation. In times of climate change, population growth and international land speculation, soil protection has a special importance for sustainable development not only in Germany but all over the world. Our present times are often described as undergoing a “great transformation”: a time of accelerated changes in economy, work and life.<sup>3</sup> Especially the ecological distortions that have already occurred or are to be expected, together with the associated social exclusions, challenge our societies to search for new ethical standards for global development as well as for production and consumption patterns. This debate affects the foundations of our self-concept and thus exhibits a substantial religious and cultural dimension.

In the shadow of the “Defiant Earth”<sup>4</sup> a radical change in our models of development is postulated. In the face of such high demands for social change, it seems to be important to neither overestimate nor underestimate the role of the churches: they are no “moral agencies”<sup>5</sup> undergirding socio-ecological imperatives with theological pleas. Instead, their specific competence lies in a “moral beyond moralizing”<sup>6</sup>. In the given context, the ecclesiastical starting point of reflection and advice has to be the message of liberation together with the praise of creation and the awareness of its/her beauty. This way, it brings forward the longing for lost integrity, justice and fullness of life. What we need is not a rearmament with moral outrage, but a re-centering on the grand narratives of guilt and responsibility, anthropology and the perception of nature as well as culture and technology, in order to allow us to cope with the challenges of today’s life. It is foremost this narrative and anthropological integration that constitutes the surplus value of Christian theology of creation compared with a secular ethics of nature.

It’s a matter of power

In today’s global society, the unequal access to resources is closely related to a massive imbalance of power. This signifies a systematic challenge to include ecological aspects into the theory of justice insofar as it implies a considerable part of humanity to be cut off from their means of existence and bereft of their liberty. “The power of man over nature turns out to be a power wielded by some men over others with nature as their instrument.”<sup>7</sup> Ecological power can be defined as the faculty to privatize the benefits of environmental consumption and to externalize the costs by shifting them to the general public of present or future generations. For the systematic ethical perspective, what is essentially relevant here are the power and system questions combined with their underlying cultural patterns. It is precisely this extension of the ethical discourse beyond the mere discourse of giving reasons and beyond mere “orientational knowledge” in relation to the goals of action, which I see as the core of the arousing new language in the encyclical *Laudato si’*: in liberation theological diction, “power” is one of the most frequent lexemes in the text (67 uses). The encyclical does not limit itself to desirables in an idealistic fashion, but instead addresses questions of system and power.

The struggle for soil is and has often been a conflict of power. The worldwide headwinds for this today are “land grabbing” and “green grabbing”.<sup>8</sup> The massive seizure of fertile areas by countries like China, Saudi-Arabia and others especially in Africa has reached a level that can be dubbed ecological aggression with neo-colonial features. However, one should not overlook that the influx of capital into agriculture can also be conducive to a more productive cultivation. To this end, transparency is needed in combination with governments and administrations, which are capable of acting and not corroded by corruption. In addition, smallholders have to enjoy special protection. Even though the IAASTD report on global agriculture (2008) distinctly highlighted and empirically backed up the grand socio-economic and ecological potentials of smallholder structures,<sup>9</sup> these are nonetheless globally and constantly driven back by centralized interests of power.

Power always comes in the additional form of the power to define key concepts, which are coining the scientific and socio-political discourses in cognitive and normative respects. The radical “soil oblivion” in current economic guiding theories in this regard is an essential reason for soil protection to be unable to get beyond more or less non-effective pleas. While “land” has long been one of the central dimensions of reference for economic theories, since the 19<sup>th</sup> century it is usually only labor and capital that are taken into account as significant factors in theory building.<sup>10</sup> Soil is not addressed as a physical coordinate but as a dependent variable of price formation.

Consequently, soil protection only comes into view as a financial problem, which is why the privileging of land as area for settling or traffic in comparison to its use as agricultural or simply close-to-nature area can hardly be opposed in a systematic way. Extensive and multifunctional usages are unable to stand their ground against utilization quantified and absorbed in monetary value.

#### Soil as cross-sectional topic

A necessary, but by no means sufficient foundation for soil protection is to raise awareness. We are lacking the awareness that the dirt under our feet indeed does contain value. We are neither accustomed nor institutionally prepared to recognize soil in its absolutely basic functions for all living things.<sup>11</sup> Politically, soil protection doesn't stand a chance, because it is hardly appreciated in its connectedness to the protection of climate, biodiversity, water and food security. Which average citizen would know that in soil far more CO<sub>2</sub> is bound than in the atmosphere? If we want to make progress in climate protection, we have to bind more CO<sub>2</sub> in the ground (e.g. by means of deep rooting plants and moor protection). Life arises from soil. Without its protection, we will not succeed in conserving the diversity of species. The manifold eco-systemic services of soil are decisive for uncovering its ethical significance.

The ecological working group of the German Bishops' Conference already in 1998 formulated a striking passage on soil protection in their text “*Handeln für die Zukunft der Schöpfung*” (Acting for the Future of Creation) with reference to global nutrition.<sup>12</sup> The discrepancy between the shrinking availability of fertile soil on the one hand and humanity growing in numbers as well as demands on the other, did already at that time upset the authors to considerable extent. Although the situation has by no means relaxed since then, food security still is seen not consequently enough in its connection to soil protection. This is all the more the case, if we speak of “food sovereignty”, meaning the right to grow one's own nourishment instead of just being supplied, which is socio-culturally decisive and has led to a paradigm change in development policies concerning the interpretation of the human right to food.<sup>13</sup>

Furthermore, soil protection requires the building of awareness of the many different actors that are to be considered. What is at stake here is the land use regulation on a local and transregional scale: long-ranging and effective courses have to be set to determine potential ways of land use, which in Germany and elsewhere still substantially bear the mark of utopian dreams of progress from the 1960s and which have not been transformed systematically in the face to the challenges of sustainability.<sup>14</sup> The townships play a key role in this issue. As a result of insufficient participation in tax revenue in combination with false expectations regarding economic development, however,

they are quite often forced to sell their land and property. In addition, every single consumer is co-responsible for the ways our society deals with soil: Our dietary habits lay claim to considerable amounts of land, in our own country as well as elsewhere, due to imports of foods and animal feedstuffs. Increasing mobility, too, is a booster for the growing sealing of valuable soils. To this day 66 hectares of soil are buried under asphalt, concrete or other settlement areas in Germany every day. In the German sustainability strategy, the original aim to reduce the daily consumption of soil to less than 30 ha before 2020 has been postponed by 10 years to 2030. A strategy to at least come closer to this target is not within sight.

### Human as double-being: “earthbound” and spiritual

Etymologically, there is a close relation between soil and culture: the Latin *cultura* is derived from *colere*, to grow, till, cultivate, and further, to inhabit, foster, worship. Agriculture was seen as the archetype of culture in general: to embrace and adopt one’s environment, to get to feel at home in it, while still being dependent on the forces of nature that we cannot control, but instead have to maintain. The religious understanding of *cult* is also derived from this origin. Thus, we arrive at dimensions of soil that exceed today’s mere instrumental-rational relation by far. The peasant relationship to soil denotes the consciousness that it is the earth itself, which nourishes us and on which we subsist. Thus, soil becomes the symbol for the ecological roots of human existence. At the same time, a cultural dimension resonates, since it is always in part human labor, which opens up soil as nourishing living space. In peasant cultures, this synthesis of nature and culture is often closely interconnected with religious contents, such as harvest festivals or blessings of soil, animals and herbage.<sup>15</sup>

The Bible dubs human *adam*, “earthling” (cf. *adamah*, soil): he belongs to earth and soil, he is made from it. The biblical anthropology contains a theology of “earthiness”. The earth is not just our possession, but rather we are part of her, we belong to her. The Latin language is also aware of this connection between human and soil: *homo*, human, is probably derived from *humus*, soil. Only those who do not forget their closeness to earth, their roots and limits, will stay humane. Humor, also derived from *humus*, can help with this task and could often do some good to environmental ethics.

Humans are double-beings, combining earth and spirit. What emerges is a concept of “grounded spirituality”, tying sense and sensuality, heaven and earth, but nevertheless staying down to earth, in spite of intellectual and spiritual flights. For Christian spirituality, this close to earth consciousness as creature in the middle of creations constitutes a prerequisite as well as benefit of its attachment to God.

In his encyclical *Laudato si’*, Pope Francis strongly develops such an anthropological dimension. He combines this approach with Latin American traditions of close relations between humans and “Mother Earth” (*Pachamama*). The encyclical specifies the consequences of such a Christian earthbound anthropology especially for the context of smallholder agriculture as well as for a return to simple, close to nature ways of life and nutrition, which are paraphrased as “everyday ecology”. To this end, the Bible contains numerous directives, which at least in parts are still noteworthy today, e.g. the concept of Sabbath as a period of rest for human and cattle. As sabbatical year, (waiving crop cultivation every 7<sup>th</sup> year) this had immediate consequences also for soil protection. In such directives, some scientists see the reason for the complete lack of evidence of even a single greater famine in ancient Israel, despite its precarious ecologic circumstances in the mostly barren landscape of Palestine on the edge of the desert.<sup>16</sup> As jubilee, the sabbath protection gained an enormous socio-political importance in this peasant culture.<sup>17</sup>

Property entails responsibility

Since for the Bible, God himself is the owner of his creation and therefore of its soil, the land was considered inalienable during Israel's early periods: "The land shall not be sold in perpetuity, for the land is mine. For you are strangers and sojourners with me." (Lev 25,23; cf. Ex, 9,29; *Laudato si'*, 67) The earth as a whole together with everything in it and on it is subject to God's legal claim to power (cf. Ps 89,12; Dtn 10,14). For the Bible, the soil and all the land are regarded as a loan that may be worked on, inhabited and managed, but has to be passed on to the next generation in full integrity (cf. *Laudato si'*, 116). As seen by Thorsten Philipp, this differentiated concept of ownership is the most important contribution to environmental ethics from the side of Catholic social doctrine.<sup>18</sup> It has been significantly coined by Thomas Aquinas, who gave private property a pragmatic foundation instead of one in natural law. In his view, private property helps to motivate responsibilities and to demarcate usage rights, while at the same time it remains subject to limitations as a *bonum commune*.

In contrast to the concept of ownership by John Locke, who asserts an absolute right acquired by labor, the first social encyclical *Rerum novarum* (1891) resorts to Aquinas to search for a compromise between liberalism and communism. In this tradition, Catholic social teaching never considered the right to property to be absolute and inalienable, but subject and committed to the principle of common welfare. This applies especially to the goods of creation that primarily belong to the whole human family for common use. From here, the Compendium of the Social Doctrine deduces its principle that a stable climate is a public good and has to be internationally protected by corresponding statutory duties.<sup>19</sup> In secular international environmental law since the 1960s, this concept of an overall purpose of the goods of creation finds a widely analogous form under the heading „nature as a common heritage of mankind“.

Following these stipulations, the concept of ownership should not be conceptualized as unqualified with regard to soil; the owner is not free to arbitrarily do whatever comes to his or her mind. Instead, use of soil is limited insofar as it must not violate the public interest in its stand and functions.<sup>20</sup> The *ius abutendi*, the right to misuse, is to be excluded in regard to soil, because of its sensitive importance for affected ecosystems. According to the polluter pays principle, those who harm the soil have to pay for the harm done. This applies also to the pollution of groundwater that occurs during soil cultivation, which is considered one of the most explosive environmental problems worldwide. Since the established term „obligation to the common good“ (*Gemeinwohlpflichtigkeit*) is easily ignored, the episcopal expert advice on soil protection sharpens it by the introduction of „obligation to ecology“ (*Ökologiepflichtigkeit*).<sup>21</sup>

### The concept of Resource Justice

The normative questions of soil protection can only be reflected adequately if they are integrated in more general categories of environmental ethics. Thus, it can be assigned to one of the three fields of *environmental justice*, *ecojustice* or *resource justice*. Each of these conceptions has different theoretical models as its background that each lead to different evaluations. For instance, the concept of environmental justice, which originated in the 1980s in the context of the American civil-rights movement, is oriented socio-politically, socio-spatially and anthropocentrically, while ecojustice is most often linked to ecocentric patterns of argument. Distributive problems of ecologically unequal access to environmental goods are expressed best by the term resource justice.<sup>22</sup> In virtue of this "moral grammar" that focuses the relevant areas of conflict in dealing with soil, the concept of resource justice seems to be suited best as a normative theoretical framework for soil protection.

In social philosophy, this kind of contemplation within the context of a broader theory of justice can be annexed to the *capability approach*. It views resources in the light of *functionings* they facilitate and unfolds a concept of development on this basis, which does not begin with the mere supply of goods, but instead with its concept of *development as freedom*.<sup>23</sup> With this normative approach, soil protection can be grounded in a basis of human rights: Where humans and social

groups depend on access to fertile soil for their development of basic functionings, they have the right that this access must not be denied.

After the questions of resource justice have long been discussed primarily with regard to the future, the last few years witnessed a growing consciousness of countless people, who already today suffer under the costs of ecological externalization. This is prominently expressed by Stephan Lessenich in his title “*Neben uns die Sintflut*” (The Deluge next to us).<sup>24</sup> Analytically concise, he demonstrates how implausible it is to disregard societal environmental problems as merely relevant for the distant future. In variation of a much-quoted key phrase of Pope Francis, it could be put as follows: Our contemporary treatment of soil already today kills thousandfold every day.<sup>25</sup> To put it positively: soil reforms could save thousands of human lives every day.

The decisive ethical-political challenge is marked by the overcoming of shortsighted and fragmented perspectives, in order to activate the moral, political and economic resources of solidary action for providing protection of soil and environment. To this end, it is necessary to strengthen global control institutions for the implementation of resource justice. Soil protection therefore requires a fine-tuned interplay of regional, national, international as well as transnational regimes. The expert advice “*Der bedrohte Boden*” (The Endangered Soil) published by the German Bishops sums up its theological and ethical reflections in ten guiding principles for sustainable soil protection.<sup>26</sup> These are practice-oriented priorities, which aim at politics, agriculture and society as well as the Church itself. Even though there remain many open questions in their concrete interpretation and implementation, they nevertheless offer a strong normative compass. Following these guiding principles, I summarize the theses of this paper in the style of ten priorities, rules or “commandments” of soil protection.

### Ten Commandments of Soil Protection

1. Stop soil loss and degradation: The ongoing and worldwide loss in fertile soils regarding quantity as well as quality, due to erosion, steppe formation, desertification, floods, pollution and the recession of land surface brought about by rising sea-levels, is not compatible with the ethical principle of sustainability. Considering the growing world population, it is an urgent imperative of justice to stop this creeping process as soon as possible and to compensate for unrecoverable losses.
2. Reduce land consumption: The persistent trend to extensively seal areas in favor of settlement and traffic contradicts public welfare in the medium and long-term perspective. In Germany and comparable countries, the net new sealing has to stop, to which renaturalization and land recycling can contribute as well. Reduce of land consumption is a indispensable part of sustainability strategies in all countries..
3. Render intensive agriculture more compatible with soil conservation, expand sustainable agriculture: Intensive and extensive forms of agriculture are to be enabled site-specifically within the framework of a well-balanced overall concept under strict stipulations for the protection of soil, water and biodiversity. Transfer payments to agriculture (e.g. as part of the EU agricultural support) have to be tied to compliance with soil friendly methods of cultivation. Innovations in agricultural engineering have to be stronger oriented towards the ends of soil protection. New concepts of agriculture without using humus which are experienced in the context of bioeconomy, can help to compensate the loss of soil.<sup>27</sup>
4. Limit nutrient inputs, minimize pollutant inputs: The input of nutrients into soil, as well as of pesticides (including glyphosate) are to be significantly reduced. The necessary measure has to be scientifically determined. Observance has to be controlled independently and transparently.
5. Assert social responsibility and the polluter pays principle with regard to soil: The burdens of soil damages must not be passed on to third parties. The costs have to be internalized as

comprehensively as possible by adequate legal frameworks; polluters have to be charged with the liabilities.

6. Establish food security and sovereignty: Within the conflict of competitive uses of fields between food, fodder and energy production, the human right to food enjoys systematic primacy. The access of smallholders to soil in the global south has to be promoted as a key strategy in the fight against poverty as well as on the level of international environment, development and agricultural politics.

7. Tie land consumption to social and ecological norms: External direct investments for the acquisition and use of soil in poorer countries (so-called *land grabbing* and *green grabbing*) have to be strictly bound to the rules of socially and environmentally compatible cultivation methods and to be designed transparently. Hereto, the international community should formulate and enforce property and participation rights for the local population.

8. Accommodate the significance of soil in climate and biodiversity protection: Because of the considerable and to this day widely underestimated potential of soil to store carbon (or to release it), a repositioning of soil in the discussions and negotiations on global climate protection is needed. The role of soil as carbon sink has to be systematically furthered. In addition, soil protection should be incorporated as a key category in national and international biodiversity strategies.

9. Change consumption habits: Consumers carry an essential co-responsibility for soil protection. Therefore, they have to be accordingly informed and motivated as well as organize themselves within civil society. Preferential fields of activity are to avoid food waste (in Germany currently 18 million tons per year, equivalent to one third of the total amount), to reduce meat consumption and buy fair trade, organic and regional foodstuffs.

10. Make sustainable use of church areas: Churches have a decisive function as role models in soil protection. This arises from the fact that second to the state they are the largest land owners in Germany, holding about 5 to 7 percent of all the farmland and being able to influence its cultivation most of all via lease contracts. Also in some African countries churches own plenty of land.<sup>28</sup> Here, the criteria of social obligations to ecology for soil cultivation should be consequently demanded. Since in the interplay of the different legal entities, the parishes or monasteries (which own a considerable portion of soil) are autonomous, ecclesiastical soil responsibility has to be promoted primarily via the raising of awareness as well as support in formulating and implementing framework specifications. On the basis of credible practice, the churches could and should take public action as advocates of soil and the responsibility for creation.

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<sup>1</sup> Die Deutschen Bischöfe – Kommission für gesellschaftliche und soziale Fragen [DBK], *Der bedrohte Boden*. Ein Expertentext aus sozialetischer Perspektive zum Schutz des Bodens, hg. v. Sekretariat der Deutschen Bischofskonferenz. Bonn 2016. The author contributed to this text, which is a substantial basis for the following. Cf. also: M. Vogt: *Die Zehn Gebote des Bodenschutzes*. Schöpfungsethische Leitlinien zum Umgang mit Land, in: *Stimmen der Zeit* 4-2018, 265-275.

<sup>2</sup> Against this background protection of soils is not only one of the 17 Sustainable Development Goals (SDG 15) but has also a significant meaning for the prospects of sustainable development on the whole; cf. Saskia D. Keesstra et al: *The significance of soils and soil science towards realization of the United Nations Sustainable Development Goals*, in: *SOIL*, 2/2016, 111–128.

<sup>3</sup> Fundamental for the topos “Great Transformation” in Germany is: Wissenschaftlicher Beirat der Bundesregierung *Globale Umweltveränderungen [WBGU], Welt im Wandel: Gesellschaftsvertrag für eine Große Transformation*. Berlin 2011.

<sup>4</sup> Clive Hamilton, *Defiant Earth. The Fate of Humans in the Anthropocene*, Cambridge 2017.

<sup>5</sup> Hans Joas, *Kirche als Moralagentur?* München 2016; cf. also Franz-Xaver Bischof / Jochen Sautermeister (ed.), *Christliche Weltverantwortung – Kirche als moralische Instanz in der Gesellschaft*. Themenheft der Münchener Theologischen Zeitschrift, MThZ 68 (4/2017).

- <sup>6</sup> Cf. with recourse to Karl Rahner and as a differentiating reply to Joas (ann. 3) Jochen Sautermeister, „Kirche als Moralagentur?“ (H. Joas). Theologisch-ethische Überlegungen zur moralischen und politischen Relevanz von Kirche in der Gesellschaft, in: MThZ 68 (4/2017), 292-305, 299 (translation: MV).
- <sup>7</sup> Wuppertal Institut, Fair Future. Begrenzte Ressourcen und globale Gerechtigkeit. München 2006, 40 (translation: MV).
- <sup>8</sup> Brot für die Welt / FIAN Deutschland / Misereor / Oxfam Deutschland / Welthungerhilfe, Land Grabbing. Transparenz alleine reicht nicht! Positionspapier zur G8 Landtransparenzinitiative, auf: <[www.fian.de/fileadmin/user\\_upload/dokumente/shop/Land\\_Grabbing/Positionspapier\\_G8\\_Landtransparenzinitiative\\_4\\_2013.pdf](http://www.fian.de/fileadmin/user_upload/dokumente/shop/Land_Grabbing/Positionspapier_G8_Landtransparenzinitiative_4_2013.pdf)>.
- <sup>9</sup> International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD): Global Report. Washington 2009  
<https://www.weltagrabericht.de/fileadmin/files/weltagrabericht/IAASTDBerichte/GlobalReport.pdf>
- <sup>10</sup> Cf. for a criticism of this kind of modeling economy and the search for alternatives: Holger Rogal, Ökologische Ökonomie. Eine Einführung, Wiesbaden 2008, esp. 95-118.
- <sup>11</sup> Cf. the concise summary in: Netzwerk Boden, Boden. Grund zum Leben. Pressedossier Boden & Ernährung. Bonn 2015: GIZ, online auf: <[www.grund-zum-leben.de](http://www.grund-zum-leben.de)>; cf. also Umweltbundesamt [UBA], Stark unter Druck. Lebensgrundlage Boden. Daten und Fakten aus globaler Sicht (UBA Fact Sheet 12/2014). Dessau 2014; DBK 2016 (footnote 1), 13-27.
- <sup>12</sup> Cf. Die Deutschen Bischöfe – Kommission für gesellschaftliche und soziale Fragen [DBK], Handeln für die Zukunft der Schöpfung, hg. v. Sekretariat der Deutschen Bischofskonferenz. Bonn 1998, esp. no. 21f.
- <sup>13</sup> For the concept of food sovereignty cf. the IAASTD report (footnote 8), esp. 13 and 221; for the socio-ethical aspects see also Markus Vogt / Hildegard Hagemann, Zwischen Ernährungssouveränität, Exportorientierung und Energiegewinnung. Sozialethische Analysen zu Landwirtschaft und Ernährungssituation in Afrika, in: Amosinternational 4/2010, 19-27.
- <sup>14</sup> Cf. Martin Lendi / Karl-Hermann Hübler (ed.), Ethik in der Raumplanung. Zugänge und Reflexionen. Hannover 2004.
- <sup>15</sup> Cf. Markus Vogt / Beatrice van Saan-Klein / Clemens Dirscherl (ed.), „... es soll nicht aufhören Saat und Ernte“ (Gen 8,22). Ein Praxisbuch zum Mehr-Wert nachhaltiger Landwirtschaft. München 2004.
- <sup>16</sup> Aloys P. Hüttermann / Aloys H. Hüttermann, Am Anfang war die Ökologie. Naturverständnis im Alten Testament. München 2002. Whether the fallow year was indeed adhered to, however, is controversial. Beyond soil protection, Aloys Hüttermann and his son denote numerous other rules of conduct, which testify to a high standard of ecological knowledge in ancient Israel (e.g. in the scope of heredity or hygiene, although this should be considered more of a practical and experience-based knowledge than biological knowledge in our contemporary understanding).
- <sup>17</sup> The biblical instances hereto are numerous, cf. exemplarily Ex 20,8-11; 23,12; Lev 19,3.30 and Dtn 5,12-15. For soil protection, especially Lev 25,4-7 (sabbatical year as fallow) and Lev 25,8-31 (year of Jubilee) are relevant. Characteristic for the Old Testament Sabbath commandment is the unity of social and ecological aspects. Pope Francis takes up the Sabbath commandment as eco-social guiding maxime, cf. LS, no. 71 and 237.
- <sup>18</sup> Thorsten Philipp, Grünzonen einer Lerngemeinschaft. Umweltschutz als Handlungs-, Wirkungs- und Erfahrungsort der Kirche. München 2009, 112-119.
- <sup>19</sup> This would have to be developed further in dialogue with the economic differentiations of collective/public and club goods as well as the problems of commons. Cf. Elinor Ostrom, Governing the Commons. The Evolution of Institutions for Collective Action. Cambridge, UK 1990; id., The Challenge of Common Pool Resources, in: Environment: Science and Policy for Sustainable Development, 50 (2010) 4, 8-21.
- <sup>20</sup> Cf. Bernd Hansjürgens / Andreas Lienkamp / Stefan Möckel, Art. Boden, in: Staatslexikon, Bd. I, Sp. 762-767.
- <sup>21</sup> Cf. DBK 2016 (ann. 1), 39-41.
- <sup>22</sup> For an empirically and conceptually differentiated introduction cf. Wuppertal Institut (ann. 5), 125-155. German Minister of Development Gerd Müller [retrieved February 2018] also uses „resource justice“ as a guiding concept: Gerd Müller, Unfair! Für ein gerechte Globalisierung. Hamburg 2017, 56-67.
- <sup>23</sup> Cf. Amartya Sen, Development as Freedom. New York 1999.
- <sup>24</sup> Stephan Lessenich, Neben uns die Sintflut: Die Externalisierungsgesellschaft und ihr Preis. Berlin 2016, bes. 9-36; 171-199.
- <sup>25</sup> Here I refer to Pope Francis' phrase „Such an economy kills“ in the Apostolic Exhortation Evangelii gaudium, 2013, no. 53.
- <sup>26</sup> DBK 2016 (footnote 1), 46-50.
- <sup>27</sup> Markus Vogt, Bedingungen ethisch verantwortbarer Bioökonomie, in: Forum Wirtschaftsethik 26. Jg. 2018 (special edition), 31-51.
- <sup>28</sup> Deutsche Kommission Justitia und Pax (Ed.): Food Security and Energy Supply between Self-Interest and Global Justice (Justice and Peace 121), Bonn 2010; Markus Vogt/ Hildegard Hagemann, Zwischen Ernährungssouveränität, Exportorientierung und Energiegewinnung. Sozialethische Analysen zu Landwirtschaft und Ernährungssituation in Afrika, in: Peter Klasvogt u.a. (Hg.), Amosinternational 04/2010, 19-27.