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Climate-Ready Seeds and Patent Rights: A Question of Climate (in) Justice?

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Abstract: This paper seeks to examine the concept of climate justice and how it is employed by different actors and for different ends. This will be done through an exploration of invocations of climate justice in discussions about a proposed adaptation strategy, namely ‘climate-ready seeds’. The impacts of climate change are often perceived as a form of injustice, because the most vulnerable regions and people suffer disproportionately while having contributed least to causing climate change. Adaptation strategies intended to alleviate this suffering can be viewed as a pursuit of climate justice. At the same time, some argue that certain adaptation strategies cause more injustice than they alleviate. Climate justice movements thus also aim to correct the injustices caused by adaptation strategies. Critics of climate-ready seeds contend that this proposed adaptation strategy is a profitable business for seed corporations, but does not benefit poor farmers. Even though different actors use the concept of climate justice for different purposes, they often invoke similar notions of ‘rights’. I argue in this paper that reliance on rights in all accounts of climate justice in discourses about climate-ready seeds plays a hand in obscuring the distinct aims and ends contained in the idea of climate justice.

Keywords: climate justice, climate-ready seeds, property rights, human rights, climate change adaptation law

1 Introduction

The notion of ‘climate justice’ has emerged in recent years, following earlier ideas revolving around the will to ‘denounce social grievances’ on local and global levels, including social justice, environmental justice, and global justice.¹ Climate justice movements highlight the injustices of the impacts of climate change, adversely affecting the most vulnerable regions and peoples

¹ See, for instance, Austin and Bedall (2010).

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disproportionately. Climate justice is relevant for mitigation, for instance in articulating ‘common but differentiated responsibilities’ in obligations to reduce carbon emissions.² The focus in this article is, however, on the concept of climate justice as relevant to and invoked in adaptation policy.

One of the most affected sectors as a result of climate change is and will continue to be the agricultural sector. The impacts of climate change are predicted to result in decreases in crop yields, especially in the most vulnerable regions of the world. Climate justice is invoked in discussions about the predicted effects of climate change and adaptation strategies devised to deal with them. In this paper, I explore the concept of climate justice through its use in the promotion and rejection of one proposed adaptation strategy, namely so-called ‘climate-ready seeds’.

Climate-ready seeds are genetically engineered to be resistant to certain climate stresses, and intended to produce higher crop yields and thereby ensure adequate food production in the face of adverse climatic conditions.³ They are viewed as a way to alleviate the injustices caused by the impacts of climate change on food production. In other words, climate-ready seeds could be viewed as a means through which to achieve climate justice. A contradicting, and perhaps more prevalent, account is that climate-ready seeds – and particularly the fact that they are increasingly subjected to patent applications by large seed corporations – are in themselves a form of injustice. Climate justice movements frequently criticize this adaptation strategy and contend that these seeds will not alleviate the suffering of those who are food insecure as a result of climate change.

This paper will first elaborate on the term climate justice and explain that this term can be used in different ways in climate change discourse. It is used primarily to indicate that the impacts of climate change disproportionately affect the most vulnerable regions and peoples, and consequently to argue that something must be done to alleviate the worst suffering. Climate justice can be used to justify adaptation strategies. Adaptation strategies themselves are also sometimes perceived as contributing to climate injustices. Subsequently, the paper will discuss the relevance of different uses of climate justice, specifically in various accounts of climate-ready seeds. The main analysis of this paper will

² As stipulated for instance in article 10 of the Kyoto Protocol.

³ The latest assessment report by the Intergovernmental Panel on Climate Change (IPCC, 2014) published in March 2014 reiterates the adverse impacts climate change will have on food production and security. IPCC Assessment Report 5, Working Group II: Climate Change 2014: Impacts, Adaptation, and Vulnerability, especially at chapter 7: ‘Food Security and Food Production Systems’.

focus on how climate justice movements go about opposing the perceived injustice of increasing patent applications by large corporations on climate-ready seeds.

The central argument I make in this paper is that the different invocations of climate justice in discourses on climate-ready seeds all focus heavily ‘rights’ to attain their idea of justice. Employing the same form of rights in different conceptions of climate justice serves to obscure the variation of its meanings and aims.

2 Climate justice

The adverse impacts of climate change will be felt most severely by those regions of the world and individuals living in them who are most vulnerable, in part as a result of their socio-economic situations. It is widely accepted that anthropogenic climate change is for the most part attributable to past and present carbon emissions by the developed world, while the developing world suffers the brunt of the adverse consequences. Part of the increased vulnerability of the developing world is related to a lack of adaptive capacity. This inequality in contributing to causing climate change and disproportionately suffering from its impacts is often referred to in terms of ‘injustices’.⁴ Movements aimed at alleviating such injustices frequently invoke the term ‘climate (in)justice’. The idea of ‘climate justice’ entered into climate change negotiations during the 6th Conference of the Parties meeting in 2000 and has strengthened as a campaign movement since then.⁵

The term climate justice is equally nebulous as related terms (social justice, global justice, environmental justice) and encompasses a host of views and angles.⁶ A common view in defining climate justice is an ideal of how the responsibilities and benefits of climate change policies and outcomes should be distributed. There are, however, few guidelines as to how this ideal should be achieved. Climate justice is used in adaptation discourse firstly to recognize the inequitable impacts of climate change, and then to incorporate standards of equity and fairness into adaptation policies in attempts to alleviate disproportionate suffering.⁷ More recently, as adaptation strategies are being developed,

⁴ See, for example, www.climateinjustice.com.

⁵ See Whitehead (2014).

⁶ For instance, see Novak (2000) for a succinct discussion of the difficulties related to the term ‘social justice’.

⁷ See, for instance, Adger et al. (2006). Many of the chapters in this book refer explicitly to ‘justice’ and ‘injustice’ in relation to climate change adaptation strategies.

many participants in climate change discourse are also identifying these strategies themselves as possible ‘injustices’. In other words, it is not only the impacts of climate change that adversely and disproportionately affect the most vulnerable people; adaptation strategies in some cases exacerbate rather than alleviate the suffering.

The United Nations Framework Convention on Climate Change (UNFCCC) reflects the concept of climate change most clearly through the notions of ‘equity’ and ‘common but differentiated responsibilities’.⁸ These principles suggest that developed countries – as the biggest contributors to anthropogenic climate change through carbon emissions over the past decades – should ‘take the lead in combating climate change and the adverse effects thereof’.⁹ NGOs and civil society organizations who are actively promoting the idea of climate justice also emphasize, on the one hand, the vulnerability of the developing world in facing the impacts of climate change, and, on the other hand, the responsibility of the developed world to lead the way in dealing with these impacts.¹⁰ Whereas mitigation of climate change was for a long time the main focus of climate change policies, more attention has been given in recent years to the need to adapt to inevitable or unavoidable consequences of climate change. Adaptation to climate change is in itself a question of climate justice, as developed countries are not only considered more responsible in the fight against climate change, but also more capable of devising and implementing adaptation measures.

In a chapter of the *Research Handbook on Climate Change Adaptation Law*, Rosemary Lyster writes about climate justice and uses Amartya Sen’s ideas of vulnerability and capacity (Lyster, 2013, 32–69). Developing adaptation strategies that contribute to realizing climate justice involves focusing on the capacities given to communities and peoples to benefit from these adaptation strategies. Distribution of benefits is an important aspect of climate justice in terms of adaptation. Adaptation measures should benefit those who require them most desperately. In the same vein, Jouni Paavola and W. Neil Adger write about ‘fairness’ in adaptation to climate change. They identify different aspects of ‘justice’ that are relevant in climate change adaptation: responsibility

⁸ See UNFCCC article 3(1): ‘The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of *equity* and in accordance with their *common but differentiated responsibilities* and respective capabilities.’ (emphasis added). See also Robinson (2010).

⁹ This is the last part of article 3(1) UNFCCC.

¹⁰ See, for example, Climate Justice Now!, www.climate-justice-now.org/em-cjn/mission; Mary Robinson Foundation – Climate Justice, www.mrfcj.org/about/principles; Climate Justice Online, www.climatejusticeonline.org. These are only a few of many examples of organizations and movements that are campaigning under the same broad heading of ‘climate justice’.

for climate change impacts; level and burden sharing of assistance; distribution of assistance; and equal participation in planning and decision-making. Paavola and Adger reinforce the value of ‘justice’ as an important part of the adaptation discussion by stating that ‘[...] keeping social justice off the negotiating table denies the relevance and legitimacy of vulnerable actors’ concerns and interests’ (Paavola and Adger, 2006, 606).

The concept of climate justice is used by different actors with distinct – and often contradictory – intentions. In terms of adaptation policy, this means that climate justice can be used to promote as well as to dismiss the same policies. One important strand of discourse on climate justice emphasizes a rejection of market-based solutions to climate change. For instance, Climate Justice Now! is ‘a network of organisations and movements from across the global committed to fight for social, ecological and gender justice’.¹¹ Their campaigns promote grassroots movements and call for indigenous rights and food sovereignty. These are viewed broadly as anti-capitalist movements that call for solutions to climate change impacts that are not market-based. Climate Justice Action is another global movement calling for climate justice and against market-based solutions. Their activists likewise seek recognition for indigenous rights of peoples in developing countries, who experience the worst effects of climate change. Although there is a strong focus on anti-capitalist movements, there are also actors who promote the term climate justice not to reject market-based solutions, but to strengthen market mechanisms so as to achieve climate justice (Austin and Bedall, 2010).¹²

Climate-ready seeds are an example of a market-based adaptation strategy. These seeds are genetically engineered with the intention to be resistant to abiotic stresses such as droughts, higher average temperatures, increased rainfall, etc. The next section will elaborate on different conceptions of climate justice and how they are used to promote and reject climate-ready seeds as an adaptation strategy.

3 Patenting climate-ready seeds: climate justice or injustice?

Climate change is predicted to have severe adverse impacts on agricultural crop yields, especially in those regions already most vulnerable. As a result of

¹¹ See, for example, www.climate-justice-now.org.

¹² The authors give the example of ‘tckctckck – Time for Climate Justice Campaign’, <http://tckctckck.org>.

declining food production in some regions, there are numerous projections that global food insecurity will worsen. This affects the most vulnerable regions and peoples most severely, and is considered a form of injustice. One strategy devised to adapt to declining crop yields in the face of climate change is the development of genetically engineered seeds that are purportedly resistant to droughts and other climate stresses. Proponents of climate-ready seeds argue that they can contribute to alleviating climate injustice. Opponents, on the other hand, contend that this adaptation strategy only leads to more injustice.

In this section, I identify two broad understandings of climate justice that are relevant in contentious views on climate-ready seeds. The first is a productivist account, which emphasizes the need to increase food production and moreover highlights the need for patent rights as incentives to develop higher-yielding crops. The productivist account is in line with strengthening market-based solutions. The second is a distributive account, which underscores the urgency not only of producing more food, but especially of ensuring that it reaches and benefits those who need it most. The distributive account as presented in this paper is in line with the rejection of market-based solutions.

3.1 Climate-ready seeds as a climate change adaptation strategy

Increased incidences of drought, higher average temperature, and floods, among other climatic conditions, will have an enormous impact on food production and food security. These adverse impacts will be felt most severely in the developing world.¹³ The fourth assessment report by the Intergovernmental Panel on Climate Change (IPCC) from 2007 stated that climate change will exacerbate food insecurity and increase instances of malnutrition, particularly in parts of Africa (Parry et al., 2007). In its fifth and latest assessment report, the IPCC confirms these statements and emphasizes further that adverse consequences of climate change on agriculture are already taking place.¹⁴ The impacts of climate change on food production and food security are often linked to problems of hunger. In one of many projections, with an assumed 4.4°C increase in average global temperature and a 2.9% increase in precipitation by 2080, the decrease in global agricultural output potential is estimated to be 6% (De Schutter, 2009, 7). A report from the World Food Programme suggests that the

¹³ Lyster, for instance, writes at that ‘poor and vulnerable groups are likely to be at high risk of climate change-induced food insecurity’ (Lyster, 2013, 47).

¹⁴ See note 2 above.

percentage of the world population at risk of hunger will increase from 10 to 20% by 2050, *as a result of* climate change (Parry et al., World Food Programme 2009, 14). The important point to note here is that it will be those regions and those people who are already most vulnerable, already the poorest and the least capable of adapting to these climatic impacts, who will suffer disproportionately from food insecurity, malnutrition, and hunger. These unequal impacts can be perceived as forms of climate injustice.

Adaptation measures to climate change, in accordance with principles of climate justice, should seek to address these injustices. Genetically engineered, climate-ready seeds and crops are sometimes presented as an adaptation strategy to alleviate the injustices connected with failing crop yields. Researchers at the University of Wageningen noted in the first sentence of a book chapter that ‘climate-ready GM crops can be of great help in adapting to a changing climate’ (Timmermann et al., 2010, 153). Developing strategies to increase food production can be directly related to addressing the injustice of climate change-induced food insecurity.¹⁵

Research and development of climate-ready seeds are often justified using principles of ‘justice’. Seed corporations and governments supporting the development of agricultural biotechnologies in the form of genetically engineered seeds often put forth justifications such as ‘feeding the world’, ‘ending hunger in the face of climate change’, etc. One such an advertisement, for example, reads: ‘Biotechnology is one of tomorrow’s tools in our hands today. Slowing its acceptance is a luxury our hungry world cannot afford’ (Robbins, 2011). An article in Dutch newspaper *De Volkskrant* in 2006 was published under the title ‘New crops needed against hunger as a result of warmer climate’ (*De Volkskrant*, 2006). These few references indicate that at least by some, genetically engineered seeds are considered tools in combating food insecurity and hunger in the context of climate change.

Research and development of genetically engineered seeds is a very costly business. A handful of large agricultural biotechnology corporations are the dominant players in the development of climate-ready seeds. Climate-ready seeds developed by private seed corporations are market-based solutions. Seed corporations genetically engineer seeds and then apply for intellectual property protection – in order to charge fees to third party users – to their products. The main projected intention is to achieve higher crop yields, increase food production, and thereby adapt to some of the related to climate change impacts on

¹⁵ Lyster writes that global food production needs to increase by 70 to 100% by 2050 to address yield losses due to climate change, as well as other factors including a growing world population (Lyster, 46).

agriculture. Proponents hold that patent rights incentive the development of climate-ready seeds that can contribute to alleviate climate injustices.

Seed corporations who invest in developing climate-ready seeds are increasingly filing patent applications on these seeds. Proponents of climate-ready seeds contend that without the incentives of patent rights, seed corporations would not invest in climate-ready seeds, and there would be no way to produce enough food in the face of climate change. There are, however, also substantial criticisms of the growing patent applications on climate-ready seeds and the fact that it is handful of corporations that own these patents. Critics argue that through the application of patent rights, climate-ready seeds benefit these corporations but do nothing to address the injustices of food insecurity in the face of climate change.

3.2 Seed patents and climate injustice

Seed corporations invest a great deal of money and time in the research and development of genetically engineered, climate-ready seeds. These corporations are increasingly applying for and are sometimes granted temporary exclusive intellectual property rights in the form of patents on climate-resilient traits in seeds. A recent study by the Organization for Economic Cooperation and Development (OECD) notes that patent applications on adaptation-related biotechnology have increased from less than ten in 1997 to almost 200 in 2007 (Agrawala et al., 2012, 3). This number has likely increased even further from 2007 onwards. In a 2010 report, the ETC Group identified 261 ‘patent families’, or groups of patents protecting a single trait, directly related to abiotic stress resistance in crops (ETC Group, 2010, 5–7). These include over 1,600 patent documents. The division between private sector patent applications and public sector patent applications is striking: 91% of these patent applications are done by private sector entities with only 9% by public sector entities. Of these private sector patent applications on climate-ready crops, six of the largest biotech corporations were the applications in 77% of the private sector patent applications (ETC Group, 2010).¹⁶

Plants and other living materials were for a long time not considered patentable subject-matter. Patentable subject-matter must be an ‘invention’, something that is manufactured and not a ‘discovery’ found in nature. Modern breeding techniques and particularly genetic engineering techniques have allowed seeds and plants to enter the realm of patentable subject-matter. Genetically engineered seeds can be considered inventions or manufactures,

¹⁶ These six are Bayer, Syngenta, BASF, Dow, DuPont (Pioneer), and Monsanto.

as they are not found in engineered form in nature. The emergence of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) in 1994 significantly strengthened the international protection of intellectual property, including patent rights on plants.¹⁷ The application of patent rights or other forms of *sui generis* protection to plants is stipulated in article 27(3)(b) of the TRIPS. It stipulates that '[M]embers shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof'. The application of patent rights to plants continues to be extremely controversial. There are many voices that strongly oppose this development, and there is particular criticism of the growing rate of patent applications by a small number of corporations.

The dominant theory underlying the granting of patent rights is to reward and incentivize the creators/inventors for their investments in developing a new innovation. Patent rights are temporary exclusive ownership rights. Patent-holders can charge third parties fees for the use of the patented products or processes. The ultimate rationale for granting such private property rights is commonly perceived to be the broader benefit to society through the development and dissemination of innovations. In the case of climate-ready seeds, patent applications are justified by seed corporations and governments supporting them on the basis of this dominant theory. Without the incentives of patent rights, they contend, seed corporations would not invest in the research and development of climate-ready seeds, and the world would miss out on this important adaptation measure. Critical voices, however, argue that patent rights block access to these seeds to the people who need them the most, namely the poorest, most vulnerable who suffer the consequences of decreased food production. These people are not able to afford the licensing fees and can therefore not benefit from climate-ready seeds.¹⁸

Critical perspectives on patented climate-ready seeds are also often wrapped in the language of 'justice'. NGOs and civil society organizations criticize genetically engineered climate-ready seeds as 'non-solutions'.¹⁹ The ETC Group writes

¹⁷ The TRIPS Agreement is administered by the World Trade Organization (WTO). It therefore brings intellectual property protection into the realm of the international trade system. All members of the WTO are bound to adhere to the minimum standards of intellectual property protection as stipulated in TRIPS.

¹⁸ Three main objectives underlie criticism of climate-ready seeds: these seeds have not been proven to produce more crop yields; even if such proof will emerge in the future, they will not combat hunger in the face of climate change partly because this adaptation strategy fails to address problems of access and distribution of food; and even if they do increase food production, the escalating exclusive patent applications on them further curtail access by those most likely to need them.

¹⁹ See for example Durban Climate Justice Press Release, 12/8 2009.

that the biggest seed corporations – who they refer to as ‘Gene Giants’ – are ‘stockpiling patents’ that ‘threaten future food supply’ (ETC Group, 2010). Seed corporations tend to work with commercially viable crops, and not necessarily those crops grown by poor farmers in the developing world. Moreover, the costs that come with patented seeds and crops prevent these farmers from buying and using climate-ready seeds, and from benefiting from this adaptation strategy. These arguments are reiterated often in terms of climate justice.²⁰ The injustice in this narrative is mainly the application of strong patent rights, not the development of climate-ready seeds *per se*. NGOs and civil society movements who view patented climate-ready seeds as a form of injustice often respond to this by calling for fairer distribution of the benefits of adaptation policy and by advocating other forms of rights, notably human rights.

The way in which climate justice is invoked to reject patents on climate-ready seeds as a way to alleviate climate change-induced food insecurity is in line with climate justice movements that reject market-based solutions, as noted in section 2 above. In the next part of this paper, I will examine how the concept of climate justice is used in attempts to reject the increased patent applications by seed corporations on climate-ready seeds.

4 Using rights to achieve climate justice

NGOs and civil society organizations – including the ETC Group, La Via Campesina, and Navdanya – campaign against the application of patent rights by private seed corporations on (genetically engineered) seeds. They consider the commodification and privatization of food as a form of injustice, whereby private actors benefit from exclusive ownership rights, a market monopoly, and licensing fees, while people – especially in the most vulnerable regions of the world – who face food insecurity cannot afford to buy the improved seeds. Those who invoke a distributive account of climate justice often rely on forms of ‘rights’ in attempts to achieve a just distribution of benefits. However, I will suggest here that this use of rights discourse might contribute – unintentionally – to reinforcing the productivist account of climate justice it tries to reject. Relying on the same kinds of rights in different understandings of climate justice contributes to blurring the different aims in the invocation of this amorphous concept.

²⁰ See, for example, www.actforclimatejustice.org/2010/10/surge-in-corporate-patents-on-%E2%80%9Cclimate-ready%E2%80%9D-crops-threatens-biodiversity-and-signals-grab-on-land-and-biomass/ and www.climate-justice-now.org/cjn-warns-of-corporate-grab-on-biomass/.

4.1 Achieving climate justice: rights against rights

Law is regularly presented as a tool to ‘facilitate adaptation’ and even to address ‘some of the social justice dimensions of adaptation’ (McDonald, 2011, 283). Discourses on climate-ready seeds frequently draw on different areas of law – such as patent law, biodiversity law, and human rights law – to justify their actions and intentions. Critics of climate-ready seeds attempt to counter the perceived injustice caused by corporate patents in several ways, one of the main ways being the use of other forms of ‘rights’. The monopoly of seed corporations over patent rights is seen as an unfair or unjust distribution of rights and benefits from these potential adaptation tools. In terms of achieving climate justice, critical voices tend to argue for a more fair and just distribution of rights, including intellectual property rights, which would then lead to a better distribution of benefits from this adaptation strategy. Some argue that the distribution of benefits arising from the development and use of these seeds can be improved. One of the key aims is the prevention of ‘unjust and unfair assignments of property rights’ through ‘an ethically acceptable IPR’ and ‘just distribution of objects of innovation that are covered by patents’ (Timmermann et al., 155). Intellectual property rights on climate-ready seeds are not rejected *per se*, but the distribution of rights must be corrected or directed. Critics regularly invoke other forms of rights in efforts to achieve just distribution. Two of these ‘counter rights’ will be discussed here, namely farmers’ rights and human rights – particularly the right to food.

One of the biggest critiques of corporate patents on climate-ready is that seed corporations claim ownership over genetically engineered seeds, but the farmers and indigenous populations in developing countries who have for centuries preserved the agricultural biodiversity are not recognized and are not granted similar proprietary rights. The concept of ‘farmers’ rights’ emerged as a ‘strategy of resistance against the perceived inequities of intellectual property rights regimes for plant varieties’ (Borowiak, 2004, 511). This right is stipulated in article 9 of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR).²¹ If intellectual property rights, in the form of patents, are

²¹ The ITPGR came into force in 2004 and was initiated by developing countries as a mechanism to facilitate the benefit-sharing from seeds in response to increased patenting of seeds. Its proponents argue that this treaty is ‘crucial in the fight against hunger’, see www.planttreaty.org. ITPGR article 9(1): ‘The Contracting Parties recognise the enormous contribution that the local and indigenous communities and farmers of all regions of the world, particularly those in the centres of origin and crop diversity, have made and will continue to make for the conservation and development of plant genetic resources which constitute the basis of food and agriculture production throughout the world.’

going to be granted on plant genetic resources to seed corporations, then surely the farmers who have for centuries bred improved varieties of plants to secure adequate food production should also be able to claim some form of intellectual property rights over these seeds. Although farmers' rights are increasingly recognized, they are difficult to enforce, unlike patents. Former UN Special Rapporteur on the Right to Food, Olivier de Schutter, has referred to farmers' rights as 'rights without remedies' and 'rights only by name' (De Schutter, United Nations General Assembly, 2009, para. 43, p. 16). Despite the difficulty of defining and enforcing farmers' rights, perspectives that are critical of corporate patents on climate-ready seeds frequently rely on this concept as a means of opposition to corporate seed patents.²²

In addition to farmers' rights, human rights language is increasingly used in the context of climate change adaptation. The right to food is particularly relevant in accounts that attempt to redistribute the benefits of climate-ready seeds and counter the monopoly effects of corporate patents. De Schutter wrote a report specifically about seed policies and the right to food. This report aims to explore how states can implement seed policies that 'contribute to the full realization of human rights' and how commercial seed systems can be regulated in order to 'serve the right to food' and is very relevant in terms of climate-ready seeds. The report formulated a right to food approach as follows (De Schutter, UNGA, 2):

[A right to food approach] obliges us to ask not only which policies may maximize yields—agricultural outputs—but also, and primarily, who will benefit from any increases achieved by whichever policies are put in place. The right to food requires that we place the needs of the most marginalized groups, including in particular smallholders in developing countries, at the centre of our efforts.

Using human rights and particularly the right to food in discussions on climate-ready seeds attempts to achieve a more fair and just distribution of benefits from these seeds.

Tackling the 'injustice' of patent rights held by seed corporations on climate-ready seeds often involves the employment of other kinds of 'rights'. The hope is to achieve climate justice through a better distribution of property

²² The predecessor of ETC Group was instrumental in coining the term 'farmers' rights and this concept is still used frequently in their reports. Other NGOs such as Navdanya also promote farmers' rights, see, for example, www.navdanya.org/climate-change/climate-change-and-biodiversity, where the importance of protecting biodiversity and defending 'farmers collective rights in the context of climate change' is recognized.

rights. Critics of climate-ready seeds patents thus do not contend that property rights *per se* are detrimental to achieving climate justice. They also do not explicitly challenge the premise that increasing food production is a necessary adaptation strategy, and that genetically engineered seeds can be used to that end.²³ The criticism is instead directed at the way in which property rights are distributed that may undermine principles of justice. The two broad conceptions of climate justice in discourses on climate-ready seeds focus on a market-based, productivist account, on the one hand, and a rejection of the market-based approach in the form of a distributive account, on the other. However, the critical discourse seems more fixated on attaining a fairer distribution in ‘rights’, than in the benefits of this adaptation policy and ultimately in achieving justice; and, perhaps more importantly, explaining what climate justice even means.

4.2 Nuances in the concept of climate justice obscured through the use of ‘rights’

The application of intellectual property rights to seeds is an important part of the commodification and privatization of food, which can be considered a ‘capitalist’, market-based approach. Those who promote climate-ready seeds as part of adaptation policy invoke a productivist account of climate justice in line with a market-based approach. They hold that patent rights are necessary incentives to develop these seeds and work towards tackling the injustices caused by failing crop yields in the face of climate change. Critics of climate-ready seeds reject this market-based solution and argue for a more distributive account of climate justice. They consider the way in which this adaptation strategy is monopolized by corporations to constitute the real injustices. Despite a different conception of climate justice, these actors also invoke ‘rights’, mainly the right to food and farmers’ rights. The quest for achieving climate justice seems to have become a tug of war of rights. In this struggle for

²³ These arguments are based on subtleties. Although there is a great deal of criticism against the application of patent rights on living things, such as plants and seeds, this is not the criticism that is foregrounded in these discourses. The dominant response from critics is to claim other forms of (proprietary) rights over seeds, as an opposition to strong corporate patents. The same goes for the need to increase food production. This is a big point of contention, but does not appear to be the prevalent argument in these critical discourses.

distribution of rights, the importance of identifying and understanding nuances in conceptions of climate justice seems to be obscured. The distributive account of climate justice has become focused on distribution of rights, rather than distribution of real benefits.

The extensive use of 'rights' to counter corporate patents and realize climate justice implicitly accepts the application of intellectual property rights on seeds. Farmers' rights and the right to food would not be classified as 'intellectual property' rights in the way that patents are. Nevertheless, the use of these rights signals an intention to distribute the control, use, and benefits from climate-ready seeds more equitably. Control and use over seeds and their benefits can be seen as a form of ownership, as a form of claiming rights over intellectual property. Some underlying assumptions are hardly questioned, including whether we need to increase food production to achieve climate justice and whether we need patented seeds to achieve higher crop yields. If climate justice movements intend to reject such market-based solutions, then they must start by articulating the interpretation of climate justice that they use and distinguish it clearly from other understandings of the same term.

In a short opinion piece in *Nature* about the complexity of climate justice (Sovacool, 2013, 960), the author writes that:

[...] climate justice is about shades of grey, rather than being black or white. Justice is a series of negotiated compromises that seek to manage trade-offs, maximize gains, and minimize losses, but it can never eliminate losers entirely.

In this 'series of negotiated compromises', (intellectual property) rights seem to have become the measure of gains and losses. Discussions about climate-ready seeds have, in my view, become too focused on distributing *rights* instead of explaining clearly what climate justice means and how this could best be achieved.

The concept of climate justice is relevant for different accounts of climate-ready seeds. The way in which it is employed in efforts to move beyond market-based solutions to climate-induced hunger, however, will not be effective unless a more specific definition of climate justice is provided. Does achieving climate justice mean reshuffling ownership rights over seeds, so that farmers and indigenous populations can also claim their share of intellectual property rights? Does it entail recognizing everybody's right to food? Or does it entail a serious challenge to the market-based system, that goes beyond a discussion about 'rights'? These questions must be addressed in clear articulations of the aims and ends of invoking climate justice.

5 Conclusion: justice, property rights & adaptation law

The starting argument that I make in this paper is that the notion of climate justice is broad and open to interpretation, and therefore used by different participants in climate change discourse and for different purposes. I explored different uses of the term climate justice through discourses on climate-ready seeds as a proposed adaptation strategy. Promoters of climate-ready seeds invoke climate justice to justify the need to develop these seeds and to justify the application of patent rights as necessary incentives for investments in their development. Many NGOs, civil society organizations, and other critics contend that climate-ready seeds lead to injustices, and they employ a different account of climate justice to reject this adaptation strategy. The conclusion I draw is that the majority of the debates on climate-ready seeds that employ language of climate justice centre on the question of distribution of rights. What kind of justice is envisioned and how this is expected to be achieved through a redistribution of rights remains unclear.

The brief overview of climate justice movements illustrated that dominant movements seek to move beyond market-based solutions – such as patented climate-ready seeds – and towards move food sovereignty, which includes better distribution of the benefits from adaptation strategies, such as increased food production. Critics of climate-ready seeds often present the corporate patent applications on these seeds as being in contradiction with the concept of climate justice. However, the manner in which they seek climate justice draws heavily on other forms of proprietary rights, most notably farmers' rights and the right to food. The notion of private ownership over seeds and other evident 'market-based solutions' are not challenged. Rather, the monopoly of seed corporations – or Gene Giants – is criticized. This direction taken by climate justice movements in discourse on climate-ready seeds does not challenge 'capitalist' or 'market-based' solutions. Instead, it contributes to reinforcing the idea that seeds and crops can be subject to intellectual property rights, and that a redistribution of rights will lead to climate justice. It blurs the distinctions in very different uses of the term climate justice, as illustrated in this paper through contradictory accounts of climate-ready seeds.

I am sympathetic to the idea of climate justice and believe that it is important in addressing the impacts of climate change to keep the needs of those most affected at the heart of the discussions. However, to effectively try to attain climate justice, it must at least be clear what is understood by this concept. Actors in invoking the concept of climate justice may benefit from

being more aware of the – unintentional – consequences of their use of rights language in undermining their own ends. Ultimately, climate justice should mean much more than a tug of war over rights.

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