

# How does the Corporatisation of Agriculture Contribute to Global Environmental Injustices?

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## Abstract

*This article argues that the corporatisation of agriculture creates and reinforces environmental injustices at a global scale. A review of peer-reviewed literature reveals that global agricultural businesses do not promote food security or benefits for the poor and expose the world's poorest farmers to disproportionate risks. This situation is not just from a Rawlsian perspective. Injustices arise from the capitalist pursuit of profit, power imbalances and the separation of production and consumption in a globalised world. Popular suggestions for alleviating the injustices discussed in this paper do not address these underlying causes of injustice. A more just food system may require fundamental and profound changes to how we produce and value food.*

## I. Introduction

The sustainability and adequacy of food production and distribution depends on maintaining the integrity of a complex social-ecological system that supports life on Earth. Global agribusinesses are key actors in the global food system. These businesses claim to interact with other actors and the environment in such a way that promotes food security. However, in this essay I will counter these claims, arguing that global agribusinesses create and reinforce global environmental injustices through their business models and actions.

Firstly, a Rawlsian conception of justice and the nature of global agribusinesses will be introduced. Then, I will explain how corporatised agriculture hinders food security and propagates injustice. Corporatised agriculture does not allow just access to food, seeds or land and exposes poor people to disproportionate risks. I propose that these injustices are a product of power imbalances, the capitalist pursuit of accumulation and the globalised form of today's food system. Based on this argument and, primarily, peer-reviewed academic literature, alterations and alternatives to the current food systems model will be suggested.

## II. Theoretical Considerations

Much of the discourse about global hunger is framed in terms of ensuring that the world's poor and hungry are able to access food.<sup>1</sup> Actions to reduce hunger will be those that benefit those who have the least access to food. However, global food security is more commonly considered an issue of equality and achieving a minimum level of wellbeing.<sup>2</sup> Everyone, including future generations, deserves access to adequate food.

These discourses are in line with the basic thrust of two parts of a Rawlsian notion of justice. According to Rawls, actions are just when they firstly maximise benefits for those who have the least and secondly ensure the protection of certain basic rights.<sup>3</sup> This is an appropriate conception of justice for considering food systems because there is an upper limit on the quantity and quality of food required to live well. It is not necessary to improve access to food for those who are adequately nourished to the same extent that it is necessary to improve access to food for those who are starving. This essay will discuss whether globally corporatised agriculture satisfies a right to food and benefits those who have the least.

Framing this question as one of global environmental justice thus places the focus on farmers and the poor in developing nations. This essay will also consider the intergenerational aspect of justice. The sustainability of the food system is important because our current actions influence the capacity of future generations to meet their needs for food. While corporatised agriculture also raises opportunities and concerns for present-day farmers and consumers in developed countries,<sup>4</sup> these are less relevant to my Rawls-derived global justice perspective.

## III. The Nature of Global Agribusiness

Currently, global food systems are permeated by and dependent on global agribusinesses, such as Monsanto, DuPont, Dow, Bayer, Syngenta and BASF.<sup>5</sup> These corporations provide and control seeds, chemical fertilisers and biocides

<sup>1</sup> Stephen Scanlan, 'Feeding the Planet or Feeding Us a Line? Agribusiness, 'Grainwashing' and Hunger in the World Food System' (2013) 20 *International Journal of Sociology of Agriculture Food* 358.

<sup>2</sup> Carmen G Gonzalez, 'Genetically modified organisms and justice: the international environmental justice implications of biotechnology', (2007) 19 *International Environmental Law Review* 592.

<sup>3</sup> Derek Bell, 'Environmental justice and Rawls' difference principle' (2004) 26 *Environmental Ethics* 296.

<sup>4</sup> Mary K Hendrickson and Harvey S James, 'The Ethics of Constrained Choice: How the Industrialization of Agriculture Impacts Farming and Farmer Behavior' (2005) 18 *Journal of Agricultural and Environmental Ethics* 269–91; Emily Eaton, 'Contesting the Value(s) of GM Wheat on the Canadian Prairies' (2011) 16 *New Political Economy* 501–21.

<sup>5</sup> Gonzalez, above n 2, 603; Silvia Ribeiro and Hope Shand, 'Seeding New Technologies to Fuel Old Injustices' (2008) 51 *Development* 496.

that are the product of their research and development. The production of genetically modified organisms (GMOs) designed to withstand biocides and producing biocides themselves are examples of technological advancements pursued by agricultural corporations. The patenting of seeds and the push to expand the production of biofuels are examples of market strategies pursued by agribusinesses.<sup>6</sup>

By patenting products and directing research towards products that will be marketable to wealthy, large-scale farmers in developed countries, these corporations make substantial profits.<sup>7</sup> It is widely acknowledged that profit is the primary goal of global agricultural corporations.<sup>8</sup> These businesses operate in a global food system where food is traded globally and considered a commodity rather than a right.<sup>9</sup>

Yet, global agribusinesses portray themselves as alleviating global hunger and food insecurity. They argue that by developing agricultural inputs and seeds that increase agricultural yield they are helping to feed the planet's growing population.<sup>10</sup> This reflects an ecological modernisation paradigm that suggests that technology and markets will provide the solution to the world's social and environmental challenges.<sup>11</sup> The pursuit of both profit-maximisation and hunger-minimisation through ecological modernisation has profound implications for global environmental justice, as I will show below.

### III. Global Agribusiness and Increased Agricultural Production — Is This Global Justice?

Global agribusinesses and their supporters argue that industrialised, genetically modified (GM), large-scale and high-input agricultural systems are part of the solution to the challenges of global hunger and food security. The commonly cited benefits of this type of agriculture are listed in Table 1. In a comprehensive and

<sup>6</sup> Ibid 501; Scanlan, above n 1, 368.

<sup>7</sup> Ivica Kalam, 'Patent Rights to Genetically Modified Crops as a New Form of Colonialism' (2014) 136 *Filozofska Istrazivanja* 543; L LaReesa Wolfenbarger et al, 'GE crops: balancing predictions of promise and peril' (2008) 2 *Frontiers in Ecology the Environment* 154; Gonzalez, above n 2, 603; Alan B Bennett et al, 'Agricultural biotechnology: economics, environment, ethics and the future' (2013) 1249 *Annual Review of Environment and Resources* 267.

<sup>8</sup> Gonzalez, above n 2, 603; Keith Bustos, 'Sowing the seeds of reason in the field of the terminator debate' (2008) 77 *Journal of Business Ethics* 67; Ribeiro and Shand, above n 5, 498; Bennett et al, above n 7, 267; Scanlan, above n 1, 360, 365; Simon C Estock, 'Bull and barbarity, feeding the world' (2015) 12 *Cultural-International Journal of Philosophy of Culture and Axiology* 224.

<sup>9</sup> Scanlan, above n 1, 375.

<sup>10</sup> Ibid.

<sup>11</sup> Ibid 365.

Scale	Risk
Environmental benefits	<p>Reduced application of chemicals on crops that have been GM to withstand pests and herbicides</p> <p>Soil conservation as a result of reduced tillage</p> <p>Reduced carbon emissions as a result of fewer chemical applications, less tillage and avoiding land-use conversion from forest to agriculture</p> <p>Possibility to re-introduce GM versions of crop species that were discontinued because of their unsuitability</p>
Social and economic benefits	<p>Increased yield</p> <p>Increases in income with decreases in required labour for farmers using GM seeds</p> <p>Increases in aggregate welfare where adoption rate of GM farming is high</p>

Table 1: The benefits of adopting the practices and products produced by global agribusinesses.<sup>13</sup>

balanced literature review, Bennett et al<sup>12</sup> found strong scientific evidence that the adoption and farming of GMOs produces benefits.

Industrialised agriculture is purported to produce more agricultural output and thereby enhance food security. Indeed, the Green Revolution introduced high-yielding varieties of crops such as rice, wheat and maize and farming methods that are important to developing nations' food security.<sup>14</sup> However, today's agricultural corporations tend to focus on innovations that are profitable.<sup>15</sup> High yielding varieties are not the focus and stress-tolerant varieties that might help the poor are only emerging.<sup>16</sup> Consequently, the GM seeds marketed by global agribusinesses do not always produce increased yields.<sup>17</sup> If yields are increased,

<sup>12</sup> Bennett et al, above n 7.

<sup>13</sup> Ibid.

<sup>14</sup> Peter B R Hazell, 'Green revolution: curse or blessing?' (International Food and Policy Research Institute, 2002) <<http://oregonstate.edu/instruct/css/330/three/Green.pdf>>; Ribeiro and Shand, above n 5, 497.

<sup>15</sup> Kalam, above n 7, 543; Wolfenbarger et al, above n 7, 154; Gonzalez, above n 2, 603; Bennett et al, above n 7, 267.

<sup>16</sup> Bennett et al, above n 7, 267.

<sup>17</sup> Kristin Shrader-Frechette, 'Property rights and genetic engineering: developing nations at risk' (2005) 11 *Science and Engineering Ethics* 137; Ribeiro and Shand, above n 5, 498; Bennett et al, above n 7, 257.

the benefits are not captured by those who have the least and do not necessarily satisfy other criteria for justice.

There are three types of justice: distributive, procedural and recognition.<sup>18</sup> The first type of justice refers to how the positive and negative outcomes of decisions are shared.<sup>19</sup>

For increased agricultural yield to be considered just according to the Rawlsian perspective used in this essay, the benefit of yield increases would need to benefit those who have the least, such as small-holder and subsistence farmers in developing countries.<sup>20</sup> Some research shows that the benefits of GMOs have been shared equally between small-scale and large-scale farms, between developing and developed nations.<sup>21</sup> However, other research has found that developed countries' farmers, consumers and companies have captured most of the benefits from adopting agricultural technologies associated with global agribusinesses.<sup>22</sup> Furthermore, the increased production resulting from industrialising agriculture is rarely used to feed the poor. Rather, the production is used to feed livestock, generate biofuels, produce cash-crops for developed nations or wasted.<sup>23</sup> Market dynamics, consumer preferences and trade regulations also mean that any high yields from GM crops from small farms in developing countries are unlikely to be marketable on high-return markets.<sup>24</sup> Therefore, the benefits of high-yield agriculture are unlikely to be justly distributed.

The second type of justice is procedural justice. This is achieved when decision making is participatory, unbiased and based on adequate information.<sup>25</sup> In the case of corporatised agriculture, aggressive marketing<sup>26</sup> or intimidation<sup>27</sup> by global agribusinesses mean that procedural justice is often not upheld. Those who are supposed to benefit from increased agricultural yield are rarely consulted about how they would like their food security addressed.<sup>28</sup> Decisions have been

<sup>18</sup> Catherine Gross, *Fairness and Justice in Environmental Decision Making*, (Routledge, 2014) 37–8.

<sup>19</sup> Andreas Martin, 'Global environmental in/justice, in practice: introduction' (2013) 179 *The Geographic Journal* 100.

<sup>20</sup> Ana Komparic, 'The ethics of introducing GMOs into Sub-Saharan Africa: considerations from the Sub-Saharan African theory of Ubuntu' (2015) 29 *Bioethics* 607.

<sup>21</sup> Bennett et al, above n 7, 258, 261.

<sup>22</sup> Gonzalez, above n 2, 597, 604, 606, 610; Ribeiro and Shand, above n 5, 496; Bennett et al, above n 7, 261.

<sup>23</sup> Ribeiro and Shand, above n 5; Scanlan, above n 1, 358.

<sup>24</sup> D R Cooley, 'Transgenic organisms and the failure of a free market argument' (2004) 13 *Business Ethics: A European Review* 354–71; Wolfenbarger et al, above n 7, 158.

<sup>25</sup> Gross, above n 18, 37.

<sup>26</sup> Bustos, above n 8, 66.

<sup>27</sup> Estok, Simon C, 'Bull and barbarity, feeding the world' (2015) 12 *Cultural-International Journal of Philosophy of Culture and Axiology* 224.

<sup>28</sup> Scanlan, above n 1, 371.

made based on purely scientific and marketability grounds<sup>29</sup> by corporations, governments and global economic institutions removed from the everyday realities of food production and the consequences of their decisions. This does not represent procedural justice.

The third type of justice is recognition justice. Recognition justice involves ensuring that relevant cultures and values are recognised and included in decision making.<sup>30</sup> Komparic<sup>31</sup> convincingly argues that Western moral philosophy has taken an exceedingly central role in the GMO debate to the seclusion of locally specific moral systems. In addition, corporatised agriculture advances a single notion of development. This notion, based in advancing ecological modernisation and free markets, fails to acknowledge different local types of knowledge, forms of food production, values, ethics and norms.<sup>32</sup> Thus, many refer to corporatised agriculture as a new type of colonialism or imperialism.<sup>33</sup>

Therefore, even when corporatised agriculture produces benefits, they are neither justly distributed to, negotiated with nor inclusive of those who have the least. More agricultural production does not necessarily result in affordable, accessible and culturally appropriate food for the world's poor.<sup>34</sup> By assuming that more food is more valuable, like more money, the socio-cultural values of food and participation are overlooked, creating injustices. The next section turns to the risks and ill-distributed access to resources associated with corporatised agriculture and conceptualises these as global environmental injustices.

#### IV. Global Agribusiness and the Creation of Global Environmental Injustices

Unjust exposure to risks and ill-distributed access to environmental resources are two key categories of global environmental injustices.<sup>35</sup> The literature pertaining to global agribusinesses speculates that global agribusinesses create both these types of injustice.

Corporatised agriculture results in exposure to risk over several spatial scales. While risks are difficult to quantify and specify, some well-evidenced, oft-cited examples of key risks are listed in Table 2. Although Bennett et al<sup>36</sup> argues that criticisms of GMOs are in some cases unfounded and based on poor evidence,

<sup>29</sup> Wolfenbarger et al, above n 7, 159.

<sup>30</sup> Martin, above n 19, 100.

<sup>31</sup> Komparic, above n 20.

<sup>32</sup> Wolfenbarger et al, above n 7, 159.

<sup>33</sup> Scanlan, above n 1, 374; Kalam, above n 7.

<sup>34</sup> Scanlan, above n 1, 371.

<sup>35</sup> Gonzalez, above n 2, 592; Paul Mohai, David Pellow and J Timmons Roberts, 'Environmental justice' (2009) 34 *Annual Review of Environmental Resources* 405–30.

<sup>36</sup> Bennett et al, above n 7, 262.

there are many published criticisms of corporatised agricultural models that either produce or draw on strong empirical evidence.

The presence of a risk does not necessarily imply an injustice. Injustice arises when certain groups face a disproportionate risk compared with other groups.<sup>38</sup> In the case of corporatised agriculture, the risks are disproportionately borne by the poor, farmers and future generations. Shiva<sup>39</sup> has repeatedly drawn attention to the social and environmental consequences of corporatised agriculture on the poor in India. Ribeiro and Shand<sup>40</sup> cite the example of Argentina between 1998 and 2002. While the area of GM soybeans tripled, a quarter of farmers were forced out of business, traditional food supplies were undermined and malnutrition as well as rural poverty increased. Thus, the risks of industrialised agriculture threaten poor people's access to food.<sup>41</sup> As this is a fundamental right necessary for survival, corporatised agricultural models expose poor people to a disproportionately severe risk. Gonzalez<sup>42</sup> also argues that small farmers and developing countries are more affected by environmental risks and the risk of genetic pollution. Furthermore, the consequences of climate change, which are exacerbated by a dependence on industrialised agriculture, are disproportionately borne by poor people in developing nations.<sup>43</sup> Meanwhile, consumers and companies in developed nations benefit from others' exposure to risk. Thus, because corporatised agriculture places the burden of risk on those who generally have very little, corporatised agriculture is unjust at a global scale.

The corporatisation of agriculture also results in and exacerbates the inaccessibility of key environmental resources required to farm successfully. Firstly, global agribusinesses promote agriculture that relies on improved seeds. Due to the profit-driven nature of global agribusinesses, these inputs are patented and generally unaffordable to small-scale farmers who lack capital.<sup>44</sup> While some authors assume that seeds should be able to be patented,<sup>45</sup> Shrader-Frechette<sup>46</sup> argues that if the commonly accepted version of Locke's property law was used, seeds should not be allowed to be patented because the seeds do not wholly constitute the result of someone's labour. Thus, global agribusinesses unjustly control resources that ought to be available to those who have the least.

<sup>37</sup> Hazell, above n 14; Shrader-Frechette, above n 17; Gonzalez, above n 2; Ribeiro and Shand, above n 5; Bennett et al, above n 7; Scanlan, above n 1; Estok, above n 27.

<sup>38</sup> Mohai, Pellow and Roberts, above n 35; Martin, above n 19.

<sup>39</sup> Vandana Shiva, 'The future of food: countering globalisation and recolonisation of Indian agriculture' (2004) 58 *Futures* 715–32.

<sup>40</sup> Ribeiro and Shand, above n 5, 498.

<sup>41</sup> Gonzalez, above n 2, 610.

<sup>42</sup> *Ibid* 611.

<sup>43</sup> James Goodman, 'From global justice to climate justice? Justice ecologism in an era of global warming', (2009) 31 *New Political Science* 501.

<sup>44</sup> Scanlan, above n 1, 371; Gonzalez, above n 2, 642.

<sup>45</sup> Bustos, above n 8.

<sup>46</sup> Shrader-Frechette, above n 17.

Scale	Risk
Personal and Farm	<p data-bbox="409 357 941 432">Exposure to chemicals (herbicides and pesticides marketed and sold by global agribusinesses) and the resulting long-term health impacts</p> <p data-bbox="409 464 941 539">Contamination of non-GM crops with GMOs and the liability to aggressively-pursued, expensive prosecution should this be discovered</p> <p data-bbox="409 571 810 592">Resistant weeds, pests and gene spreading</p>
Community and Region	<p data-bbox="409 624 941 676">Loss of knowledge and practice of traditional farming practices</p> <p data-bbox="409 708 799 729">Monotonisation of diets and malnutrition</p> <p data-bbox="409 761 897 782">Decline in soil health, crop quality and water purity</p> <p data-bbox="409 813 941 866">Heightened vulnerability to unexpected or extreme environmental or economic conditions</p> <p data-bbox="409 898 941 951">Economies of scale, unemployment, indebtedness and loss of land causing the widening of social inequalities</p>
Intergenerational and Global	<p data-bbox="409 975 941 1027">Reduced biodiversity, compromised soil health and undermined capacity of the biosphere to support life</p> <p data-bbox="409 1059 941 1112">Reduced resilience of the global food, economic and environmental systems to shocks</p> <p data-bbox="409 1144 941 1182">Increased use of fossil-fuel derived or dependent inputs, leading to climate change and associated risks</p>

Table 2: Risks associated with adopting agricultural practices and products produced by global agribusinesses.<sup>37</sup>



Corporatised agriculture also has consequences for the accessibility of land. Proponents of land sparing argue that intensive farming preserves natural land cover and biodiversity for future generations while producing more food<sup>47</sup> and is, by extension, just. These arguments, somewhat suspiciously, play into the hands of and mirror the claims made by global agribusinesses. However, the large-scale, intensive farms often dispossess small-scale farmers of the land that supported their livelihoods,<sup>48</sup> exacerbating hunger and poverty.<sup>49</sup> In addition, increased profit from agricultural intensification has, in some cases, resulted in the expansion of agricultural land to the detriment of natural areas,<sup>50</sup> depriving future generations of those environments and the services they support. When global agribusinesses and the agricultural models they support make it difficult for poor farmers to access seeds and land that support their livelihoods, existing inequalities are exacerbated in the name of profit.<sup>51</sup> Again we see non-monetary value of goods and environmental services being undermined by the commodification of food.

As a whole, the actions of global agribusinesses can be conceived as slow violence as conceptualised by Nixon.<sup>52</sup> That is, agribusinesses' actions slowly deplete the resources that people need to survive: their cultural connection to the land, the health of their environment and the health of themselves. In a highly emotive essay Estok<sup>53</sup> recognises the violence of corporatised agriculture by likening the patenting and commodification of seeds to 'bombs or weapons'<sup>54</sup> and 'genocide'.<sup>55</sup> Recognising the violence in this situation illustrates just how severe the injustices discussed are and their true impacts on marginalised people all over the world.

## V. Why do Global Agribusinesses Promote Injustices?

This essay has established that corporatised agriculture does not promote justice through increasing agricultural yields and promotes injustice through unjust exposure to risk and restricting access to environmental resources. The roots of these injustices are hard to pinpoint because they are embedded in a complex global system. The following section will propose that the globalised food

<sup>47</sup> Ben Phalan et al, 'Minimising the harm to biodiversity of producing more food globally' (2011) 36 *Food Policy* S62–71.

<sup>48</sup> Scanlan, above n 1, 373; Gonzalez, above n 2, 606.

<sup>49</sup> Ribeiro and Shand, above n 5, 496.

<sup>50</sup> Teja Tschardt et al, 'Global food security, biodiversity conservation and the future of agricultural production' (2012) 151 *Biological Conservation* 56.

<sup>51</sup> Scanlan, above n 1, 373.

<sup>52</sup> Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Harvard University Press, 2011).

<sup>53</sup> Estok, above n 27.

<sup>54</sup> Ibid 224.

<sup>55</sup> Ibid 230.

system, couched in capitalism and a grand power imbalance, creates these injustices.

Injustices stem from imbalances of power. The corporatisation of agriculture concentrates power in a small number of global agribusinesses.<sup>56</sup> This concentration of power allows agribusinesses to dictate a development and policy agenda without consulting those who have very little.<sup>57</sup> With this power, agricultural corporations can pursue profit unfettered by regulations or the requirement to be socially, environmentally or morally sound.

The pursuit of profit is in line with the capitalist system that underpins the global food system. Capitalism is inherently unjust and exploitative<sup>58</sup> and global agribusinesses are repeatedly found to be putting profit before people and planet.

Bunker<sup>59</sup> theorises that transportation infrastructure and logic powers the exploitative accumulation of capital. This argument is highly relevant to the global food system. The global transport system allows the production of food to take place far away from food consumption. Concurrently, it is profitable, and therefore in the interests of global agribusinesses, to concentrate production in certain areas and to try to overcome geographic and temporal constraints on production by using technology. This is an extension of Malm's<sup>60</sup> argument that that the concentration of production in space and time is driven by the desire for and necessity of capital accumulation. The concentration of production far away from consumption has important implications for the perpetration of injustices.

When consumer demand is met by production far from where consumption occurs, it is difficult for society to recognise the impacts of their consumption. Nixon<sup>61</sup> argues that because slow violence is geographically and temporally distributed, it becomes harder for the global citizenry to publicise and respond to the perpetration of injustices. Furthermore, Scanlan<sup>62</sup> argues corporations use 'grainwashing' to portray ecologically harmful behaviour as ecological stewardship in their advertising, allowing them to continue to perpetrate violence without a backlash from society substantial enough to undermine profits. As such, injustices become a

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<sup>56</sup> Ribeiro and Shand, above n 5, 496; Scanlan, above n 1, 357; Shrader-Frechette, above n 17, 137.

<sup>57</sup> Ribeiro and Shand, above n 5, 498; Komparic, above n 20, 610.

<sup>58</sup> Scanlan, above n 1, 365.

<sup>59</sup> Stephen G Bunker, 'How ecologically uneven developments put the spin on the treadmill of production' (2005) 18 *Organization Environment* 38–54.

<sup>60</sup> Andreas Malm, *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming* (Verso, 2016).

<sup>61</sup> Nixon, above n 52.

<sup>62</sup> Scanlan, above n 1.

product of what Hornborg<sup>63</sup> terms a 'decontextualising' model. Decontextualised food production means that connections between production and consumption are broken to the extent that resource flows become destructive. Based on historical patterns and geographical necessities, these resource flows have tended to be destructive to developing countries, their people and their environments while those in more developed countries reap the benefits of the destruction.<sup>64</sup> Therefore, the injustices of globally corporatised agriculture can be understood as the product of the pursuit of profit, the concentration of power and separation of production and consumption, facilitated by transport and the scale of the global food system.

## VI. Alternative Approaches to Global Food Systems

What are the alternatives for continuing agricultural production and advancing food security in a way that more appropriately benefits the poor and does not reinforce inequalities? Three key themes emerge from the literature.

Firstly, as hunger is caused by poverty and the ill-distribution of an already adequate supply of food, trade regulations and domestic production incentives need to be adjusted to support the poor.<sup>65</sup> Arrangements should be developed and changed in line with the geographic, social and cultural context of particular places and based on consultation with communities.<sup>66</sup>

Secondly, because injustices arise from power imbalances and the distancing of food production from consumption, changes to the structure of the food system should support small-scale and local farming.<sup>67</sup> Giving farmers and local communities more power over their own production, land and resources is the basic tenant of the global push for food sovereignty.<sup>68</sup>

Thirdly, a more ecologically-sensitive approach to farming is required.<sup>69</sup> Ecologically friendly, diverse, locally-based, culturally-appropriate farming is not mutually exclusive from technologically-enabled and research-driven farming.<sup>70</sup> The goal of such reformed farming would be adequate production for, by and near those who need it, rather than merely increased production. As such, lower-intensity farming will produce benefits for those who have the least without necessarily

<sup>63</sup> Alf Hornborg, *The Power of the Machine: Global Inequalities of Economy, Technology, and Environment* (Altamira Press, 2001) 184.

<sup>64</sup> Hornborg, above n 62 37; Bunker, above n 58.

<sup>65</sup> Scanlan, above n 1, 358; Estok, above n 27, 225; for a detailed explanation of possible regulatory reforms, see Gonzalez, above n 2.

<sup>66</sup> Komparic, above n 20, 612.

<sup>67</sup> Hornborg, above n 62, 185; Shiva, above n 39.

<sup>68</sup> Ribeiro and Shand, above n 5, 501.

<sup>69</sup> Shiva, above n 39; Gonzalez, above n 2, 595; Tscharrntke, above n 50; Bennett et al above n 7.

<sup>70</sup> Bennett et al, above n 7, 271.

causing the footprint of agriculture to expand or undermining the complex social-ecological system which the sustained integrity of our food system depends upon. This approach would begin to acknowledge and protect the values of food and resources that are poorly translated into monetary values.

However, none of these commonly suggested directions directly and fully address the key problem identified in this essay, that food and seeds are currently treated as commodities used for the accumulation of capital. This shows how embedded this way of thinking is. I suggest that reforms that decouple food and profit, re-framing food as a right and responsibility and require consumers to play a greater role in the food system may be required to truly address the injustices caused by the corporatisation of agriculture. The numerous practical and ethical implications of such a suggestion ought to be explored through future research.

## VII. Conclusion

This essay has outlined the global environmental justice consequences of a food system controlled largely by global agribusinesses whose primary goal is capital accumulation. It has been argued that global agribusinesses do not promote justice in line with a Rawlsian conception of justice. Corporatised agriculture does not protect a basic right to food, imposes disproportionate risks on poor people in developing nations and unjustly restricts access to land and seeds. I have used existing theories to argue that corporatised agriculture creates injustices because it propagates power imbalances, obscures the connection between consumption from production and is geared towards capital accumulation. In the future, food systems should focus on improving hungry peoples' access to the already sufficient global food supplies and taking a more local, small-scale and ecologically sensitive approach to farming. However, given the inherent problems of capitalism, it remains to be seen whether a truly just food system is possible without decoupling food from profit and fully acknowledging the non-monetary values of food.

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