

*Decarbonisation and World Poverty:
A Just Transition for Fossil Fuel Exporting Countries?¹*

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INTRODUCTION

If dangerous climate change is to be avoided, it is clear that the majority of the world's fossil fuel supplies cannot be burned (McGlade and Ekins 2015).² If temperature rises in excess of 2°C are to be avoided, for example, an estimated two thirds of proven fossil fuel reserves must go unused by 2050 (International Energy Agency 2012). To these reserves must be added all anticipated supplies which are not yet commercially available. If a more cautious temperature target is chosen, the proportion will be still higher. On one calculation, *any* production from new oil and gas wells will be incompatible with a 1.5°C target (Global Witness 2019). Either way, the global economy's dependence on the world's most valuable commodity (Bridge and LeBillon 2006) for energy must be radically curtailed.

This simple fact throws up a series of important questions. *Politically*, the most pressing question is how to ensure that the world adheres to the available 'carbon budget' by leaving most supplies unexploited. The earliest attempts to curtail fossil fuel use aimed to depress demand, for instance by way of carbon taxes, or compulsory cap-and-trade mechanisms. But the effectiveness of such policies is modest when their coverage is patchy, and when carbon-intensive industries can therefore shift to 'emission havens' elsewhere. As a result, political attention has increasingly shifted to measures which would restrict the *supply* of coal, gas and

oil. For as long as the owners of fossil fuel reserves continue to extract them and offer them for sale at a suitably low price, demand will tend to emerge somewhere – not least in the emission havens mentioned above. If so, emerging alternative energy sources may be priced out of the market (Muttitt 2016). Restricting supply therefore comes to look like an important part of the global mitigation effort. In principle - since there are far fewer extractors of fossil fuels than there are consumers, and since extraction is immobile - supply ought to be easier to monitor and control than demand (Collier and Venables 2014).

But an important *moral* question is how to manage the losses attendant on the ‘decarbonisation’ of the global economy – assuming that decarbonisation eventually occurs. Leaving the oil – and the gas, and the coal – in the soil will have major consequences for a number of actors. Unless they manage to diversify first, fossil fuel companies may have billions of dollars wiped off their stock market valuations. Thousands of people employed in the oil, gas and coal industries could lose their jobs. Indeed a whole series of people in peripheral industries – right down to people running cafes and general stores in mining towns – might do so too. Shareholders, and ordinary pension holders, might be exposed to significant losses, given that many investment funds maintain large holdings in fossil fuel industries (Carbon Tracker Initiative 2013). Finally - and of particular interest from the point of view of debates on global justice – fossil fuel exporting countries (FFECs) stand to lose out on a significant source of revenue. In many countries fossil fuel exports make up a very substantial share of national income. On one estimate, the overall revenues foregone when these assets are ‘stranded’ could total tens of trillions of dollars globally (Kantha 2016:6). Moreover, some of the greatest losses are likely to occur in sub-Saharan Africa, North Africa, and Latin America (ibid:7), not least since developing country exporters are particularly likely to have untapped – or even unexplored – supplies. For instance, it has been calculated that 73% of the coal found in Central and South America, and 90% of African supplies, must go unburned if we are to

meet a 2°C target (McGlade and Ekins 2015). African countries, meanwhile, may have to leave their entire unconventional gas reserves underground (Jakob and Hilaire 2015:150).

The attendant losses in opportunities for economic growth could be dramatic (Jakob and Steckel 2014). By way of comparison, the impact would far exceed that of a cessation of aid to the developing world. Annual oil revenues flowing to Nigeria alone outstrip the Official Development Assistance received by the whole of Sub-Saharan Africa by a factor of almost three to one.³ To be sure, fossil fuel wealth has often turned out to do disappointingly little for the ordinary citizens of developing countries, and in some cases it has locked countries into cycles of bad governance and civil strife (Wenar 2016). Moreover, there are public health problems associated with the combustion of fossil fuels – and especially coal – and for that reason the transition beyond fossil fuels will deliver important benefits (Petrovic, Madrigano and Zaval 2014). But the fact remains that for many countries, other routes to economic growth are thin on the ground, and those which are available will require time and money to access. Even if a transition beyond fossil fuel exports will be a positive development for many countries in the longer term, the short term effects could include economic shocks that poor countries are ill-equipped to weather.

Should outsiders seek to reduce or compensate these lost opportunities? Their representatives have repeatedly answered that question in the affirmative. Nigeria, Venezuela and a number of Gulf states have requested compensation for ‘adverse economic impacts’ arising from decarbonisation (Depledge 2008:15). Saudi Arabia, often the self-appointed representative of oil exporters, has complained that a global shift away from fossil fuels will seriously set back the economic interests of oil exporters, and has argued that, rather than placing the economic burden of climate mitigation onto the shoulders of citizens in exporting countries, the world ought to help them find alternative sources of income (Mouawad and Revkin 2009).

Securing political buy-in for the transition beyond carbon may require outsiders to take such claims seriously. ‘Only a global climate deal that compensates losers,’ it has been argued, ‘can impose strict limits on the use of fossil fuels in the long term’ (Jakob and Hilaire 2015:151). The UNFCCC accordingly indicates that Parties shall give ‘full consideration’ to the impact of mitigation measures on countries ‘whose economies are highly dependent on income generated from the production, processing and export...of fossil fuels.’⁴ But are FFECs *entitled* to compensation? In this article I will begin by sketching one argument which might suggest that they are. This argument holds that when our expectations are thwarted by public policy, then (subject to conditions to be specified) compensation is morally required. Though I will not reject this argument as a general principle, I will nevertheless suggest that there are a number of reasons for doubting that it can securely justify compensation for FFECs.

Nevertheless, I will argue that the international community *is* obliged to offer assistance (if not ‘compensation’) to at least some FFECs, and that these FFECs are entitled to receive that assistance. The reason, however, has more to do with a broader concern for serious disadvantage than it does with climate justice per se. If our question is why FFECs – or, to be precise, their citizens – are *entitled* to assistance, the answer lies with a right to development which is possessed (if not always enjoyed in practice) by the impoverished of the world more generally. The right to development is potentially jeopardised when some fossil fuel assets must go unexploited, and this triggers a duty of those who are more advantaged to assist in opening up alternative paths towards development.

Framing the argument in this way has two major implications. First, it usefully clarifies that the obligation to assist (poor) fossil fuel exporting countries is but one instance of a duty the advantaged hold to promote the development of the world’s poor *in general*. Meeting the demands of FFECs may well be especially important, politically speaking, if a global climate deal is to stick: as we have noted, the prospects for securing binding emissions reductions

without addressing the claims of FFECs appear rather bleak. But while this makes the claims of FFECs politically pressing, it does not mean that they have greater moral weight in and of themselves: the claims of other poor countries to assistance may be just as strong, and as a result there is reason to favour pro-development policies which would benefit poor countries more broadly, rather than poor FFECs alone. Second, the argument usefully makes clear that the advantaged do not owe the same assistance to FFECs which are wealthy, or which have already engineered post-carbon development paths of their own. It is entirely possible that in practice making progress towards binding mitigation efforts will also require extending assistance to wealthy FFECs.⁵ But if our question is whether wealthy FFECs are *entitled* to assistance – or whether outsiders *owe* them that assistance – the answer is in the negative. That, it seems to me, is the right conclusion.

In the next section I will sketch the argument from thwarted expectations, and note the difficulties which it faces in defending – and specifying – the compensation which might be owed to FFECs. The subsequent section introduces the right to development, and illustrates its significance for the case of poor FFECs. Assuming that this right can generate a duty on the part of the advantaged to promote development, I then examine how the costs of enacting that duty ought to be allocated. Finally, I will assess several rival mechanisms for assisting disadvantaged FFECs.

THWARTED EXPECTATIONS

Unless they are purely symbolic, all political policies will have an impact on the prospects of the people subject to them. At times, those impacts are judged to require some form of redress. The argument for making amends might be especially compelling in cases where public policy

changes in such a way as to leave some citizens exposed to losses. Imagine a government announcing that five years from now, it will construct a major highway between the capital city and Eastville, a smallish town to the East. Four and a half years later, it declares that it has in fact changed its mind and will now build a road out to the West instead. In the meantime people might have built houses, and established new businesses, in Eastville in the reasonable hope that jobs would follow hot on the heels of the highway's construction. Those investments now look like bad ones. Might the investors concerned have some kind of moral claim against the government?

Specifying just when redress is owed is difficult, and the question is the occasion of significant philosophical disagreement. But one influential school of thought seeks to make progress by emphasising the normative salience of what we might call 'legitimate expectations.' People will often develop plans about how their lives will unfold, and invest time and money embarking on projects which would be thwarted if the legal or political background changes. At least in cases in which those projects are not obviously unjust in themselves, our (psychological or material) investment might be thought to count for something. The upshot might be a *prima facie* duty for institutions such as governments not to disrupt those projects lightly (Buchanan 1975, Goodin 1995), and to offer compensation in at least some cases where disruption nevertheless occurs (Brown 2017). Call this latter idea the *principle of compensation for thwarted expectations*.

The thwarted-expectations approach might be thought to have immediate salience for the transition away from carbon. When it comes to climate justice, some attention has been given to the question whether individual consumers, whose lifestyles will be disrupted when governments introduce policies designed to bring about a low-carbon economy, have any claim to redress (Meyer and Sanklecha 2014). Much less attention, if any, has been paid to the expectations of other categories of people who might experience losses if climate policies

eventually bite – such as those whose livelihoods are currently dependent upon the sale of fossil fuels. But as we have noted, an embargo on fossil fuel extraction could have very dramatic consequences, and some of the world’s poorest people would be among those affected. The future of an industry which (however flawed) may represent their best chance for economic growth could be severely disrupted or destroyed. If sufficiently weighty, the expectations of fossil fuel exporters might justify compensation from the international community for those who own stranded assets.

I will suggest that such a conclusion is in fact difficult to defend. To be clear, I do not claim that expectations never have normative weight, or that authorities should never compensate those whose expectations have been thwarted. For public policy to encourage but then thwart expectations may often be objectionable, and there is a plausible argument that an economy conducive to investment will require at least some safeguards for investors who make good-faith efforts to put their assets to productive use. My claim is a more specific one. It is that the argument from the normative weight of expectations faces three serious, and together probably insuperable, challenges *en route* to the conclusion that FFECs are owed compensation when they are required to leave fossil fuel assets in the soil.

First of all, note that it does not appear that any and all expectations give rise to good claims to compensation as soon as they are thwarted. To the contrary, it is often thought that the frustration of expectations gives rise to a claim for compensation only in cases where a *public authority* has *encouraged* but then frustrated expectations on the part of its members. Compensation is not owed just whenever someone’s expectations are thwarted, but rather when those expectations have developed reasonably in response to some directive or incentive knowingly offered by a proper political or legal authority (Brown 2017:10), with discussion often focusing on the institutions of the state (Meyer and Sanklecha 2014: 372, Buchanan 1975). This is why I do not have a claim to compensation against a man in a bar if it is *his*

suggestion that a road might be built which encouraged me to open a business in Eastville. To date, debates on legitimate expectations have largely assumed a domestic setting, where public authorities proliferate (Meyer and Sanklecha 2014; Brown 2017). In cases where individual governments have encouraged expectations among their citizens – including workers who have moved to coal towns under the promise of forthcoming state investment, say, or by offering longstanding subsidies to fossil fuel consumers - a claim for compensation against the government is at least intelligible.⁶

But it is less certain that FFECs can make a good case for redress from the international community as a whole, for it is not clear which international authority has served to encourage their expectation to be able to continue to extract and sell fossil fuels. If it is to proceed, the argument must invoke a more diffuse set of actors. Perhaps multinational corporations have encouraged FFECs to spend money exploring for oil. Such an argument would have limited prospects, in fact, since for the most part poor countries have outsourced exploration, and its costs, to corporations themselves. If anything, FFECs might have a duty to compensate such corporations. Or perhaps international financial institutions have encouraged fossil fuel-based development paths by agreeing to lend money for the development of extractive projects (though the World Bank ceased lending for coal projects in 2010 (Elliott 2017), and ceased lending for oil and gas exploration during 2019). Finally, we might note that the international legal doctrine of ‘permanent sovereignty’ grants states wide discretion over resource use. If so, states might develop a reasonable expectation to be able to continue to extract domestic resources as they see fit.

Perhaps some such argument could be made. But even if it can, a second objection will cut deep. It is widely accepted that in order for expectations to have moral weight, they must be compatible with justice. The expectations of a habitual thief to be able to continue his life of crime, for instance, may have no moral weight at all (Meyer and Sanklecha 2014:371). After

all, his life of crime necessarily involves infringing the rights of others. A citizen's expectations that she will enjoy the fruits of her own labours upon her retirement, by contrast, are much more weighty – provided that she has paid her taxes and earned her wages according to more or less just background conditions within the economy.⁷ In cases where the activity in question necessarily violates the most basic rights of others, our judgements should be relatively clear: if a farmer is shown to be causing considerable harm to a nearby town when he dumps effluent into the local river, few would think that he is owed compensation when the law requires him to desist.

The FFEC case is rather more complex than the example of the thief. The thief produces nothing of value, and merely infringes upon the rights of others. The reason that constraining fossil fuel production is so challenging is that it *does* produce some genuine benefits, such as employment, government income, and the means of meeting basic energy needs. We are here rather closer to our farming example, in which something of value is produced, but where it is produced by putting unsustainable pressure on a shared resource. Nevertheless, even if it is true that supplying the energy needs of the impoverished means that some fossil fuel production will be permissible for the foreseeable future (Shue 2014), fossil fuel extraction on anything like its current scale is impermissible because it will impose severe harms on both present and future people. Even if extractors are not *solely* responsible for the harms associated with climate change, they represent an important and necessary link in the causal chain emanating in climate change (Moss 2016). In extracting beyond safe limits they are, we might say, *enabling* widespread and serious harms (Barry and Øverland 2017, chapters 5 and 6). This is also highly relevant to any argument based on states' long-standing right to extract domestic resources. Although the right of states to do so has been proclaimed in a number of international legal instruments, international law is *also* clear that any general right to exploit domestic resources must be constrained so that it does not generate severe transboundary environmental harms.⁸

When such harms nevertheless come to pass, compensation may be required for those affected by them (Bratspies and Miller eds 2006). But international law does not entertain the idea that we should pay compensation, on the basis of thwarted expectations, to those who are commanded to stop generating the harms in question. And neither should it. If they have claims for assistance, they will be grounded on the fact that they are left without adequate opportunities, and not on the idea that they should be compensated for desisting from doing the impermissible.

Third and finally, given that it construes what is owed to FFECs in terms of compensation for thwarted opportunities, the argument from expectations must select some plausible benchmark for calculating the relevant losses. But it is highly uncertain what this benchmark ought to be. Should countries be compensated for the money they have spent building up extractive infrastructure which will now be left to rust? Or for the value of unexploited fossil fuels supplies themselves? If the latter, we will require a reliable method for calculating the relevant total value. One thorny question here is going to be whether compensation ought to be awarded on the basis of known reserves or likely supplies. Calibrating compensation on the basis of known reserves will favour more established participants in the fossil fuel industry - which have been able to invest greater time and money in exploration - and disadvantage newer entrants which may have enormous unproven supplies. But awarding compensation on the basis of *likely* supplies is obviously epistemically challenging.

Even if we could settle that problem, using market value as the relevant benchmark for compensation also appears problematic. Should market value *now* be used as the basis for compensation (even though many supplies are not yet ready to be exploited), or must compensators try to guess what the market price would have been at such a point as the relevant supplies came to market? The latter option appears more satisfying in one way, but faces the

problem that market value fluctuates dramatically, not least since in a highly ‘imperfect’ market the price of commodities such as oil is often significantly inflated or deflated as a result of rent-seeking cartel behaviour (Bridge and LeBillon 2006, chapter 3). As a result, calculating future market value is challenging to say the least.

But in any case, using market value to capture losses is dubious. For, as many climate scholars have noted, the market price of fossil fuels comprehensively fails to internalise the externalities associated with fossil fuel use. The market value of fossil fuels is artificially inflated by our failure to require either producers or consumers to pay the full social and environmental costs associated with fossil fuel exploitation (Coady et al 2015). Calculating what the market value of fossil fuels *ought* morally to be is difficult. But a proper reckoning would presumably generate the conclusion that the value of much of the world’s fossil fuel supplies ought to be much lower than it is today. If so, that would need to be taken account of in any plausible argument for compensation.

In this section I have sketched the argument from thwarted expectations, and raised three objections to it. None of these undermine the general idea that agents who encourage the development of expectations can owe some form of redress if they then act to thwart those expectations. Rather, they combine to suggest that the FFEC case is not a promising one when it comes to applying such a principle. The objections I have considered raise both practical problems and fundamental moral issues. The measurement problem is a practical one and may well be tractable along the lines I have suggested, though if so the implications for the claims of fossil fuel exporters would be significantly revisionist. The more profound challenges to the argument from expectations are posed by the first two objections. There might well be ways of resolving what we could call the agency problem, which suggests that expectations are only normatively weighty when they arise in response to signals sent by some valid public authority.

But the most weighty objection, in my view, is the one which questions the normative weight of expectations to perform an act when doing so would inevitably generate an injustice (and in this case, a serious one). Alexander Brown has recently suggested that this objection does not present any difficulty. On his account, the principle of compensation is to be restricted to cases whereby expectations are generated in response to the edicts of governments or their agencies. But once that restriction is in place, it does not matter (to the claim for compensation) whether the act we now expect to be able to perform is compatible with justice or not. All that matters is whether government agencies were responsible for creating the expectation in question (Brown 2017:10). Now, it is far from clear that Brown would consider the agency problem satisfied in the FFEC case. But if it could be satisfied, the injustice problem might seem to recede. There may well be, on Brown's account, cases where frustrating an expectation is required by justice – and good cases, presumably, would include those where acting on an expectation would inevitably involve infringing the most basic rights of innocent others. In those cases, we might want to say that there is a 'pressing public interest' in not honouring such expectations. But even if so, the expectations in question retain a 'residue' of legitimacy, which may in turn 'trigger the question of compensation or remedy' (ibid: 26). But this, it seems to me, is an error. In a case where an action would inevitably and foreseeably impose serious harms on innocent others, a government *ought not* to create expectations that such an act will be permissible. It ought not, for instance, to tell citizens that if they damage the property of the members of a religious minority, it will turn a blind eye, or still less incite them to do so; and it ought not to tell citizens that if they commit serious and predictable transboundary environmental harms, it will neglect to enforce their moral duty to desist, still less support those activities in word or deed. If it nevertheless does so, it will plausibly owe redress *to the victims* of those unjust acts, whether this takes the form of apology or compensation (for that reason, it is perfectly conceivable that multinational corporations, or international financial institutions,

might have duties to compensate for climate loss and damage, if they are plausibly seen as contributors). But it is far less clear why it would have even a *prima facie* reason for compensating the would-be *perpetrators* of those injustices. For those agents could never justly have brought their projects to fruition.⁹

THE RIGHT TO DEVELOPMENT

The reason ‘stranding’ fossil fuel assets should be of concern, I suggest, is that doing so removes from countries – and their citizens – a key path towards economic growth, and hence at least potentially towards advancing the wellbeing of ordinary citizens. Even if fossil fuel-based development is fraught with difficulties – exposing countries, in many cases, to elite capture and civil conflict – alternative development paths are notably thin on the ground. Accessing consumer markets for high-end manufactured products, or entering the service sector, would likely represent more propitious development paths. But given scarcity of domestic capital, and the weakness of productive infrastructure, for many countries the extraction of valuable resources along the ‘enclave’ model is the only game in town (Alexeev and Conrad 2009).

But decarbonisation threatens to stymie these opportunities. If countries have a *right* to development, then the requirement to leave domestic fossil fuels unexploited can place an obstacle in the way of the fulfilment of that right, and potentially a serious one. The idea of a right to development is capable of attracting support from a number of prominent philosophical views about justice and is also well supported, as I will show, in international law (see also Moellendorf 2014). In one important sense, support for the existence of such a right should be conditional. Assuming that individuals are the fundamental unit of moral concern, the

development of countries is valuable insofar as it promotes the wellbeing of the *individuals* within those countries. Ideally, then, a country's right to development will be accompanied by duties on the part of its government to ensure that the fruits of development are widely shared.

Development should be seen as conditionally valuable in a second sense too. We should be sceptical about the notion of any purported right to develop *indefinitely*. Justice certainly requires that people are able to lead fulfilling lives, free from the constraints of poverty. For egalitarians, it may demand opportunities for 'catch-up development' by way of which countries can grow their way out of inequality. But it is not clear that justice demands continual growth in income and wealth. According to Rawls (1999:107-8), the idea that economic growth is to go on indefinitely was actually unattractive. What mattered, on his view, is that people have what they need to lead a decent life, and to maintain effective institutions. Above and beyond that, they might well prefer – and might be right to prefer – greater shares of other goods, such as liberty. Development, we can say, is conditionally valuable insofar as it allows people to secure the prerequisites of a tolerably good life – or, on the egalitarian view, insofar as it allows people to escape relative disadvantage – and not necessarily as an end in itself (Moellendorf 2014, chapter 5).

Third and relatedly, development is a valuable goal insofar as it is *sustainable*. When it erodes the ability of future generations to live decent lives of their own, the endless pursuit of 'development' might come to be a curse. But in principle, development can be rendered compatible with our obligations towards future generations. To summarise: development is often very important, insofar as it enables *individuals* to escape *disadvantage*, and insofar as it is *sustainable*.

Such ideas gain explicit support within international law. The right to development was famously proclaimed by the United Nations Declaration on the Right to Development of 1986, and reaffirmed in the Vienna Declaration of 1993.¹⁰ These instruments are clear that

development is valuable insofar as it secures benefits for individuals: ‘The human person’ is the ‘central subject’ and the ‘beneficiary’ of development,¹¹ and the right is fulfilled when countries have opportunities for economic growth capable of improving the standard of living of their members. Moreover all individuals count: development aims at ‘the constant improvement of the wellbeing of the entire population.’¹² They concur, moreover, that development must be sustainable: the right ‘should be fulfilled so as to meet equitably the developmental and environmental needs of present and future generations.’¹³ Finally, these documents are also clear that the catch-up development of the poorest countries (and their citizens) ought to be the world’s priority. As the 1986 Declaration puts it, ‘Sustained action is required to promote more rapid development of developing countries.’ Significantly, whilst development is principally designated as the duty of the local state, it is explicitly noted that the international community has obligations to facilitate the development of the poorest societies: in securing the advancement of developing countries, ‘effective international co-operation is essential in providing these countries with appropriate means and facilities to foster their comprehensive development.’¹⁴

These instruments are, to be sure, elements of ‘soft’ rather than hard law, and the duties they give rise to are not currently legally binding or enforceable. States have, in practice, often failed miserably to effectively promote the right to development of the world’s poorest countries, with most of them missing, for instance, the United Nations target of delivering 0.7% of GDP in foreign aid. Indeed wealthy states have arguably done much to undermine the ability of the least developed states to catch up economically (see below). But it is still significant that the right to development, alongside a duty of wealthier countries to promote poorer countries’ exercise of that right, has been widely accepted at the international level. The principle has major implications for the way in which we should think about contemporary global challenges such as climate mitigation. If countries have a right to development, the need to avoid

dangerous climate change ought not to undermine the ability of states to exercise that right, at least when it comes to countries whose citizens experience poverty or comparative disadvantage (Shue 2014, Moellendorf 2014). Indeed participants in global climate negotiations have for some time now recognised just this. The Paris Agreement explicitly notes ‘the intrinsic relationship that climate change actions, responses and impact have with equitable access to sustainable development and eradication of poverty.’¹⁵ The Agreement accordingly pledges to ‘take into consideration...the concerns of Parties with economies most affected by the impacts of response measures’ (where ‘response measures’ are actions taken in order to reduce the extent of climate change), and specifically aims ‘To promote the mitigation of greenhouse gases while fostering sustainable development.’¹⁶ If mitigation must not exacerbate the struggle to escape poverty, then poor FFECs must receive international assistance lest their fight against poverty be undercut. Although leaving fossil fuels unburned is morally necessary, the *costs* of doing so should not be borne by the poor. If measures to restrict supply are put in place, they ought to be accompanied by side-policies designed to avoid losses in overall opportunity.¹⁷ As I will argue in the next two sections, this leaves much unexplored, including, not least, how the duty of the international community to support development is best enacted, and who ought to bear the cost. But if satisfactory answers can be given to those questions, we will have an argument for assistance to FFECs which avoids the problems encountered by the thwarted expectations view.

THE DUTY TO FOSTER DEVELOPMENT

International law stipulates that there is a duty on the part of the international community to foster the development of the least advantaged. If what I argued in the last section is correct,

the right to development is best understood as a right of countries to bring their citizens out of poverty or disadvantage, rather than a right to economic growth without limit. The duty of the international community will therefore be a duty to assist countries with endemic disadvantage, and not to assist countries whose citizens are already comparatively advantaged. Likewise, it will apply to countries with relatively meagre development opportunities, as opposed to countries with accessible alternative development options in place already. Some wealthy exporting countries already possess the wherewithal to successfully diversify their own economies in the event of decarbonisation. Many of them, for instance, have set up Sovereign Wealth Funds as vessels for resource revenues, with the capital invested in stocks and real estate on the global market. In some cases this already promises a steady and significant stream of income for generations to come (Armstrong 2013). In the case of many poor countries – which are also often relatively new entrants to the fossil fuel trade - decarbonisation threatens to cut away a prominent route out of poverty, however, and towards catch-up development, whilst alternative development paths are scant. It is with respect to the citizens of these communities that the duty to foster development is owed.

International law does not, however, specify how the costs of enacting this duty ought to be allocated. Here a number of factors might be thought morally relevant. In cases where poverty is created or sustained as a result of purposive human activity, outsiders will plausibly be obliged to take on costs in proportion to their role in causing poverty to come about. If they have, for instance, contributed to the emergence or continuation of poverty by arming or lending money to dictators, by supporting wanton environmental destruction, or by maintaining skewed terms of international cooperation, then they ought, other things being equal, to bear a greater share of the costs of responding to it. Such a principle will have a limited reach, however, since there will be many cases where relevant conditions are not met: those causally involved in the perpetuation of injustices may have left the scene, or may not meet basic

conditions for the attribution of moral responsibility, such as the presence of reasonable alternatives. Moreover some instances of disadvantage may not be attributable to any human agent in the first place. When the conditions for attributing causal responsibility are not met, we ought to allocate burdens in line with the capacity to bear them. Outsiders should bear at least moderate costs in the effort to help people escape serious disadvantage, whether or not they have contributed to that disadvantage (Barry and Øverland 2017).

Some people, however, may have the intuition that communities which have in the past extracted large quantities of fossil fuels ought to bear greater burdens when it comes to supporting the development of poor FFECs. To be precise, that argument might be thought compelling when it comes to extraction since roughly the late 1980s, when the causes and impacts of climate change became widely known. Taken by itself, the combination of contribution- and capacity-based principles I have suggested would not appear to connect the quantity of costs to be borne with patterns of extraction. There are, it seems to me, two possible ways of connecting costs with past emissions. One argument would hold that the *beneficiaries* of post-1980s extraction ought, *as* beneficiaries, to bear greater burdens. If the extraction of some agents has exceeded the constraints imposed by justice, the benefits accruing may represent a form of unjust enrichment. Those who now hold those benefits – even if they came by them innocently – might therefore be obliged to give them up in favour of those who cannot now justly pursue their own extraction projects as a route out of poverty. This argument, though, raises a puzzle. The puzzle is why those who have benefited from unjust past emissions ought to assist FFECs in particular, as opposed to others who find themselves in poverty in general – and, indeed, why it should be the beneficiaries of unjust emissions, rather than the beneficiaries of injustice in general, who ought to bear additional costs. In cases of contribution to injustice, there is a close and plausible connection between causally bringing about, or enabling, a harm and the duty to bear the costs of improving the position of its victims. But it

is less clear why the mere fact of being a (possibly innocent) beneficiary of someone else's unjust act is sufficient to justify an agent bearing greater than average burdens (Lippert-Rasmussen 2017). For this reason, it is worth noting that a second argument is available which would justify greater burdens for high-extractors without making controversial assumptions about the normative significance of the receipt of tainted benefits. This second argument would point out that it is those who have extracted disproportionate quantities of fossil fuels in the post-1980s period who have *made it the case* that poor FFECs must now refrain from extracting their own reserves in order to avoid the creation of serious harms. So long as those extractors have been aware of the likely limits on sustainable extraction, and insofar as they have possessed alternatives which would not have left them mired in poverty themselves, they bear at least some moral responsibility for the situation – of limited development opportunities – in which poor FFECs now find themselves. The contribution-based argument can, therefore, in principle justify greater burdens being placed on the shoulders of high-extractors. In cases where they have raced to maximise their own share of the available carbon budget, this will have the plausible implication that wealthy FFECs ought to bear a substantial share of the costs incurred by poor FFECs which cannot now turn to extraction for development.

I also want to make two additional clarifications about the nature of the duties in question. First, to describe duties to facilitate development, or duties to assist in development, is not to commit ourselves to the view that these duties are charitable in nature. Plausibly the duties in question will rather be duties of *justice*. That appears clear when agents have wrongly contributed to the perpetuation of poverty. But this conclusion is no less likely in the case of arguments from greater capacity. Duties based upon capacity can be just as stringent and demanding as duties based on contribution to disadvantage (Barry and Øverland 2017). A number of theories of justice give us grounds for believing that outsiders can have duties of

justice directed towards people in the developing world (see e.g. Caney 2005, Miller 2007, Pogge 2002).

Second, the duty to facilitate the development of the world's poor is grounded on a general right of the world's disadvantaged to live lives free of serious disadvantage, and not upon a specific right to develop without end, and still less a right to exploit domestic natural resources regardless of the consequences. The reasons outsiders have for caring about the development opportunities of poor fossil fuel-rich countries are the same reasons they have for caring about the meagre opportunities faced by poor countries which never possessed significant supplies of fossil fuels in the first place. The fact that progress may be required in the FFEC case if a global climate agreement is going to stick should not blind outsiders to the more quotidian urgency of the crushing disadvantage encountered by many other people across the world. When investigating mechanisms to reduce the disadvantage faced by poor FFECs, there is reason, therefore, for preferring mechanisms which would improve the position of the world's poor in general. But although the duty is *grounded upon* a general right to develop one's way out of disadvantage, the bearers of that duty may be obliged to bear greater costs in supporting some agents' development when compared to others. Those who have contributed to the perpetuation of poverty – for instance by making it the case that some agents cannot participate on a fair footing in international trade, or extract their own fossil fuels – may have their obligation to bear costs at least partly directed towards those specific agents even if they also bear a more general capacity-based obligation to support *anyone's* development out of poverty.

ACTING ON THE DUTY

In this paper I have developed two arguments which might in principle speak in favour of providing assistance to countries which leave untouched the fossil fuel supplies in their territories. The first argues from the normative weight of the expectations which are potentially thwarted by the kinds of policies which would be necessary to decarbonise our economies. Though I have not sought to undermine the claim that the thwarting of expectations can sometimes generate compelling claims for compensation, I have identified a number of serious obstacles the argument faces in the case of FFECs. I have also developed a second argument, which proceeds on the basis of the right to development – a right the exercise of which, in the case of developing countries, often requires support from the international community. The exercise of that right can be thwarted if the burdens of mitigation – including the development opportunities foregone when fossil fuel reserves are left unexploited – fall upon the shoulders of the poor.

The differences between the two arguments should be clear. Whereas the first argument frames the issue as one of compensation for actors whose expectations have been thwarted, the argument from the right to development leans on a duty which the international community owes to the developing world in general. The argument from the right to development, I have argued, gives the most straightforward support to the idea that assistance is owed to developing countries which are required, by the need for climate stabilisation, to leave fossil fuel supplies untouched. The assistance owed to such countries – and, ultimately, their citizens – is an instance of a general duty owed to *all* of the world's poor, to support their escape from poverty or disadvantage, although some of us may, for reasons of contribution to disadvantage, have reasons to bear additional burdens in supporting the development of some agents in particular. How, though, might such a duty be acted upon? What mechanisms are available to those who would seek to assist poor FFECs to escape poverty in a world where some of their most valuable assets must not be exploited?

Which fossil fuels to leave in the soil?

Climate stability is compatible with *some* fossil fuel supplies being exploited. But to date, little attention has been paid to the important question of *which* reserves should be exploited and which should not. If the concern is to prevent the need for mitigation from harming the development opportunities of the disadvantaged, one potentially neat solution would be to allow countries with endemic disadvantage to continue extracting their fossil fuels, and to forbid wealthier countries from doing so. It might be thought that ‘the least advantaged have a special claim to extract existing fossil fuel reserves,’ based not only on their disadvantage but also, perhaps, upon the fact that they tend to be relatively recent entrants to the industry and therefore have had less time to avail of the opportunities for development that it offers (Caney 2016:29).

Such a policy would help to limit the costs, from the point of view of development, of the transition beyond fossil fuels. It would not, in all likelihood, avoid any such costs, however – because the proportion of the world’s supplies held by poor countries probably exceeds the proportion which can safely be burned. If so, additional policies would be required in order to support alternative development routes for the disadvantaged. Furthermore, although the idea of giving poorer countries special extraction rights has some promise, it is not certain that the levels of advantage of exporting countries, or their erstwhile development opportunities, ought to be the *only* considerations when extraction rights are allocated. There are at least three other factors which deserve attention. First, it makes environmental sense, other things being equal, to extract those fuels whose use is associated with the least damaging emissions (ibid:24), and indeed which is least strongly correlated with other environmental harms such as particulate air pollution. This speaks in favour of leaving coal, in particular, unexploited even when large supplies can be found in very poor countries. Second, it also makes sense to limit other negative

environmental impacts associated with the extraction process. This consideration speaks in favour of exploiting ‘conventional’ rather than ‘unconventional’ fossil fuel supplies, and in favour of continuing to tap the huge and still-productive wells of the Persian Gulf rather than digging new wells elsewhere. Third, efficiency speaks in favour of extracting where it is cheapest to do so, and using existing extractive infrastructure rather than investing in new exploration and infrastructure elsewhere. This consideration too, taken by itself, suggests that a large proportion of any permissible extraction should take place in the Gulf, where extraction costs are the world’s lowest (Bridge and LeBillon 2006:1). If these three considerations have any weight, they will establish that the proposal to extract supplies from the poorest countries alone is too blunt. That proposal has some merit, but it is far from a panacea (Caney 2016).

Global transfers

Perhaps what justice requires is that the wealthy send poor FFECs money to offset the loss of (current or potential) income arising from fossil fuel exports. A number of scholars of global justice have proposed global taxes and transfers which would shift funds in the direction of the disadvantaged (Brock 2008), which might fit the bill. Alternatively, official aid might be scaled up in order to offset the lost income.

Such proposals may be some way from fruition at present. But international bodies already exist whose brief is to channel funds to countries performing important roles in mitigating climate change, and in some cases they have already raised large sums of money to support that effort. One key example is the Global Environment Facility, established by the World Bank in 1991 and empowered to disburse funds for conservation and climate projects. In principle, the Facility could channel funds towards poor countries affected by the stranding of fossil fuel assets. Alternatively, the Green Climate Fund, established under the UNFCCC framework in 2010 and charged with raising a significant share of a \$100 billion per annum

budget by 2020, could pick up the baton. Its brief is to administer funding for mitigation and adaptation projects in developing countries, and in practice its chief focus has been the roll-out of green technology. But there is no reason in principle why its mandate could not be expanded to fund a just transition beyond carbon in a broader sense, by channelling funds to poor countries which agreed to leave fossil fuel supplies untouched. This too would help to sustain lasting cuts in global emissions, both in developing countries and elsewhere. One way of doing so would be to fund programmes such as the (ill-fated) Yasuni ITT initiative, under which Ecuador promised to leave the oil under the Yasuni National Park un-extracted, so long as outsiders shared with them the opportunity costs of doing so. Although the Initiative was controversial, the underlying principle that outsiders should share in those costs is sound (Armstrong 2016). Indeed this is not the only way in which funds could, in effect, be channelled to countries with stranded assets. Under so-called ‘debt-for-nature’ swaps, developing countries which agree to preserve precious resources such as forests have had sovereign debts forgiven, providing much-needed economic respite. Whilst those initiatives are in many respects controversial, they have secured at least some valuable conservation, whilst easing the economic pressures which drive deforestation and other forms of environmental destruction (Knicley 2012). In principle, there is no reason the same approach could not be extended to what we might call ‘debt-for-non-extraction’ swaps, in which debt forgiveness was provided to countries which agreed to strand fossil fuel supplies.

Enhancing other opportunities

The loss of income from fossil fuel exports is a setback for development precisely insofar as alternative development paths are thin on the ground, or difficult to grasp. But those losses would be reduced if opportunities for economic diversification were promoted. The international community might have a variety of means for doing so at its disposal. Most

significantly, perhaps, pro-development trade reform would reduce the dependence of poor countries upon exporting primary resources. Cutting back developed-world tariffs and subsidies on, for instance, food and textiles would significantly reduce the costliness of a shift away from fossil fuel exports, by opening up markets in which many developing countries might enjoy a comparative advantage. Indeed, given the association between dependence on fossil fuels and poor governance in many developing countries, a shift away from that dependence might result in advances in good government and accountability too. Though the transition may be long and difficult, a post-carbon future may in the end represent a boon for many developing countries.

Indeed it is not only the reduction of tariffs and subsidies which might usefully promote economic diversification in the developing world. Liberal economic theory suggests that one factor promoting catch-up development over time will be the diffusion of technology: as the fruits of technological development are spread across the world, poorer countries can engage in ‘imitative innovation,’ as developed countries themselves once did, and this will help them to open up more lucrative markets in consumer products. Nevertheless, the current regime of intellectual property rules has often served to stymie such technological diffusion. Developing countries must pay dearly in order to enjoy the fruits of innovation, and as a result their convergence with richer economies has once more been frustrated. There are good reasons, however, to believe that a just global economy would moderate its insistence on the rigorous protection of developed-world intellectual property, in order that catch-up development can become a reality (James 2009, chapter 12).

If the international community is genuinely interested in promoting the opportunities of poor countries to develop their way out of disadvantage, then serious efforts to reform barriers to economic diversification – whether this means the removal of barriers to trade, intellectual property reform, or both - are morally mandatory. Such reforms would support the

right to development of disadvantaged countries *in general*, and not only the right of countries with stranded fossil fuel assets. But the urgency of providing alternatives to fossil fuel exploitation makes such measures all the more important.

Which amongst these reforms should be favoured? There are several reasons for prioritising reforms in the final, ‘structural’ category. First, reforms in the first two categories fall prey to the objection that they would benefit countries with fossil fuel supplies but do nothing for countries without. By contrast, structural reforms would benefit all of the world’s poor. Second, transfers are prey to a specification problem, a variety of which also plagues the argument from thwarted expectations. A programme of transfers requires a calculation of how much each country should receive, and on what basis. But the grounds for making such calculations are relatively opaque. The structural reforms, by contrast, require no such calculations. Third, reforms to rules on trade and intellectual property would promote the autonomy of citizens of developing countries, rather than leaving them dependent on transfers from the developed world which often arrive late, more meagre than promised, or with strings attached. It is also worth noting that such structural reforms appear to be in the spirit of the demands made by FFECs themselves. Special extraction rights, cash payments, or debt forgiveness have not been foremost among the demands of these countries. For the most part, their request has been for assistance in diversifying their economies – that is, in opening up a viable economic path capable of securing citizens’ wellbeing in a post-carbon future (Barnett and Desai 2002:237; see also Depledge 2008).

Conclusion

Securing a safe climate for our planet will require a large proportion of the world’s fossil fuels to remain unburned. This will seriously impact on the development aspirations of fossil fuel exporting countries, many of which are relatively poor. It is likely that political progress will

demand that the international community acts to limit the impact of decarbonisation upon the development opportunities of exporting countries. But does justice *require* such action? Are fossil fuel exporting countries *entitled* to international assistance which would open up alternative development paths? In this article I have examined two arguments which might provide a positive answer to that question. In the end, I have argued, it is the importance of the right to development which provides the clearest and most persuasive answer. Assistance for poor exporting countries is not only politically urgent if extraction is to be limited. It is also required by global justice.

¹ For comments on this paper I would like to thank Alex McLaughlin and Kieran Oberman, as well as audiences at the Universities of Edinburgh, Reading, Southampton, Warwick, and the Institute for Future Studies Stockholm.

² McGlade and Ekins assume, as do most commentators, that Carbon Capture and Storage techniques cannot be rapidly and radically scaled up.

³ The former exceeded \$70 billion in 2013, whereas the latter reached \$26 billion. (<https://www.oecd.org/newsroom/aid-to-developing-countries-rebounds-in-2013-to-reach-an-all-time-high.htm>).

⁴ *United Nations Framework Convention on Climate Change* (1992), Article 4.

⁵ As Caney (2014) has argued, rapid mitigation may require concessions to be extended to those who are currently exacerbating the climate crisis. Whilst these concessions may not be justified by principles of fair ‘burden sharing,’ they can in principle be justified on the basis of ‘harm avoidance.’

⁶ Note that direct price subsidies are typically offered by fossil fuel extracting countries to their own domestic consumers (Coady et al 2015). I am assuming, therefore, that they will not support an *international* duty to compensate.

⁷ For Rawls (1971:310-15), expectations are ‘legitimate’ when they arise against a background of just institutions protecting principles such as fair equality of opportunity and the difference principle. In less ideal circumstances, the moral weight of expectations is much less certain.

⁸ For a philosophical defence of that conclusion, see Shue 2014, chapter 7. For broader scepticism about the claim that states are entitled to ‘freely dispose’ of domestic resources in the first place, see Armstrong (2017).

⁹ In suggesting that governments should not create expectations in cases when acting on them will *foreseeably* cause serious harms, I am not ruling out the possibility of compensation in cases where it transpires that acting on expectations would cause initially *unforeseen or unforeseeable* harms. If extractors were encouraged to invest in extractive infrastructure before the climatic consequences of fossil fuel use became clear, it may be that good claims for compensation can be made. What I say in this section should be taken, therefore, to apply to decisions taken after awareness of climate change became suitably widespread.

¹⁰ The right to development had earlier been discussed in the UN Human Rights Commission's Resolution 4 (XXXIII) of 21 February 1977.

¹¹ *United Nations Declaration on the Right to Development* (1986), Article 2.

¹² *Ibid*, Preamble.

¹³ *Vienna Declaration* (1993), Part 1, Paragraph 11.

¹⁴ *Declaration on the Right to Development*, Article 4. For useful commentary on these instruments, see Sengupta (2002).

¹⁵ United Nations Framework Convention on Climate Change, *Paris Agreement*, Preamble.

¹⁶ *Ibid*, Article 6, Article 4.

¹⁷ Might it matter *how* supply-side restrictions occur – whether they take the form of multilateral or regional agreements to curb supply, or voluntary unilateral constraints, for instance? Elsewhere I have argued that outsiders can be bound by duties of justice to share in the costs of leaving fossil fuels in the ground, even if these take the form of voluntary constraints (such as in the Yasuni ITT initiative, discussed below). The widely-accepted principle that when allocating the burdens of mitigation, it would be unfair to load climate burdens onto the shoulders of the poor, should not only be applied to 'active' mitigation measures. It should also cover the costs, including the opportunity costs, of leaving fossil fuels in the ground. If so, it does not seem to make a moral difference whether states take pro-active measures to commit to leaving fossil fuels un-extracted (for instance by way of national caps on extraction, or decisions not to open new mines or wells), or whether they are compelled to do so (see Armstrong 2017).

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