

Republic of the Philippines Commission on Human Rights

CHR-NI-2016-0001 In Re: National inquiry on the impact of climate change on the human rights of the Filipino People

Statement of Resource Person, Henry Shue

1) Preliminary Matters

1.1 My name is Henry Shue. I was awarded a Ph.D. in Political Philosophy on 16 October 1970 by Princeton University.

1.2 I am a Senior Research Fellow at the Centre for International Studies of the Department of Politics and International Relations, University of Oxford; Professor Emeritus of International Relations, University of Oxford; and Senior Research Fellow Emeritus, Merton College, University of Oxford. I have previously served on the faculties of the University of North Carolina, Wellesley College, the University of Maryland, and Cornell University. A copy of my current *Curriculum Vitae* is attached to this statement.

1.3 My relevant research publications include *Basic Rights* (Princeton University Press, 1980; 2nd edition, 1996); *Climate Justice: Vulnerability and Protection* (Oxford University Press, 2014); 12 articles on moral and political issues concerning climate change since 2014, including ‘Responsible for What? Carbon producer CO₂ contributions and the energy transition’, *Climatic Change*, 144 (2017): 4, 591-596, on which I shall draw here today; and *Climate Justice: Integrating Economics and Philosophy*, co-edited with Ravi Kanbur (Oxford University Press, 2018). Details are on my attached *Curriculum Vitae*.

1.4 I was invited to be a resource person by Ms. Desiree Llanos Dee, Climate Justice Campaigner at Greenpeace Southeast Asia-Philippines, one of the petitioners in this national inquiry, by a letter of 23 February 2018. I immediately accepted as the principles at the foundation of this petition have been at the centre of my research for a quarter of a century. I regret that duties in my home state of Virginia in connection with the US Congressional election on 6 November 2018 prevent me from appearing in person as I had intended and am grateful for your willingness to allow me to participate by means of Skype. I avoid using Power Point because it allows the qualifications, subtleties, and careful details of the arguments to drop out. I will be delighted to answer any questions.

1.5 In the following I concentrate on a single moral responsibility, the urgent responsibility to stop inflicting harm in violation of basic rights. I leave aside here many further responsibilities.

2) Substantive Matters

2.1 Moral wrong, not natural tragedy

One of the most authoritative assessments of the adequacy of the climate measures pledged by individual countries in Paris 2015 - the Nationally Determined Contributions [NDCs] - finds that only seven countries have committed themselves to actions that fulfill their national responsibilities. One of those special seven countries that is doing as much as it can reasonably be expected to do is the

Philippines.¹ It might appear tragic that a country that, unlike the wealthiest and most powerful countries, is doing what it can to limit climate change should be the victim of increasingly ferocious cyclones (made more powerful by the rising temperature of the ocean) and other elements of so far uncontrolled climate change. But it is not a tragedy, because the worsening climate is not unavoidable, and it is not natural. Uncontrolled climate change is the result of human decisions, decisions to act and decisions not to act. The results of these decisions are moral wrongs, not natural tragedies. The agents who have made those decisions are morally responsible for the consequences in the lives of others affected and ought to be held accountable for the wrongs brought about by their choices.

I have been asked to explain the basis of the moral responsibility of the forty-six firms named in the petition, to which I will refer as the “carbon majors”, for the suffering and damage caused to the people of the Philippines by the worsening climate driven by the carbon emissions from their fossil fuels. The causal responsibility of these (and other) carbon majors, which is the empirical basis for their moral responsibility, has been demonstrated by scientists.² But not all causal responsibility brings moral responsibility. In order for an action or omission that causes damage to be morally wrong, that action or omission must avoidably violate a moral principle as it brings about its effects.³ Are the carbon majors avoidably violating any moral principles by continuing to rely on products and services the use of which forces the climate to change by injecting carbon dioxide into the earth’s atmosphere?

2.2 No harm without necessity

Yes, and the explanation of why the behaviour in which these firms persist is wrong is clear, simple, and relatively uncontroversial, because it relies only on one of the most fundamental and widely accepted moral principles. Every society in the world accepts the principle, “do no harm”. Within medical ethics, for example, it is known as the ancient Hippocratic Oath: “first, do no harm”. Obviously it is impossible in reality to do literally no harm. Reality is too complex for perfect compliance, and necessity can be a perfectly acceptable excuse for doing harm when, but only when, the harm is in fact unavoidable. Amputating a person’s limb harms the person, but if that is in fact the only way to save her life, the amputation can be justified as a matter of necessity. This is why the principle really means: do no avoidable harm, or do no harm without necessity.⁴

2.3 Violation of basic rights

The carbon emissions from the combustion of fossil fuels are inflicting increasingly monumental harm throughout the planet by undermining the stability of its climate. Climate stability is a pre-condition for the conduct of productive agriculture, the provision of safe housing, and the other minimal economic activities that underlie civilized society. Indeed, if one accepts that there are

¹Climate Action Tracker, “Countries”, September 2018.

<https://climateactiontracker.org/countries/>

² B. Ekwurzel, J. Boneham, M.W. Dalton, R. Heede, R.J. Mera, M.R. Allen, and P.C. Frumhoff, ‘The rise in global atmospheric CO₂, surface temperature, and sea level from emissions traced to major carbon producers’, *Climatic Change*, 144 (2017), 179-190. doi:10.1007/s10584-017-1978-0.

³Hereafter I will abbreviate ‘action or omission’ to ‘action’ in order to be less clumsy, but I will always include choices not to act, as well as choices to act, as actions.

⁴This principle is explained more fully, and given context, in H. Shue, ‘Responsible for What? Carbon producer CO₂ contributions and the energy transition’, *Climatic Change*, 144 (2017), 591-596. doi:10.1007/s10584-017-2042-9. Copy attached to this statement.

human rights, the most severe harm that anyone can do is to undermine the most fundamental human rights. I have sketched some of the philosophical arguments that show that the most fundamental rights include rights to subsistence.⁵ Professor Simon Caney has very briefly provided a lucid explanation of specifically how climate changes violate the right to life, the right to health, and the right to subsistence.⁶ And Mary Robinson has shown what these abstract philosophical concepts mean in concrete detail.⁷ But this Commission does not need to be informed about human rights, as it is already their guardian. The question here is: has the conduct of the carbon majors violated human rights in ways for which they are morally responsible by persisting in providing and employing fossil fuels in a form that generates carbon emissions that force the climate to change?

The answer, again, is: yes. At the risk of belabouring the obvious we can describe exactly how unexcused harm is brought about by the current handling of fossil fuels. No agent, individual or corporate, has the right to inflict harm on other persons unless she has some adequate excuse. This is overwhelmingly important when the harms are violations of basic rights. There was a time when only a relatively few scientists understood the dynamics of the earth's climate sufficiently well to see that atmospheric accumulation of carbon dioxide from the combustion of fossil fuels would disrupt the state maintained by those dynamics over the last 10,000 years of human flourishing.⁸ In those circumstances it would have been appropriate to offer an excuse of necessity based in ignorance: 'we could not then have avoided forcing change in the climate system and thereby harming many persons because we did not then know that this disruption and its resultant harms were the effects of our actions'. In the first half of the twentieth century ignorance would have been a plausible defense against a charge of wrongfully doing harm by selling or using fossil fuel for combustion with no control over its carbon emissions.

2.4 Excuse of ignorance disappears

In the second half of the twentieth century this excuse quickly collapsed. First, the carbon majors employ large numbers of the world's best scientists, and the corporate scientists understood the dynamics of climate change, and informed their management about it, long before many governments (with fewer resources to pay top scientists) appreciated what was happening.⁹ Second, the facts about climate change became sufficiently well known during the 1980s that by the end of that decade the Intergovernmental Panel on Climate Change had been created and negotiations leading toward the *Framework Convention on Climate Change* of 1992 were underway.¹⁰ However, the behaviour of the carbon majors did not change in response to their knowledge that they were the primary contributors to

⁵Henry Shue, *Basic Rights* (Princeton: Princeton University Press, 1980; 2nd ed., 1996).

⁶Simon Caney, 'Climate change, human rights and moral thresholds', in Stephen Humphreys (ed.), *Human Rights and Climate Change* (Cambridge: Cambridge University Press, 2010), 69-90, especially at 75-82.

⁷Mary Robinson with Caitríona Palmer, *Climate Justice: Hope, Resilience and the Fight for a Sustainable Future* (London and Sydney: Bloomsbury, 2018).

⁸The basic dynamics were published by Irish scientist John Tyndall in the 1860s - see Mike Hulme, *Why We Disagree about Climate Change* (Cambridge: Cambridge University Press, 2009), 42-45.

⁹Neela Banerjee, 'Exxon's Oil Industry Peers Knew about Climate Dangers in the 1970s too', *Inside Climate News* (22 December 2015).

<https://insideclimatenews.org/news/22122015/exxon-mobil-oil-industry-peers-knew-about-climate-change-dangers-1970s-american-petroleum-institute-api-shell-chevron-texaco>.

Retrieved 18 October 2018.

¹⁰Dale Jamieson, *Reason in a Dark Time: Why the Struggle Against Climate Change Failed — and What It Means for Our Future* (New York: Oxford University Press, 2014), at 11- 60.

climate change. In fact, one of the shocking findings in Ekwurzel, *et al.* is: “Strikingly, more than half of all emissions traced to carbon producers over the 1880-2010 period were produced since 1986, the period in which the climate risks of fossil fuel combustion was well established”.¹¹ Even if ignorance had excused the carbon majors during some of the period before 1986, it certainly has not been available as an excuse in the last thirty years when more than half the damage has been done - and continues unabated. Ignorance of climate effects could not have been the real explanation of the behaviour of the carbon majors in any case because, when the ignorance was eliminated, nothing in their behaviour changed. They continue to acquire fossil fuel to be burned with the uncontrolled release of carbon pollution and to explore aggressively for more and more supplies of fossil fuels to be burned in the same unsafe way.

2.5 Less harmful alternatives

What would have been the right response no later than 1986 and in all subsequent years? When someone who has been providing a product (or service) that she believed was safe to use discovers that, on the contrary, the product is dangerous as currently used, she has fundamentally two choices: substitution or modification. She cannot simply persist in business-as-usual as if nothing has changed, as the carbon majors largely continue to do to this day. Common-sense dictates that provision of the product cannot simply be immediately stopped if the product is needed for a vital function like the supply of [some] energy. Thus, the substitution or modification could not realistically have been instant. But when the harm being done is of the incomparable magnitude of undermining the physical pre-conditions of society as we know it, the substitution or modification ought to have been implemented as soon as possible with all deliberate speed, making use of all the resources that could possibly be made available. In the case of fossil fuel companies, resources could have been taken out of exploration to discover additional reserves of a product that it had then been realized could not be used safely and turned instead toward prompt substitution or modification. One or both alternatives could have been vigorously pursued decades ago. “The major investor-owned fossil fuel companies did not follow this path. On the contrary, they took essentially the opposite path, denying the reality of the problem of climate change, working to ensure that fossil fuels would remain central to global production and that emissions would continue unabated”.¹²

The choice between substitution and modification - or any combination of the two - was up to the carbon majors. Substitution - development of a safe alternative to fossil fuel - in this case would obviously have meant research and development on alternative energy. Vigorous R & D on energy alternatives with the vast resources available to carbon majors might well have brought far sooner the plummeting of prices for non-carbon energy that has occurred only recently, thereby avoiding much of the soaring carbon emissions of the last three decades. Some oil company executives now talk in their public relations campaigns about changing their firms from oil companies to ‘energy companies’. That choice to move toward safety for humanity was available decades sooner. The carbon majors decided not to take the safer choice, thereby imposing danger on all humanity, now and in future.

Modification, the other safe alternative, would have meant the development at scale of technologies for carbon capture so that if fossil fuel combustion continued, it would not continue progressively to undermine the stability of the established

¹¹Ekwurzel, *et al.* (note 2).

¹²P.C. Frumhoff, R. Heede, and N. Oreskes, ‘The climate responsibilities of industrial carbon producers’, *Climatic Change*, 132 (2015), 157–171. doi:10.1007/s10584-015-1472-5. Copy attached to this statement.

state of the climate system.¹³ Extremely little has been invested by the carbon majors in technologies like Carbon Capture and Storage [CCS], so the techniques remain radically under-developed and nowhere deployed at scale. This month's Special Report from the IPCC observes: "The technological maturity of CO₂ capture options in the power sectors has improved considerably, but costs have not come down between 2005 and 2015 due to limited learning in commercial settings and increased energy and resources costs".¹⁴ The "limited learning in commercial settings" is the result of the failure of the carbon majors to invest significant resources in implementing ways for their product to be used safely, that is, without harming humans by undercutting the climate dynamics that underlie our economies and societies.

It is morally wrong for the carbon majors to continue knowingly to inflict severe harms on the vulnerable people on this planet, especially rights-violating harms. The firms must either cease to provide their dangerous product, fossil fuels, and develop non-harmful alternative sources of energy, or develop and disseminate methods by which their product can be used safely, such as methods of carbon capture. As already indicated, the firms are free to choose among substitution of a climate-safe product for their unsafe product, or modification of how their product is used so that it can be used safely, or any combination of substitution and modification. What they are not free to do is to continue to cause unprecedented harm by further disrupting the fundamental conditions of life on this planet by business-as-usual for themselves while everyone else must adjust to a shifting climate.¹⁵

2.6 Enforcement mechanisms and corporate evasion

The prohibition on inflicting avoidable harm made it the moral responsibility of the carbon majors to adopt substitution or modification decades ago. That corporate responsibility continues in full force. Since these firms have persistently and blatantly failed even to attempt to fulfil their responsibility on their own, however, it has now become the duty of governments and non-governmental representatives of society like the Philippine Commission on Human Rights to hold them accountable and, to the fullest extent possible, to enforce responsible non-harmful conduct upon them. Widespread agreement exists among economists that to drive action a price needs to be placed on carbon emissions through either carbon taxes or some version of cap and trade.¹⁶ My understanding is that carbon taxes are preferable, but I leave the choice of pricing mechanism to economists. Sufficiently high prices on carbon emissions might push carbon majors toward either substitution or modification.

However, some of the carbon majors are currently engaged in an attempt to manipulate the issue of carbon taxes in order completely to escape accountability for the damage done by their decades of business-as-usual ignoring scientific findings. The massive misinformation campaign funded over past decades by

¹³Carbon removal as an alternative to carbon capture is very briefly discussed below.

¹⁴Heleen de Coninck and Aromar Revi, "Strengthening and implementing the global response" (Chapter 4), para. 4.3.1.6, in Intergovernmental Panel on Climate Change, *Global Warming of 1.5°C* (2018).

¹⁵See Julie Rozenberg and Stéphane Hallegatte, 'Poor People on the Front Line: The Impacts of Climate Change on Poverty in 2030', in Ravi Kanbur and Henry Shue (eds.), *Climate Justice: Integrating Economics and Philosophy* (Oxford: Oxford University Press, 2019), 24-42.

¹⁶See, for example, William Nordhaus, 'Projections and Uncertainties about Climate Change in an Era of Minimal Climate Policies', *American Economic Journal: Economic Policy* 2018, 10, 333 - 360. doi:10.1257/pol.20170046. Also see Michael Jakob, Ottmar Edenhofer, Ulrike Kornek, Dominic Lenzi, and Jan Minx, 'Governing the Commons to Promote Global Justice: Climate Change Mitigation and Rent Taxation', in Kanbur and Shue, *Climate Justice*, 43-62.

leading corporate majors is notorious.¹⁷ Lying on such a monumental scale is, needless to say, also morally wrong. At present one specific effort at continuing deception takes the form of declaring support for the “Baker-Schultz Carbon Tax”. This proposal for a carbon tax, however, would block all legal liability for past harm knowingly inflicted as well as eliminate much regulation of carbon emissions, constituting a “toxic *quid pro quo*”.¹⁸ By contrast, a proposal that is not centred on a get-out-of-jail-free card for carbon majors is, for instance, the “Carbon Fee and Dividend” proposed by the Citizens Climate Lobby.¹⁹ There is no reason whatsoever why any proposal for a carbon tax needs to smuggle in an exemption from liability for violations of basic rights that have been so extreme for so long. The elimination of corporate liability would simply externalize all costs generated by the chosen behaviour of the carbon majors. The carbon majors would retain all the wealth they have gained from providing fossil fuels for dangerous methods of combustion, and the rest of humanity would bear all the costs of dealing with the damage done by those emissions. That is a morally preposterous proposal.

Carbon pricing could motivate a strategy of substitution of safe alternatives: a movement from providing fossil energy to providing alternative energy. Alternatively, carbon pricing could motivate a strategy of modification: R & D on technology, such as CCS, that would allow fossil energy to continue to be used without the current climate-disrupting levels of carbon emissions. Responsible governments ought, however, to require that carbon majors promptly either substitute or modify. A sketch of a relatively straightforward mechanism for doing this was developed a few years ago by a group of British climate scientists. Here is the heart of their suggestion:

"The proposed mechanism is as follows: to introduce a Certificate system to identify any person extracting, or importing, oil or gas for sale or use as fuel or feedstock or reagent within the economic jurisdiction of the UK. The Certificate carries an obligation to demonstrate permanent storage of a percentage of the fossil carbon content of that oil or gas in the form of carbon dioxide that would otherwise, under normal business practice, have been vented into the atmosphere. The percentage will be set by the OGA [Oil and Gas Authority] in consultation with independent scientific advice, and increase over time to be commensurate with the UK's long-term climate goals. Permanent storage may be provisionally defined as an expected storage lifetime of 10,000 years.

The regulatory burden of such a certificate system is both simple and light. All of the information required is in existence, and much of it already gathered by Government. The only novel element here is a simple combination of information

¹⁷Robert J. Brulle, ‘The climate lobby: a sectoral analysis of lobbying spending on climate change in the USA, 2000 to 2016’, *Climatic Change* 149 (2018), 289-303. doi:10.1007/s10584-018-2241-z. Also see Naomi Oreskes & Erik M. Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming* (London and Sydney: Bloomsbury Press, 2010), 169 - 215; Geoffrey Supran and Naomi Oreskes, ‘Assessing ExxonMobil’s climate change communications’, *Environmental Research Letters*, 12 (2017) 084019. doi:10.1088/1748-9326/aa815f. <http://iopscience.iop.org/article/10.1088/1748-9326/aa815f/pdf>; and Justin Farrell, ‘Corporate funding and ideological polarization about climate change’, *Proceedings of the National Academy of Sciences of the United States of America* 113 (2016), 92-97. doi:10.1073/pnas.1509433112.

¹⁸Editorial Board, ‘A carbon tax is a good idea - so long as it doesn’t come with industry handouts’, *Los Angeles Times* (12 October 2018). www.latimes.com/opinion/.../la-ed-carbon-tax-global-warming-20181012-story.html. Also see Lee Wasserman and David Kaiser, ‘A Bad Tradeoff for the Planet’, *New York Times*, 26 July 2018.

¹⁹<https://citizensclimatelobby.org/why-carbon-fee-and-dividend/>.

to produce a liability. The discharge of that liability is equally simply measured with currently collected data.”²⁰

Other proposals need not, of course, omit coal, the most polluting fossil fuel; it happened to be omitted in this particular proposal only because the proposal was attached to a legislative bill creating specifically an Oil and Gas Authority. How high a percentage of the carbon content of the coal, oil, or gas introduced under the certificate system would initially be required to be captured obviously depends partly on the limited maturity of the CCS technology now. However, the point would be to force all carbon vendors to invest sufficiently large sums in CCS to drive the technology rapidly forward, so the required percentage should be ratcheted up as quickly as possible until it reaches 100%. Then every additional ton of carbon extracted would have to be matched by a ton of carbon captured and sequestered for at least 10,000 years. All further carbon emissions vented are depleting the disappearing global carbon budget for any remotely safe temperature rise. Any carbon vendor who does not wish to invest in CCS, or a functionally equivalent technology, can invest instead in alternative energy - the choice between modification and substitution is the firms'. The choice between continuing to undermine the climate with carbon emissions and promptly ceasing, by contrast, is not theirs.

2.7 Carbon capture and further corporate evasion

Two further stratagems threaten the modification route. First, carbon majors sometimes endorse CCS, but suggest that additional public spending should be the main source of additional R & D on CCS, as if the disruption of the climate has nothing to do with them. Like the requirement in the “Baker-Schultz Carbon Tax” that carbon majors be exempted from liability for the harm done by their insistence on business-as-usual long after the science established that their activities were progressively undermining the climate, this suggestion is merely another way of attempting to retain all the wealth accumulated from the process of disrupting the climate, while externalizing upon humanity at large all the costs of bringing the harm to an end. Convincing the general public to pay to make safe the use of the product that the carbon majors profit from providing for unsafe use would be another outrageous scam. Societies may decide that our current plight is sufficiently threatening that they are willing to bear some of the unfair financial burden belonging to the corporate majors that they ought not to need to bear, but that is entirely their choice. The burden of the clean-up properly falls on those who both made the original mess and are happy to continue indefinitely and knowingly deepening the mess.

Second, and importantly, it may be proposed that later carbon removal - perhaps after an initial emissions “overshoot” - is as good as carbon capture at the time of combustion. This is not true, and any proposal to forgo capture in hope of removal is profoundly misguided. It is crucial that governments mandate carbon capture contemporaneous with combustion, not dream about later carbon removal after its release. I will very briefly indicate why.²¹ First, although the vast majority of the integrated assessment models relied on for IPCC studies assume the availability

²⁰Myles Allen, Stuart Haszeldine, Cameron Hepburn, Corinne Le Quéré, and Richard Millar, *Certificates for CCS at reduced public cost: securing the UK's energy and climate future, Energy Bill 2015*, SCCS Working Paper 2015-04 (Edinburgh: Scottish Carbon Capture and Storage, 2015). Copy attached to this statement.

²¹The reasons are laid out more fully in two recent articles: Henry Shue, ‘Climate Dreaming: Negative Emissions, Risk Transfer, and Irreversibility’, *Journal of Human Rights and Environment*, 8 (2017), 203-216. doi:10.4337/jhre.2017.02.02 (copy attached to this statement); and “Mitigation Gambles: Uncertainty, Urgency, and the Last Gamble Possible,” *Philosophical Transactions of the Royal Society A*, 376:20170105 (2018). doi:10.1098/rsta.2017.0105.

of methods for carbon removal later in this century, few of the technologies are even as well developed as CCS. The methods of carbon removal that are best understood, such as reforestation, afforestation, and ecological restoration, cannot remove sufficient quantities of carbon dioxide. Unless carbon emissions rapidly reach net zero, the quantity of carbon removal that will be necessary in order to limit climate change will be possible only with some of the new technologies that remain to be fully developed and tested at scale. Consequently, no grounds exist for full confidence that carbon removal can eliminate sufficiently large quantities of additional carbon emissions.

Second, the new technology most often assumed in the integrated assessment models, CCS combined with bio-energy [BECCS], confronts all the obstacles faced by CCS, plus all the additional obstacles faced by extensive bio-energy. Most importantly, the production of the feedstocks for bio-energy requires extensive land and water so that this production may compete with food production and thus with sustainable development and even subsistence.²² Seizure of land or water needed for subsistence would violate fundamental rights.

Third, although an earlier “overshoot” in carbon emissions can in theory be reversed by later carbon removal, the effects on the climate produced by those excessive emissions cannot necessarily be reversed. It is entirely possible that a “temporary” overshoot will cause a permanent change in the climate. And there are good scientific grounds to worry that those changes will include the passing of tipping points, even tipping points that will generate a cascade of self-reinforcing positive feedbacks for more extreme climate change.²³ Capture now is far safer than hoped-for removal later, and it is the responsibility of the carbon majors to see that it happens if they wish to continue to sell fossil fuels. If they do not, they will be responsible for much greater harm than they have already inflicted.

Henry Shue
Henry Shue
 October 21, 2018

²²Pete Smith, Steven J. Davis, Felix Creutzig, *et al.*, ‘Biophysical and economic limits to negative CO₂ emissions’, *Nature Climate Change* 6 (2016), 42 - 50. doi:10.1038/nclimate2870. Also see Jan C. Minx, William F. Lamb, Max W. Callaghan, *et al.*, ‘Negative Emissions—Part 1: Research landscape and synthesis’, *Environmental Research Letters*, published on-line, 22 May 2018 [open access]. doi:10.1088/1748-9326/aabf9b.

²³Will Steffen, Johan Rockström, Katherine Richardson, *et al.*, ‘Trajectories of the Earth System in the Anthropocene’, *Proceedings of the National Academy of Sciences of the United States of America*, published on-line [open access], 6 August 2018. doi:10.1073/pnas.1810141115. Also see Henry Shue, ‘Uncertainty as the Reason for Action: Last Opportunity and Future Climate Disaster’, *Global Justice: Theory Practice Rhetoric*, Special Issue on Global Justice and Climate Change, 9 (2016), 86-103 [on-line, open access].
<https://www.theglobaljusticenetwork.org/global/index.php/gjn/article/view/89/65>.