

# Does climate change kill people in Darfur?

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*The author argues that the relationship between climate change and the deaths in Darfur is less direct than some accounts suggest. While 'ontological vulnerability' theory is not without promise for understanding the relationship between climate change and its effects on human populations, the theory requires supplementation with the kind of empirical work reflected in vulnerability and adaptation science. The author suggests that existing international legal arrangements offer a well-established, accepted and universal normative, theoretical and practical framework to help understand and address the relationship between climate change and human well-being in general and between climate change and the outbreak of ethnic armed conflict in particular.*

**Keywords:** *climate change, Darfur, ethnic armed conflict, empirical data, vulnerability*

## 1 FOCUS OF THE DISCUSSION

The question 'Does climate change kill people in Darfur?' is not a purely rhetorical one. In recent years international concern has been building up over the negative effects of changes in climate patterns on various aspects of daily life, especially in regions with particularly sensitive ecosystems. People living in the Darfur region of the Sudan, for example, have suffered from advancing desertification which might have been caused or worsened by anthropogenic global warming. Numerous high-profile studies, such as reports of the UN Secretary-General, the UN Environment Programme (UNEP) and the World Food Programme (WFP) have sounded the alarm of a direct connection between climate change and armed conflict. The highly influential Stern Review on the Economics of Climate Change, commissioned by the Government of the United Kingdom, stated that: 'Climate-related shocks have sparked violent conflict in the past, and conflict is a serious risk in areas such as West Africa, the Nile Basin and Central Asia'.<sup>1</sup> Many non-governmental organisations

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1. N Stern, *The Economics of Climate Change* (2006), Executive Summary.

have contended that climate change has contributed directly to ethnic armed conflict in Darfur and elsewhere across the Sahel.<sup>2</sup>

The question as to whether climate change kills people in Darfur, however, is not straightforward: both the effects of climate change and the root causes of ethnic conflict are quite complex. A sound understanding of causal factors requires a realistic, practically oriented theoretical perspective by which to interpret trends and patterns in Darfur and elsewhere. It is therefore valuable to explore the extent to which climate change accounts for excess mortality in Darfur by considering:

- whether climate change threatens human security;
- whether climate change *creates* ethnic armed conflict;
- whether climate change-induced mortality can be well understood by applying ‘ontological vulnerability’ theory;
- whether climate change intensifies inter-ethnic competition for scarce resources, thereby causing ethnic armed conflict;
- whether climate change, together with other kinds of factors, causes excess mortality rates in Darfur; and finally,
- whether climate change kills people in Darfur.

The article concludes with some reflections on methodological parameters for approaching the question of the role of climate change in ethnic conflict in Darfur and elsewhere.

### 1.1 Violence in Darfur

Darfur’s long simmering ethnic tensions heated up in 2001 and 2002 with the formation of two rebel movements – the Sudan Liberation Movement/Army (SLM/A) and the Justice and Equality Movement (JEM). In February, June and July 2002, the SLM/A and JEM rebels carried out sporadic attacks on Sudanese police and army outposts. These were followed by a particularly brazen four-hour long joint assault on the Government’s military presence at El Fasher airport on 25 April 2003 which humiliated the Government, provoked a strong reaction from it, and sparked open and protracted hostilities. In the El Fasher attack, rebel forces killed around 100 soldiers,

2. See Report of the Secretary-General on Climate Change and its Possible Security Implications; A/64/350 of 11 September 2009; see also Sudan: Post-Conflict Environmental Assessment, United Nations Environment Programme (2007); see further World Food Programme, Climate Change: The Hungry on the Front Line, interview in Rome of 6 July 2007 with WFP food expert Menghestab Haile, who stated that ‘... lack of action in the face of climate change in Africa could lead to a future where wars are fought over ever-scarcer resources’; <<http://one.wfp.org/english/?ModuleID=137&Key=2542>> last accessed 27 October 2010. See further Julian Borger, ‘Darfur Conflict Heralds Era of Wars Triggered by Climate Change, UN report warns’, *Guardian*, 23 June 2007; <<http://www.guardian.co.uk/environment/2007/jun/23/sudan.climatechange/print>>, last accessed 27 October 2010; See also, e.g., The International Crisis Group, ‘Climate Change and Conflict’ webpage which warned that: ‘The potential consequences of these changes and of the environmental degradation associated with them are grave. They include food and water shortages, population shifts and economic losses. These in turn may increase a range of risks to human security, including the risk of deadly conflict’, at <<http://www.crisisgroup.org/en/key-issues/climate-change-and-conflict.aspx>>, last accessed 27 October 2010.

destroyed five Antonov bombers and several helicopter gunships, and captured 32 soldiers including base commander Major General Ibrahim Bushra Ismail, whom they released 45 days later.<sup>3</sup> The Government seemed unable to drive back the rebels or to re-establish control over parts of Darfur until it encouraged Janjaweed militia to fight alongside the Sudanese Armed Forces and the Popular Defence Forces. The Janjaweed's systematic and widespread infliction of atrocities on civilian populations fanned the flames of ethnic violence and ignited full-scale civil war in Darfur.<sup>4</sup> Several high-level UN investigations have documented extensive and systematic human rights and humanitarian law violations committed mainly by the Government of the Sudan, Janjaweed and other pro-Government militia, including: massacres of civilians, forced disappearances, gang rape of women and children, torture and summary or arbitrary executions.<sup>5</sup> By January 2010, almost 3 million persons, including more than a quarter of a million refugees, were still displaced from their homes in Darfur.<sup>6</sup>

3. See S Power, 'Dying in Darfur: Can the Ethnic Cleansing in Sudan be Stopped?' *The New Yorker* (August 2004); <[http://www.newyorker.com/archive/2004/08/30/040830fa\\_fact1](http://www.newyorker.com/archive/2004/08/30/040830fa_fact1)> last accessed 27 October 2010.

4. The International Criminal Court's Pre-Trial Chamber considered that there were reasonable grounds to believe the Janjaweed carried out systematic or widespread attacks and that 'during these attacks, persecution, murders, forcible transfers, imprisonment or severe deprivation of liberty, acts of torture, rapes and other inhumane acts upon civilians, primarily from the Fur, Zaghawa and Masalit populations, were committed by the Sudanese Armed Forces and the Militia / Janjaweed'. See Warrant for Arrest of Ali Kushayb in the Case of the Prosecutor v Ahmad Muhammad Harun (Ahmad Harun) and Ali Muhammad Al Abd-al-rahman ("Ali Kushayb"); ICC-02/05-01/07 of 27 April 2007. See also "'Janjaweed leader" is Sudan aide', *BBC World News*, 21 January 2008, which reported that 'The Sudanese authorities have given a senior government position to a man accused of co-ordinating the Janjaweed Arab militia in Darfur'; <<http://news.bbc.co.uk/2/hi/africa/7199447.stm>>, last accessed 27 October 2010.

5. See the Report of the International Commission of Inquiry on Darfur to the United Nations Secretary-General Pursuant to Security Council Resolution 1564 of 18 September 2004 of 25 January 2005; see further the Report of the High-Level Mission on the Situation of Human Rights in Darfur pursuant to Human Rights Council decision S-4/101 (A/HRC/4/80); and see also the Final report on the situation of human rights in Darfur prepared by the group of experts mandated by the Human Rights Council in its resolution 4/8, presided over by the Special Rapporteur on the situation of human rights in the Sudan and composed of the Special Rapporteur on extrajudicial, summary or arbitrary executions, the Special Representative of the Secretary-General for children and armed conflict, the Special Rapporteur on violence against women, its causes and consequences, the Special Representative of the Secretary-General on the situation of human rights defenders, the Representative of the Secretary-General on the human rights of internally displaced persons and the Special Rapporteur on the question of torture and other cruel, inhuman or degrading treatment or punishment; A/HRC/6/19 of 28 November 2007.

6. The Report of the Secretary-General on the African Union–United Nations Hybrid Operation in Darfur, S/2010/50 of 29 January 2010 indicates at paragraph 59 that: 'conditions conducive to the voluntary return of the more than 2 million displaced persons have not yet been established' and the UNHCR Global Appeal 2010–2011, at page 1 states that: 'The Darfur conflict has displaced close to three million people, of whom some 270,000 have sought refuge across the border in eastern Chad.' <<http://www.unhcr.org/cgi-bin/texis/vtx/search?page=search&docid=4b02c9849&query=darfur%202010>>, last accessed 27 October 2010.

A study published in *The Lancet* in January 2010 analyses changes in mortality over time both in terms of crude numbers and according to specific causes, including the effects of displacement. It concluded that from early 2004 to the end of 2008 there were almost 300,000 excess deaths in Darfur.<sup>7</sup>

## 2 DOES CLIMATE CHANGE THREATEN HUMAN SECURITY IN GENERAL?

Leaving aside scientific considerations as to the causes of climate change itself, the threat that climate change (whatever may be its causes) could pose to human security (a rather general if not vague concept),<sup>8</sup> particularly that of the poor, was accorded extensive treatment in the UNDP's 2007/2008 Human Development Report. The report identified five 'key transmission mechanisms' through which climate change severely hampers human development efforts, namely: loss of agricultural production which undermines poverty eradication efforts; 'water stress and water insecurity'; rising sea levels and intensified natural disasters that inundate small island States and coastal regions as well as river bank and delta settlements; disruption of ecosystems and biodiversity; and higher incidence in the spread of disease and epidemics including malaria and dengue fever.<sup>9</sup> The report noted for example:

In Ethiopia and Kenya, two of the world's most drought-prone countries, children aged five or less are respectively 36 and 50 percent more likely to be malnourished if they were born during a drought. For Ethiopia, that translates into some 2 million additional malnourished children in 2005. In Niger, children aged two or less born in a drought year were 72 percent more likely to be stunted. And Indian women born during a flood in the 1970s were 19 percent less likely to have attended primary school.<sup>10</sup>

The UNDP report warned that 'drought affected areas in sub-Saharan Africa could expand by 60–90 million hectares' and that if other countries including in 'Latin America and South Asia – also experience losses in agricultural production', by the year 2080 there could be an additional 600 million persons suffering from malnutrition. By the same year UNDP projects that an additional 1.8 billion people could suffer from scarcity of water, particularly those living in Central Asia, Northern China and northern South Asia, because of retreating glaciers in the Himalayas, which would also cause an increase in river flow through seven of Asia's main

7. The authors summarise the interpretation of their findings thus: 'Although violence was the main cause of death during 2004, diseases have been the cause of most deaths since 2005, with displaced populations being the most susceptible. Any reduction in humanitarian assistance could lead to worsening mortality rates, as was the case between mid 2006 and mid 2007.' See O Degomme and D Guha-Sapir, 'Patterns of Mortality Rates in Darfur Conflict' 375 *The Lancet* (2010) 294–300 at 294.

8. See generally, LS Sunga, 'The Concept of Human Security: Does it Add Anything of Value to International Legal Theory or Practice?' in M-L Frick and A Oberprantacher (eds), *Power and Justice in International Relations: Interdisciplinary Approaches to Global Challenges* (Ashgate, Surrey 2009) 131–46.

9. UNDP Human Development Report 2007/2008: *Fighting Climate Change: Human Solidarity in a Divided World*; New York, UNDP (399 pages) at 9.

10. *Ibid.*, at 10.

river systems.<sup>11</sup> The Andean region faces similar water insecurity problems associated with melting glacial mass. The Middle East would likely suffer from diminishing water resources as well. The UNDP estimated that an increase in global temperature by 3–4°C could cause flooding and displace some 330 million people permanently or temporarily, affecting over ‘70 million people in Bangladesh, 6 million in Lower Egypt and 22 million in Viet Nam’.<sup>12</sup> More extreme weather phenomena caused by warming seas could further endanger the more than 344 million people whom the UNDP estimates remain exposed to tropical cyclones, as well as some 1 billion urban slum dwellers, many of whom live in river bank areas or on hillsides.

In his report of January 2010, the UN Secretary-General’s representative on the human rights of internationally displaced persons, Professor Walter Kalin, linked climate change to increased frequency and intensity of natural disasters that caused mass displacement of people from their homes. He estimated that climate change could contribute to the displacement of somewhere between 50 and 250 million people permanently or temporarily.<sup>13</sup> Based on his missions to a number of countries, the representative concluded that persons displaced by natural disasters faced a higher risk of human rights abuse, in particular those groups already facing marginalisation, discrimination and reduced access to humanitarian assistance. This was particularly the case for displaced children, who in some situations faced a higher likelihood of becoming sexually exploited, and for displaced women who suffered a higher risk of sexual and gender-based violence and weaker enjoyment of economic, social and cultural rights.<sup>14</sup>

The report of the Office of the United Nations High Commissioner for Human Rights on the relationship between climate change and human rights identified threats posed by climate change to the enjoyment of several other human rights, in particular: the right to life – from hunger, malnutrition, disease and natural disasters; the right to adequate food – from diminished crop yields especially for people living in disaster-prone areas and indigenous peoples; the right to water – owing to increased glacial melt and increased stress on safe drinking water; the right to health – from malnutrition, disease ‘and an increased burden of diarrhoeal, cardio-respiratory and infectious diseases’; the right to adequate housing – from rising sea levels and storm surges, particularly in deltas, coastal areas, the Arctic and small island States; and the right to self-determination – from the elimination of ‘the territorial existence of a number of low-lying island States’ and deprivation of

11. Some of the International Panel on Climate Change’s findings have been hotly contested, for example, its endorsement of a report that there was a very high likelihood that the Himalayan glaciers would melt completely by the year 2035, although little scientific evidence seemed to support such conjecture. See World Wildlife Federation, ‘An Overview of Glaciers, Glacier Retreat, and Subsequent Impacts in Nepal, India and China’, (WWF Nepal Program) March 2005 which picked up this claim; and Jonathan Leake and Chris Hastings, ‘World misled over Himalayan glacier meltdown’, *The Sunday Times*, 17 January 2010, questioning its veracity: ‘... glaciologists find such figures inherently ludicrous, pointing out that most Himalayan glaciers are hundreds of feet thick and could not melt fast enough to vanish by 2035 unless there was a huge global temperature rise. The maximum rate of decline in thickness seen in glaciers at the moment is 2–3 feet a year and most are far lower’.

12. UNDP Human Development Report 2007/2008: *Fighting Climate Change: Human Solidarity in a Divided World*; New York, UNDP (399 pages) at 10.

13. Report of the Representative of the Secretary-General on the human rights of internally displaced persons, Walter Kalin; A/HRC/13/21 of 5 January 2010 at para 41.

14. *Ibid.*, at para 43.

indigenous peoples' traditional sources of food and livelihood. The report also drew attention to specific climate change threats to the human rights of women, children and indigenous peoples.<sup>15</sup>

In her report to the UN Human Rights Council, Special Rapporteur Raquel Rolnik further considered the negative effect of climate change on the exercise of the right to adequate housing. Developing countries, she noted, were far less prepared to deal with the occurrence of climate change-related natural disasters.<sup>16</sup> The Special Rapporteur also linked climate change to increased flooding, which threatened urban slum dwellers many of whom remain concentrated in low-lying delta areas. According to UN Habitat, slum dwellers number around 1 billion, 930 million of whom live in developing countries and make up some 42 per cent of the population located in urban areas.<sup>17</sup>

In his report on the possible security implications of climate change,<sup>18</sup> the Secretary-General identified five main ways in which climate change affects human well-being: first as a threat to human rights; second as a threat to economic development through increased poverty; third by forced migration from 'competition with other communities or groups over scarce resources'<sup>19</sup> that spurs civil war or international 'resource wars'; fourth, in the case of small island developing States, rising sea levels that inundate physical national territory causing statelessness and mass population displacement; and fifth through reduced access to natural resources, resulting in increased resource competition and territorial disputes.

In short, there is no lack of evidence, much of it based on the International Panel on Climate Change's comprehensive 2007 Synthesis Report,<sup>20</sup> on the deleterious effects of climate change on human security in general. Even if it is difficult to assess the precise extent to which climate change threatens human security, the causal link between worsening natural disasters, advancing desertification, flooding from rising sea levels and other longer-term weather system imbalances on the one hand, and water, food and housing insecurity on the other (particularly in ecologically vulnerable areas) appears to have been relatively well established. A causal connection between climate change and ethnic conflict is therefore not *a priori* implausible, but a more difficult question remains concerning whether climate change actually *creates* ethnic conflict or leads to inter-ethnic armed hostilities through a more direct cause and effect relation – a proposition explored next.

15. The Report of the Office of the United Nations High Commissioner for Human Rights on the Relationship between Climate Change and Human Rights; A/HRC/10/61 of 15 January 2009 at paras 22–54.

16. 'Between 2000 and 2004, for example, an average of 1 in 19 people living in the developing world was affected by a climate disaster per year, while 1 in 1,500 was affected within member countries of the Organization for Economic Cooperation and Development. Japan is more highly exposed to the risks associated with storms, cyclones and flooding than the Philippines; yet between 2000 and 2004, average disaster-related fatalities amounted to 711 in the Philippines and 66 in Japan.' See Report of the Special Rapporteur on Adequate Housing as a Component of the Right to an Adequate Standard of Living, and on the Right to Non-Discrimination in this Context, Raquel Rolnik, submitted pursuant to Human Rights Council resolution 6/27; A/64/255 of 6 August 2009 at para 10.

17. *Ibid.*, at para 17.

18. Report of the Secretary-General on Climate change and its Possible Security Implications; A/64/350 of 11 September 2009.

19. *Ibid.*, at para 16.

20. See International Panel on Climate Change, *Climate Change 2007: Synthesis Report* (ed. RK Pachauri and A Reisinger) Geneva 2007.

### 3 DOES CLIMATE CHANGE *CREATE* ETHNIC CONFLICT?

It is worthwhile considering UN Secretary-General Ban Ki-Moon's *Washington Post* editorial 'A Climate Culprit in Darfur' of 16 June 2007 which posits a causal relationship between climate change and the atrocities committed in Darfur since 2003.<sup>21</sup> The Secretary-General's argument is interesting not only for what it says, but for what it does not.

In his editorial, Mr Ban observed that:

Almost invariably, we discuss Darfur in a convenient military and political shorthand – an ethnic conflict pitting Arab militias against black rebels and farmers. Look to its roots, though, and you discover a more complex dynamic. Amid the diverse social and political causes, the Darfur conflict began as an ecological crisis, arising at least in part from climate change.<sup>22</sup>

Since the 1980s, he pointed out, average precipitation in southern Sudan has declined by around 40 per cent, which 'coincided with a rise in temperatures of the Indian Ocean, disrupting seasonal monsoons' and that sub-Saharan drought was caused to some extent by man-made global warming. Ban then related climate change directly to atrocities perpetrated in Darfur:

It is no accident that the violence in Darfur erupted during the drought. Until then, Arab nomadic herders had lived amicably with settled farmers. ... But once the rains stopped, farmers fenced their land for fear it would be ruined by the passing herds. For the first time in memory, there was no longer enough food and water for all. Fighting broke out. By 2003, it evolved into the full-fledged tragedy we witness today.

Ban thus drew a straight line of causality from climate change to drought to ethnic conflict.

It is true that military and political events alone do not adequately explain the outbreak and duration of ethnic conflict. In many ethnic armed conflict situations, competition over access to resources – a tension exacerbated by climate-change pressure on the ecological system – should be factored in as part of the larger geopolitical dynamic. Nonetheless, questions remain as to: (1) whether Ban was right in suggesting that climate change *explains* the dynamics of ethnic conflict in Darfur; and (2) whether it follows from the relatively well-documented threat that climate change poses to human security that climate change *caused* the Darfur ethnic conflict. This question forms a central theme of this article and it will be considered in more depth shortly, but it is worth noting straightaway that Ban is not alone in his assessment of causal factors in Darfur.

The Secretary-General continued:

We can hope for the return of more than 2 million refugees. We can safeguard villages and help rebuild homes. But what to do about the essential dilemma – the fact that there's no longer enough good land to go around?

21. See Ban Ki Moon, 'A Climate Culprit in Darfur', *Washington Post*, 16 June 2007 at <<http://www.washingtonpost.com/wp-dyn/content/article/2007/06/15/AR2007061501857.html>>, last accessed 27 October 2010.

22. *Ibid.*

He ventured that, in addition to ‘political settlements’, there must be the introduction in Darfur of:

genetically modified grains that thrive in arid soils or new irrigation and water storage techniques. There must be money for new roads and communications infrastructure, not to mention health, education, sanitation and social reconstruction programs. The international community needs to help organize these efforts, teaming with the Sudanese government as well as the international aid agencies and nongovernmental organizations working so heroically on the ground.

Ban concluded with an appeal to address conflicts also in Somalia, Ivory Coast and Burkina Faso through partnership cooperation with the particular territorial Government concerned to mobilise massive international investment in infrastructure.<sup>23</sup>

This perspective finds support in UNEP’s post-conflict environmental assessment for the Sudan, published a week after the Secretary-General’s editorial piece in June 2007.<sup>24</sup> UNEP relates climate change-induced stress on Darfur’s ecology to increased competition for scarce resources, in particular, oil and gas reserves, access to the Nile waters, hardwood timber, and grazing and agricultural land as the main environmental sources of conflict.<sup>25</sup> On the one hand, climate change, UNEP contends, had reduced the supply of critical natural resources through desertification, soil erosion, excessive depletion of soil nutrients and increased hardening of the ground, as well as through deforestation resulting from a long-term decrease in precipitation in Northern Darfur of 30 per cent over an 80-year period.<sup>26</sup> On the other hand demand for scarce resources has intensified because of population increase, for example in central Darfur it has increased by ‘12 percent per annum, from 3 persons/km<sup>2</sup> in 1956 to 18 persons/km<sup>2</sup> in 2003’, with an increase in the livestock population of more than 400 per cent between 1961 and 2004.<sup>27</sup>

UNEP acknowledged that it ‘chose not to investigate in detail the social and political aspects of conflicts in Sudan, focussing instead on their environmental dimension’.<sup>28</sup> It further qualified its findings at the outset stating that ‘where environment and natural resource management issues are important, they are generally contributing factors only, not the sole cause for tension’.<sup>29</sup> Despite these caveats, UNEP concluded that its analysis:

indicates that there is a very strong link between land degradation, desertification and conflict in Darfur. Northern Darfur – where exponential population growth and related environmental stress have created the conditions for conflicts to be triggered and sustained by political, tribal or ethnic differences – can be considered a tragic example of the social breakdown that can result from ecological collapse. Long-term peace in the region will not be possible unless these underlying and closely linked environmental and livelihood issues are resolved.<sup>30</sup>

23. Ibid.

24. UNEP, Sudan: Post-Conflict Environmental Assessment 2007.

25. Ibid, at 77 *et seq.*

26. Ibid, at 84.

27. Ibid, at 85.

28. Ibid, at 73.

29. Ibid, at 77.

30. Ibid, at 8.



UNEP's conclusion of 'a very strong link' between environmental factors and conflict through population growth, environmental stress and social breakdown posits a direct causal relation between climate change and ethnic conflict in Darfur.

A hidden premise in the argument that climate change produces ethnic conflict in Darfur is that competition among ethnic groups over scarce resources in general causes conflict. Yet this premise cannot be accepted as true unless it is backed up by either a compelling theoretical argument or pertinent empirical analysis. Before further considering whether climate change kills people in Darfur it is therefore valuable first to consider whether an 'ontological vulnerability' perspective, with its central focus on the vulnerability of individual human beings to existential threats, might facilitate our understanding of the complex factors that have given rise to the conflict in Darfur; and secondly to investigate by recourse to empirical data the related assumption that inter-ethnic competition over scarce resources causes conflict in general.

#### 4 DOES 'ONTOLOGICAL VULNERABILITY' THEORY HELP EXPLAIN THE DARFUR CONFLICT'S ROOT CAUSES?

The term 'ontological vulnerability' itself might jangle one's basic logical sense as an odd combination. Preceding the noun 'vulnerability' with the adjective 'ontological' seems rather superfluous since 'vulnerability' implies the susceptibility to injury of some sort while 'ontology' refers to the study of being or existence, which already implies a vulnerable subject since no existential being is invulnerable. Despite the strikingly close resemblance of the term 'ontological vulnerability' (and its related cognates such as 'onto-politics' etc.) to a kind of conceptual *lusus naturae*, it is nevertheless worthwhile to consider it in relation to Darfur. Not only does it figure as the theme of the present journal issue, but also, if we understand 'ontological vulnerability' to refer mainly to threats to the existence and well-being of individuals and of the group of which they form a part, then perhaps this perspective might offer particularly apposite insight into the situation in Darfur, whose population has suffered excess mortality rates since 2003. Could an 'ontological vulnerability'<sup>31</sup> approach, for example, introduce a sense of practically oriented perspective to help shed light on whether climate change kills people in Darfur? Could the 'ontological vulnerability' perspective help to uncover root causes, and analyse and interpret the violence of the Darfur conflict? If so, might 'ontological vulnerability' be the key that unlocks our understanding of the black box of inter-ethnic violence wherever such violence occurs? Could it thus even revolutionise conflict prevention studies?

The following consideration of ontological vulnerability theory aspires neither to encapsulate the ideas of the many authors writing from this perspective nor to provide a comprehensive critique. That would involve a much larger endeavour than space limitations here permit. This discussion instead explores the position of leading ontological vulnerability theory proponents in order to analyse critically the extent to which their arguments might bear on the question of whether climate change kills

31. Bryan S Turner in *Vulnerability and Human Rights* (Pennsylvania State University Press, Philadelphia 2006) considers that: 'As an aspect of human frailty, our ontological vulnerability includes the idea that human beings of necessity have an organic propensity to disease and sickness, that death and dying are inescapable, and that aging bodies are subject to impairment and disability' at 29.

people in Darfur with a view to sounding out the possible heuristic value of ‘ontological vulnerability’ in this connection. This review suggests the need for a clear and accurate understanding of a possible relation between climate change and excess mortality rates in Darfur, and that such understanding requires a comprehensive approach well informed by empirical data. In this sense the purely theoretical elements of the ‘ontological vulnerability’ approach are of less help, in practice, than more empirically oriented vulnerability research. It will also, however, be suggested that there are certain flaws identifiable within the work of the particular theorists considered here that render their work less apposite for present purposes.

One of the leading theoretical works offered on the theme of vulnerability is Bryan S Turner’s *Vulnerability and Human Rights*. Turner indicates that: ‘This study of human rights places the human body at the center of social and political theory, and it employs the notion of embodiment as a foundation for defending universal human rights values’,<sup>32</sup> positing the related notion that the universality of human rights derives from elements core to the objective human condition, in particular the vulnerability of human beings to injury, harm, pain, mortality and frailty, and the precariousness of institutional frameworks to safeguard human existence and dignity from such vulnerabilities. This approach seems to offer assistance in countering the kind of argument heard all too frequently from the Government of the Sudan and certain other Governments on occasion that human rights are not universal at all but rather part of some Western imperialist plot to subjugate the Sudan among other developing countries.<sup>33</sup> Turner’s concepts of ‘human vulnerability’ and ‘institutional precariousness’ are, after all, factors very much at play in Darfur, and he uses them to underline the fundamental importance of human rights and its claim to universalism. Thus, starting from the basic premise that all human beings are vulnerable, Turner seeks to extrude the key rationale behind the rise and implementation of human rights as a universal normative system. He observes that:

Human beings experience pain and humiliation because they are vulnerable. While humans may not share a common culture, they are bound together by the risks and perturbations that arise from their vulnerability. Because we have a common ontological condition as vulnerable, intelligent human beings, human happiness is diverse, but misery is common and uniform. This need for ontological security provides a strong moral argument against cultural relativism and offers an endorsement of rights claims for protection from suffering and indignity.<sup>34</sup>

Accordingly, from the commonplace, one might even say obvious or banal, observation of the ontological vulnerability of human beings and following discussions of selected human rights, Turner concludes that:

Human vulnerability sits, therefore, at the heart of human rights principles, because security is a necessary condition for containing our vulnerability, and legality and legitimacy are pre-conditions of human security. The political world has become increasingly precarious, and

32. Ibid, at 25.

33. See, e.g., C Lynch, ‘Sudan Rejects Request to Allow U.N. Troops: Bush Calls for Assistance from NATO’, *Washington Post*, 20 September 2006 reporting President Al Bashir’s rejection of a UN peacekeeping force in Darfur: “‘We categorically ... reject the transformation of the African force in Darfur into a U.N. force” and “I’m not talking about Jews,” he said. “I’m talking about Zionist organizations that have motives in Sudan. They have objectives in Sudan. They want to weaken Sudan. They want to dismember Sudan”” at <<http://www.washingtonpost.com/wp-dyn/content/article/2006/09/19/AR2006091901427.html>>, last accessed 27 October 2010.

34. Ibid, at 8.

the contemporary international crisis is not well served by academic arguments supporting moral relativism. Recognizing our common vulnerability is the only starting point for the construction of a commonwealth in which security might be restored.<sup>35</sup>

Thus ‘ontological vulnerability’ theory tries to offer an undogmatic, self-reflective and critical approach in order to avoid the pitfalls of cultural and moral relativism and to reach beyond mere ideological exhortations of human rights.

Ontological vulnerability theory is not, however, monolithic – despite its commonality – and certain authors have contended that focusing upon humanitarianism might miss important complexities in the political construction of relative social power. Illan rua Wall, for example, opines that:

By too proximately focusing on humanitarianism we miss the structural aspects of violence; we miss exploitation, class conflict, or racism. This ‘objective’ violence is levelled down immediately through a complex web of what Nancy calls ‘myth.’<sup>36</sup>

This raises more directly the relationship between ‘ontological vulnerability’ and the excess mortality rates suffered in Darfur. Wall states in relation to Darfur that:

Being-with suffering is precisely what is at stake with humanitarianism. Žizek tells us that when we engage with proximate suffering, when we denounce humanitarian catastrophes in Darfur, Kosovo or Zimbabwe (what he calls ‘subjective violence’), we are in fact missing another form of violence (an ‘objective violence’). Subjective violence is just the most visible form of violence he tells us, when we approach it objective violence is hidden. Subjective violence seems to appear as though from nothing, from a zero-level or ‘normal state of things’.

and he concludes that:

What is necessary therefore is to transform the sense of human rights from having rights against state incursion to the being of resistant action. Douzinas proposes that instead of the possessive individualism of human rights, we look to ‘a politics of “righting Being”, of rearticulating the meaning of the world around the elimination of domination and exploitation.’ This is a politics of writing and rewriting the victim at the heart of human rights.<sup>37</sup>

Thus, as we can see, Turner and Wall, taken together, propose an ‘ontological vulnerability’ predicated upon what they consider to be a new basis for human rights universalism – one embracing common human vulnerability, yet which paradoxically critiques the empathy implicit in humanitarianism in favour of a more critical engagement (at least in Wall’s case) with power and violence endemic to social systems. However, the language of a politics of ‘righting Being’, though evocative, seems likely to be somewhat remote in relation to actual human rights problems. Ironically, the language seems insubstantial when faced with the substantive detail of the particular violations encountered in practice. It is probable that a person under immediate threat of torture or other serious human rights violation would prefer practical action from any or all available human rights mechanisms in order to prevent the violation or, if it does occur, to help redress the harm suffered, rather than to engage in ‘righting Being’, ‘rearticulating the meaning of the world around the elimination of domination and exploitation’ and ‘rewriting the victim at the heart of human rights’. Arguably, the

35. Ibid, at 140.

36. I Rua Wall, ‘On Pain and the Sense of Human Rights’, (2008) 29 Australian Feminist Law Journal 53–76 at 71.

37. Ibid, at 70.

empirical nature of ontological vulnerability itself requires a thoroughly substantive approach – a fuller enumeration in a set of specific and measurable elements – such as those offered by the vulnerability and adaptation studies that we will consider below. ‘Ontological vulnerability’ theory approaches need to be alloyed with empirical work. Moreover, in respect of Wall, while it is perhaps easy to criticise humanitarianism, it is arguable that the whole point, design and development of international human rights law since the end of the Second World War has been to protect human beings on grounds extending beyond humanitarianism alone. The Atlantic Charter recognised even before the end of the Second World War that human rights promotion and protection had to form a key element of sustained multilateral action through the United Nations not only on humanitarian and ethical grounds, but also in order to guard peace and human security. It is useful, and indeed probably morally incumbent upon us as well, to recall that Governments, pressured by the world peace movement and hundreds of NGOs, in 1945 elevated human rights to the level of international law by way of the Charter of the United Nations in reaction to the enormous loss of life (between 50 and 60 million according to estimates of the International Committee of the Red Cross), massive suffering, human misery, starvation and monumental property damage incurred during the Second World War. Human rights law recognises certain rights as fundamental to the human being and equips victims or potential victims with concrete means by which to avoid, prevent or if necessary redress violations, and to marshal means of prevention and assistance at international, regional, national and local levels to achieve these aims. Thus to consider that international human rights law and implementation, which for decades has exercised substantial influence on thinking, law, policy and action at international, regional, national and local levels to empower people and above all victims against Government, has to become informed with the rather inchoate notion of ‘ontological vulnerability’ without recognising the sense in which the notion is already addressed within existing international legal norms and implementation seems somewhat presumptuous.

None of the foregoing arguments implies that the concept of ‘ontological vulnerability’ is *inherently* inapplicable, or that it could not *in future* be more fully developed to help guide human rights policy, law and action. It means only that at present nothing in this stream of literature – at least from the highly theoretical side – yet seems to offer much of value in terms of *practical* human rights application. If we accept that the value of theory lies in its capacity to improve understanding and guide practice so as to help improve the world, a point on which Immanuel Kant had something important to say,<sup>38</sup> then ‘ontological vulnerability’ theory, unless strengthened by empirical observation and analysis, could be said to fall short at the theoretical level as well. If it is to be retorted that ‘ontological vulnerability’ theories are not intended to have any direct application to human rights practice, then one would be left wondering what might be their possible value. The point is not to describe the world but to change it, to paraphrase Karl Marx – and the best way to change the world, arguably, is by a thorough exploration of its concrete realities. Thus, turning from the more abstract formulation of ‘ontological vulnerability’ theory, it is essential for the purposes of this argument now to investigate, from a much more down-to-earth and empirical point of view, the presumption that inter-ethnic competition for scarce resources causes conflict, and then to relate this to the possible impact of climate change on ethnic conflict in Darfur (and elsewhere).

38. I Kant, *On the Old Saw: That May be Right in Theory but it Won't Work in Practice* (trans EB Ashton) (University of Pennsylvania Press, Philadelphia 1974). If a theory cannot be implemented then maybe it carries less practical relevance and does not count as a good theory either.

## 5 DOES INTER-ETHNIC COMPETITION FOR SCARCE RESOURCES CAUSE CONFLICT?

A substantial body of evidence shows that climate change threatens human security in many ways. As discussed, negative climate change effects are particularly pronounced in ecologically sensitive areas such as Darfur where rampant desertification has sharply reduced access to food and water and lessened the fertility of arable land.<sup>39</sup>

Climate change threatens human security, but does it follow that ethnic competition over scarce resources therefore produces conflict? If inter-ethnic competition for scarce resources in general causes armed conflict, then it would be logical to conclude that this could provide a plausible explanation for the Darfur conflict, which features several distinct ethnic groups, scarcity of basic resources under climate change pressure and much violence associated with armed conflict. Moreover, the kind of full-scale international development assistance engagement with the Government of the Sudan that Ban proposed in his *Washington Post* editorial to address the root causes of ethnic conflict in Darfur would seem to be a sound approach. On the other hand, if the proposition of a causal relationship between inter-ethnic competition for scarce resources and armed conflict is false or the evidence shows only a weak correlation, then one has to search for other contributing factors for the armed conflict in Darfur and adjust one's policy prescriptions accordingly.

Among the many interesting theoretical works published over the years on the causes of ethnic conflict<sup>40</sup> one recent, comprehensive and methodologically precise empirical analysis of the incidence of ethnic conflict in 115 countries spanning the years 1946 to 2005 stands out.<sup>41</sup> This study, the results of which were published in the *American Sociological Review* in 2009, covers the entire world. It records changes in power relations over time on the basis of input from some one hundred experts, in order to assess ethnic minority political participation and exclusion, and relates this to the statistical probability of the outbreak of armed conflict. One of the study's authors,

39. See, e.g., TD Fuller, 'Resettlement as a Desertification Control Measure: A Case Study in Darfur Region, Sudan—Part I: Review of the Problem' (1987) 25/4 *Agricultural Administration and Extension* 215–34.

40. See, e.g., DW Augsburg, *Conflict Mediation across Cultures: Pathways and Patterns* (Westminster / John Knox Press, Louisville, KY 1992); K Avruch, PW Black and JA Scimecca, *Conflict Resolution: Cross-cultural Perspectives* (Greenwood Press, New York 1991); EE Azar, *The Management of Protracted Social Conflict: Theory and Cases* (Gower, Aldershot 1990); J Coakley, *Paths towards Ethnic Conflict Resolution: The Comparative Dimension* (Routledge, New York, NY 2010); K Cordell and S Wolff, *Ethnic Conflict: Causes, Consequences and Responses* (Polity Press, Cambridge 2009); TR Gurr and B Harff, *Ethnic Conflict in World Politics: 2nd edn* (Westview Press, Boulder, CO. 2004); TR Gurr (ed), *Minorities at Risk: A Global View of Ethnopolitical Conflict* (United States Institute of Peace Press, Washington, DC 1993); TR Gurr, and JR Scaritt, 'Minorities Rights at Risk: A Global Survey' (1989) 1/3 *Human Rights Quarterly* 375–405; M Rabie, *Conflict Resolution and Ethnicity* (Praeger, Westport, Conn. 1994); M Howard Ross and J Rothman (eds), *Theory and Practice in Ethnic Conflict Management: Conceptualizing Success and Failure* (Macmillan, London 1999); V Volcan, *Blood Lines: From Ethnic Pride to Ethnic Terrorism* (Farrar, Straus and Giroux, New York 1997); V Volcan, 'A Psychoanalytic Perspective on Intergroup Hatred' (1998) 3/1 *Journal for the Psychoanalysis of Culture and Society* 78–80; and S Wolff, *Ethnic Conflict: A Global Perspective* (Oxford University Press, Oxford 2006).

41. A Wimmer, L-E Cederman, and B Min, 'Ethnic Politics and Armed Conflict: A Configurational Analysis of a New Global Data Set', (2009) 74/2 *American Sociological Review* 316–37.

University of California at Los Angeles Professor Andreas Wimmer, summarised the report's findings thus:

Countries that are ethnically diverse do not experience more conflict than their more homogenous counterparts .... Rather, conflict breaks out when large segments of the population are excluded from access to government because of their ethnicity.<sup>42</sup>

The study demonstrates that:

First, armed rebellions are more likely to challenge states that exclude large portions of the population on the basis of ethnic background. Second, when a large number of competing elites share power in a segmented state, the risk of violent infighting increases. Third, incohesive states with a short history of direct rule are more likely to experience secessionist conflicts. ... we show that rebellion, infighting, and secession result from high degrees of exclusion, segmentation, and incohesion, respectively. More diverse states, on the other hand, are not more likely to suffer from violent conflict.<sup>43</sup>

Thus, in relatively ethnically homogenous countries such as Japan and Korea, the risk of ethnic conflict, not surprisingly, remains low. The incidence of ethnic conflict is also low in highly ethnically diverse countries such as Tanzania, however. The countries most at risk for the outbreak of ethnic conflict were identified in the study as 'ethnocracies' where one ethnic minority having less than 20 per cent of the population excludes other groups from power, such as in Iraq during Saddam Hussein's rule, Rwanda since the Tutsi-led Government took power in 1994 and Sudan since its independence in 1956. In short, as co-author Professor Brian Min remarked in an interview on the study's results: 'It's not that people of different ethnic backgrounds can't get along because they have different cultures or creeds ... It's that political exclusion along ethnic lines stirs up trouble.'<sup>44</sup>

Similarly, taking account of several studies on the relationship between climate change and ethnic conflict, Raleigh and Urdal noted in a research paper entitled 'Climate Change, Environmental Degradation and Armed Conflict' that:

When controlling for income ... ethnic and religious diversity does not increase the risk of conflict [and] ... poverty, low economic growth and high dependence on primary commodity exports were important predictors of civil war, while ethnic and religious diversity as well as democracy did not affect the risk of war.<sup>45</sup>

42. See M Sullivan, *Study Explores Roots of Ethnic Violence*, UCLA International Institute, interview with Andreas Wimmer posted on 16 April 2009 at <<http://www.international.ucla.edu/print.asp?parentid=107085>>, last accessed 27 October 2010.

43. Wimmer et al. (n 41) at 316.

44. See Sullivan (n 42).

45. C Raleigh and H Urdal, 'Climate Change, Environmental Degradation and Armed Conflict' (Paper presented to the 47th Annual Convention of the International Studies Association, San Diego, California, 22–25 March 2006) at 3. The studies that Raleigh and Urdal, *ibid*, reviewed were: DC Esty, JA Goldstone, TR Gurr, B Harff, M Levy, GD Dabelko, P Surko and AN Unger (1998) *State Failure Task Force Report: Phase II Findings*; VA McLean, Science Applications International, for State Failure Task Force; W Hauge. and T Ellingsen, 'Beyond Environmental Scarcity: Causal Pathways to Conflict', (1998) 35/3 *Journal of Peace Research* 299–317; THP Wollebæk, NP Gleditsch and H Hegre, 'Shared Rivers and Interstate Conflict', (2000) 19/8 *Political Geography* 971–96; I de Soysa, 'Paradise Is a Bazaar? Greed, Creed, and Governance in Civil War, 1989–99' (2002) 29/4 *Journal of Peace Research* 395–416; and H Urdal, 'People vs Malthus: Population Pressure, Environmental Degradation, and Armed Conflict Revisited' (2005) 42/4 *Journal of Peace Research* 417–34.

Thus climate change and ethnic competition over resources by themselves do not adequately explain the outbreak of armed hostilities. There must be additional factors operating such as a sense of common cause felt by those affected as well as an absence of viable political or legal dispute resolution avenues through which people can find solutions and avoid future suffering.<sup>46</sup> Raleigh and Urdal concluded that climate change constitutes at most a weak factor in causing ethnic conflict.<sup>47</sup>

This is not to say that climate change *never* exerts more than a negligible effect on the likelihood of ethnic armed conflict occurring, but rather that as a contributing root cause of conflict it has to be understood in conjunction with other more direct causal factors, in particular the degree to which power is distributed equally in society, the level of respect for civil, political, economic, social and cultural rights for all groups in society, and the strength of the rule of law, poverty and population density, among other factors. As a recent study commissioned by the World Bank opined:

the empirical foundation for a general relationship between resource scarcity and armed conflict is indicative at best, and numerous questions regarding the proposed causal association remain to be answered. Several single-case analyses suggest that resource scarcity contributes to outbreak of organized violence, though always in interaction with exogenous conflict-promoting factors.<sup>48</sup>

High degrees of marginalisation, discrimination and persecution along ethnic lines are likely to raise the risk of the outbreak of protracted armed conflict and the infliction of severe violations particularly upon vulnerable civilian populations.

Thus, the more recent empirically based research shows only a very weak relation between ethnic competition for resources and the outbreak of armed conflict, which contradicts both UNEP's conclusion on this point and Ban's editorial opinion.

## 6 CLIMATE CHANGE, ETHIC CONFLICT AND VULNERABILITY

A more comprehensive way to understand excess mortality rates during the Darfur ethnic conflict in terms of climate change is to introduce into the picture a wider range of hazards and then to correlate these hazards to vulnerability and risk. This approach provides greater perspective for understanding the effects of climate change in Darfur by relating its mortality rates during the ethnic conflict to a broader range of factors.

In this connection, a study by Brooks, Adger and Kelly, published in 2005, develops a set of indicators applicable at the national level to measure vulnerability and adaptation capacity in relation to climate hazards. The authors relied on data retrospectively first to assess historical risk of mortality rates from climate-related disasters

46. Raleigh and Urdal indicate that: 'Grievances resulting from increased resource competition may cause violent conflict if two conditions are met. First, the aggrieved individuals need to participate in some sort of ethnic, religious, or class-based collective that is capable of violent action against the authorities. Second, the political structure must fail to give these groups the opportunity to peacefully express their grievances at the same time as it offers them the openings for violent action', *ibid*, at 5.

47. 'We find that, overall, medium to high levels of land degradation are related to increased conflict, although the additional risk is quite small. Furthermore, estimates for very high land degradation, which we assume would have the strongest impact on conflict risk, are not robust', *ibid*, at 22–3.

48. See H Buhaug, NP Gleditsch and OM Theisen, *Implications of Climate Change for Armed Conflict* (Study Commissioned by the World Bank Group 2008) at 2.

per decade in a particular country, using the relationship ‘risk = hazard × vulnerability’, and then introduced other relevant factors into the equation. These other factors were considered to be relevant if the proxy data ‘were significantly correlated with mortality risk at the 10% level’, in other words, if the correlation between two data sets produced probability at a certain level over what would have been produced by random results. As the level of harm likely to be suffered in any given country from climate-related disasters depends on a range of factors which *together* form the context that conditions vulnerability and adaptability to climate change, this methodology seems to offer a promising approach to better understand whether climate change kills people in Darfur. The factors selected as relevant determinants were validated and interpreted through expert rankings by way of focus groups in order to construct composite vulnerability indices.<sup>49</sup> Using this methodology, the authors identified the following indicators of vulnerability:

1. population with access to sanitation,
2. literacy rate, 15–24-year olds,
3. maternal mortality,
4. literacy rate, over 15 years,
5. calorific intake,
6. voice and accountability,
7. civil liberties,
8. political rights,
9. government effectiveness,
10. literacy ratio (female to male),
11. life expectancy at birth.<sup>50</sup>

Applying these indicators, the authors concluded that the ‘most vulnerable countries are nearly all situated in sub-Saharan Africa’ and that many recently had seen armed conflict. The Sudan figured among the most highly vulnerable of countries from climate-related disasters. The data were not disaggregated on a sub-national level to reveal the particular regional vulnerability of Darfur. In short, the question as to whether climate change kills people in Darfur can most usefully be viewed in the context of at least the above-specified indicators of vulnerability.

## 7 DOES CLIMATE CHANGE KILL PEOPLE IN DARFUR?

Climate change almost certainly kills people in Darfur by exacerbating desertification, reducing water supplies and lowering the fertility of farming and grazing lands, but not in the direct way that Ban suggested. In addition Ban’s view that climate change worsens the squabbling of ethnic groups over scarce resources until war breaks out is deeply flawed for several reasons.

49. See N Brooks, WN Adger and PM Kelly, ‘The Determinants of Vulnerability and Adaptive Capacity at the National Level and the Implications for Adaptation’, 15 *Global Environmental Change* (2005) 151–63 at 153. The authors explain that: ‘A focus group of experts in the field of climate impacts and vulnerability, convened in August 2003 in Southampton (UK), provided weightings and interpretation of the indicators identified ... This type of expert focus group is frequently used for the elicitation of both specific refining information and for the generation of new data and insights through direct interaction between participants.’

50. *Ibid.*, at 157.



First it fails to explain why some multi-ethnic communities beset with scarcity of food and water suffer from civil war and severe violations but many more do not. Moreover Sudan does not lack oil,<sup>51</sup> arable land or water resources.<sup>52</sup> On the one hand, Mr Abdul Rahim Ali Hamad, a minister of agriculture in Khartoum, stated that capital investments in Sudanese agribusiness rose from around USD 700 million in 2007 to USD 3 billion in 2009 and was expected to reach around USD 7.5 billion in 2010–11 from Arab countries: ‘Saudi Arabia, Qatar, Egypt, Libya, Syria and Jordan have invested heavily in Sudan for their food security needs since the largest African country enjoys a variable climate and heavy rainfall making it fit for growing wheat, citruses, animal feed and oilseeds.’ At the same time, the WFP in 2008 estimated that around 3.6 million people a month in Darfur needed food assistance and that ‘two truck drivers delivering food for WFP had been killed, 41 drivers were missing, and 83 trucks had been hijacked, with 55 still missing’.<sup>53</sup> Various UN agencies have long complained about attacks, mainly from Government and pro-Government militia, on UN humanitarian aid workers in Darfur, including those trying to deliver food and medicine.<sup>54</sup> Khartoum’s failure to address the severe humanitarian situation in Darfur and, even worse, in fact aiding and abetting Janjaweed militia to attack, pillage and burn villages, and to murder, rape, torture and drive out villagers while *exporting* food abroad points directly to the Government of the Sudan’s deliberate, long-standing and persistent marginalisation of Darfur and its peoples, rather than to the spontaneous outbreak of inter-ethnic squabbling over resources, too often simplified as struggles between ‘Africans’ and ‘Arabs’ or between nomadic herders and sedentary agriculturalists.<sup>55</sup> Even the African/Arab distinction has been more a consequence than a cause of Khartoum’s neglect of the Fur, Masalit and Zaghawa ethnic groups of Darfur as the UN Security Council’s Commission of Inquiry into the Situation of Darfur explained:

The distinction stems, to a large extent, from the cumulative effects of marginalization, competing economic interests and, more recently, from the political polarization which has engulfed the region. The ‘Arab’ and ‘African’ distinction that was always more of a passive distinction in the past has now become the reason for standing on different sides of the political divide.<sup>56</sup>

51. The US Energy Information Administration cites the Oil and Gas Journal to the effect that ‘Sudan had five billion barrels of proved oil reserves in January 2009 up from an estimated 563 million barrels in 2006’; at <<http://www.eia.doe.gov/emeu/cabs/Sudan/Oil.html>>, last accessed 27 October 2010. See also P Goodman, ‘China Invests Heavily in Sudan’s Oil Industry: Beijing Supplies Arms Used on Villagers’, *Washington Post*, 23 December 2004 at A01 at <<http://www.washingtonpost.com/wp-dyn/articles/A21143-2004Dec22.html>> last accessed 27 October 2010.

52. See ‘Sudan: Rich Farms, Conflict and Climate Change’ IRIN report of 22 May 2008 at <<http://www.irinnews.org/PrintReport.aspx?ReportId=78358>>, last accessed 27 October 2010.

53. See WFP’s website on its Sudan operations at <<http://www.wfp.org/countries/Sudan>> last accessed 27 October 2010.

54. See Final report of the UN Human Rights Council’s Group of Experts on Darfur; A/HRC/6/19 of 28 November 2007, Chapter IV(B) on the status of implementation of UN recommendations concerning humanitarian access at paras 39–44.

55. Y Bayoumy, Interview ‘Sudan Eyes Growth in Arab Agri-investment’ *Thomson Reuters*, 3 May 2009 at <<http://af.reuters.com/article/investingNews/idAFJOE54205C20090503>>, last accessed 27 October 2010.

56. See the Report of the International Commission of Inquiry on Darfur to the United Nations Secretary-General Pursuant to Security Council Resolution 1564 of 18 September 2004 of 25 January 2005 at para 60.

Few of these elements have entered into the astigmatic images of ethnic conflict in Darfur that have focused entirely on inter-ethnic fighting rather than the Government's failure to abide by the most basic norms of international human rights and humanitarian law.

Second, Ban's idea to stem ethnic armed conflict in Darfur through a policy of engagement with and massive development assistance to the Government of the Sudan ignores the dysfunctional state of Sudan's political system. Since its independence on 1 January 1956 until the time of writing the present article in 2010 the Sudan has had less than ten years of democratic governance (1956–58; 1965–69 and 1985–89). The rest of its recent political history has been dominated by coups d'état and military rule. The current Government has ignored dozens of expert recommendations offered to it from a wide range of UN agencies, bodies and programmes on how to improve human rights promotion and protection and to strengthen the rule of law, as thoroughly documented in the UN Human Rights Council Group of Experts on Darfur's final report of November 2007.<sup>57</sup> The Government of the Sudan has managed to solicit and misuse millions of dollars in development assistance funds while tightening its grip on power and persecuting the political opposition.<sup>58</sup> Transparency International rated Sudan as among the most corrupt countries in the world, ranking 176 out of 180. Only Afghanistan, Somalia and Myanmar were worse.<sup>59</sup>

Third, to ignore the patterns of entrenched political exclusion and persecution of certain ethnic groups in Darfur leads one to mistake also the locus of responsibility for the Government's indiscriminate use of force in counter-insurgency operations as well as its active support for pro-Government militia such as the Janjaweed. It diverts attention away from the Government's responsibility to stop violating human rights and humanitarian law and to surrender its Head of State and certain ministers and officials to the International Criminal Court to be tried for crimes against humanity, war crimes and possibly genocide in Darfur. As Julie Flint, co-author with Alex de Waal of a book entitled *Darfur: The Short History of a Long War*,<sup>60</sup> remarked in an interview with the Integrated Regional Information Networks (IRIN), to characterise the Darfur conflict as based primarily on resource competition 'whitewashes the Sudan government' because the war was caused by the Government's response to the rebellion not by conflict over resources.<sup>61</sup> A Human Rights Watch report of 21 January 2005 characterises the extreme character of the atrocities that have been perpetrated:

The government's campaign has combined two key elements with devastating consequences for civilians. One is the systematic use of indiscriminate aerial bombardment in North Darfur and to a lesser extent in West and South Darfur. The second is the deployment and coordination of ethnic proxy forces known as 'Janjaweed' militias who have been recruited from

57. See Final report of the UN Human Rights Council's Group of Experts on Darfur; A/HRC/6/19 of 28 November 2007.

58. See N Middleton and P O'Keefe, 'Politics, History & Problems of Humanitarian Assistance in Sudan' (2006) 33 (109) *Review of African Political Economy* 543–59.

59. See the Corruption Perceptions Index 2009 at the Transparency International website at <[http://www.transparency.org/policy\\_research/surveys\\_indices/cpi/2009/cpi\\_2009\\_table](http://www.transparency.org/policy_research/surveys_indices/cpi/2009/cpi_2009_table)>, last accessed 27 October 2010.

60. J Flint and A de Waal, *Darfur: A New Short History of a Long War: 2nd edn* (Zed Books, London 2005).

61. See IRIN, *Climate Change – Only One Cause among Many for Darfur Conflict*, IRIN, 2007; <<http://www.irinnews.org/Report.aspx?ReportId=72985>> last accessed 27 October 2010.

landless Arab nomadic tribes, some of whom have been involved in past clashes with the farming communities branded as supportive of the rebels. Almost all of Darfur's population has been affected by the conflict, either directly through attacks on villages, killings, rape, looting and destruction of property and forced displacement, or indirectly through the near total collapse of the region's economy.<sup>62</sup>

Like many other human rights non-governmental organisations, Human Rights Watch considered that the Government's deliberate persecution of the Fur, Masalit and Zaghawa ethnic groups amounts not only to crimes against humanity and war crimes, but perhaps genocide as well.<sup>63</sup>

In short, climate change may be killing people in Darfur by increasing stress on the ecological system, worsening malnutrition and disease, reducing access to food and water through desertification and throwing human security into jeopardy in other ways, but evidence as to its role as a direct cause of ethnic armed conflict appears to be non-existent or weak. The point is not that the impact of climate change on human security is illusory, but rather that this should not be confused with supposing a direct or sole causal connection between climate change and ethnic armed conflict, unless sufficient empirical evidence can be produced to prove it.

## 8 SOME CONCLUDING REFLECTIONS ON METHODOLOGICAL PARAMETERS FOR CONSIDERING THE ROLE OF CLIMATE CHANGE IN ETHNIC ARMED CONFLICT

The question that must be asked therefore is: 'how should climate change, which clearly has a negative effect on human security, be considered in relation to ethnic armed conflict'?

First the effects of climate change on the enjoyment of human rights should not be neglected or ignored. The various ways in which climate change threatens or harms human security have been well documented, and many of these clearly have human rights implications which might in some situations raise tension and, together with other factors, contribute to the outbreak of armed conflict. As a number of delegates were reported to have emphasised during the Human Rights Council's Panel Discussion on the Relationship between Climate Change and Human Rights, held on 15 June 2009, recognition of this relationship helps to maintain attention on individuals and communities. Moreover, dealing with climate-change issues within the human rights framework facilitates the participation of individuals and groups most affected by climate change and opens up avenues for 'holding governments accountable to reducing the vulnerability of their populations to global warming'.<sup>64</sup> Finally policies to reduce causes of climate change and to promote adaptation strategies should be developed in line with applicable international human rights standards which can be facilitated through UN and regional human rights frameworks.

62. See *Targeting the Fur: Mass Killings in Darfur*, Human Rights Watch report of 21 January 2005 at 2.

63. *Ibid*, at 3–4.

64. See Summary of Discussions of the Human Rights Council Panel Discussion on the Relationship between Climate Change and Human Rights, 15 June 2009, Palais des Nations, Geneva, Switzerland; <<http://www2.ohchr.org/english/issues/climatechange/panel.htm>>, last accessed 27 October at para 55.

Secondly climate change has to be understood only as a possible and normally indirect cause of ethnic conflict. This point was also underscored by a number of government delegations at the above-mentioned Human Rights Council's climate change panel discussion. The Government of Canada, for example, contended that States had a responsibility to prepare for, prevent and respond to natural disasters, but it doubted whether climate change related *directly* to responsibility for human rights violations. Similarly the United States Government acknowledged that climate change reduced the full enjoyment of human rights, but argued that climate change was not *directly* tied to human rights obligations. Along the same lines Switzerland averred that the effects of climate change had to be considered together with other factors that conditioned the enjoyment of human rights. Mauritius commented that climate change hampered the realisation of the Millennium Development Goals and thereby lessened human rights indirectly.<sup>65</sup>

Thirdly, in terms of methodology, the effect of climate change in increasing the risk of ethnic conflict and serious violations of human rights and humanitarian law has to be considered fully but without unduly overshadowing much more direct socio-economic, military and political factors. UNEP's self-contradictory approach in deciding not to consider political and historical factors in carrying out its post-conflict environmental assessment of the situation in the Sudan on the one hand, but then to posit 'a very strong link between land degradation, desertification and conflict in Darfur' on the other hand, fails the basic requirement of methodological coherence. Consideration of the impact of climate change on the enjoyment of human rights has to be framed in a specific and precise enough manner in order to arrive at verifiable and falsifiable hypotheses that can be proved or disproved by recourse to replicable surveys, analysis of empirical data and objective interpretation. Is climate change really a determinative factor in human rights violations in a particular situation and if so, to what quantitatively measurable extent? Is it possible to identify climate change as a *proximate cause* in reducing the enjoyment of specific human rights in particular instances?

Fourthly the study of the Office of the UN High Commissioner for Human Rights on climate change and human rights acknowledged that while 'climate change has obvious implications for the enjoyment of human rights, it is less obvious whether, and to what extent, such effects can be qualified as human rights violations in a strict legal sense'.<sup>66</sup> Not only is the causal relationship between climate change as a sole or main factor in harming the enjoyment of human rights in most cases very difficult to establish, but it may also be problematic to identify a particular State responsible for such harm, and this has to be proven in particular cases, not assumed in advance.

Fifthly it is important to recall that in dealing with climate change-related problems, for example, in relocating population from flood-affected areas or in conducting humanitarian relief operations, such as those involving distribution of food and water, States must implement measures on a non-discriminatory basis and in a manner that conforms fully to human rights standards.<sup>67</sup> Individuals and groups affected by climate change or by the State's measures to halt or prevent damage caused by climate change should be fully consulted through democratic processes to the maximum

65. Ibid.

66. Report of the Office of the United Nations High Commissioner for Human Rights on the Relationship between Climate Change and Human Rights; A/HRC/10/61 of 15 January 2009 at para 70.

67. Ibid, at paras 71–3.

extent possible. In this regard, the OHCHR study's section entitled 'Guiding principles for policymaking' rightly underlines 'the importance of aligning climate change policies and measures with overall human rights objectives, including through assessing possible effects of such policies and measures on human rights'.<sup>68</sup> Moreover, particular attention should be paid to the effect of climate change on distorting access to income, wealth and opportunity, and to specially disadvantaged groups such as women, children, migrant workers, refugees and internally displaced persons, and ethnic minorities who may not enjoy equal access to justice. Wall's analysis, as noted above, implies just this kind of attention to structural injustice, but 'ontological vulnerability' arguments arguably need to adapt their terminology to embrace more readily the accepted, very vibrant and constantly evolving terminology of international human rights law; terminology that represents the objective political will of the international community at large, including not only States and international organisations, but civil society, human rights defenders and victims among many others. Without greater acknowledgement, within such approaches, of the sense in which vulnerability is already a key theme of such discourse, vulnerability theorists may run the risk of speaking only to each other rather than entering into, or contributing much of meaning to the human rights debate. In particular, vulnerability approaches and their potential relevance to Darfur require a concrete assessment of the vulnerability of people in Darfur to climate-change effects and must be empirically well informed and analytically precise.

To summarise, a sound approach to understanding the role that climate change might play in ethnic conflict should:

1. Take into account the possible impact of climate change on the enjoyment of human rights with particular attention to providing protection to those most affected, and especially vulnerable populations, because diminished human rights enjoyment coupled with persistent marginalisation and unequal access to justice over a longer period of time, could contribute to the transformation of ethnic tensions into open armed conflict;
2. Understand climate change as a possible and normally *indirect* cause in spurring the outbreak of ethnic conflict and exercise care in attributing legal responsibility to a State or other territorial authority for possible internationally wrongful acts;
3. Consider the possible climate change and ethnic armed conflict relationship fully without crowding out analysis of more direct military, political and socio-economic factors. Methodologies on the effects of climate change on inter-ethnic relations and enjoyment of human rights should employ verifiable and falsifiable hypotheses amenable to empirical testing and statistical interpretation;
4. Avoid the assumption that the effects of climate change automatically involve a direct violation of human rights. This is a matter of factual proof and attribution of legal responsibility to a State or other international legal subject; and
5. As regards measures States may take to curb or prevent climate change, pay attention to possible distortions in the distribution of power, income, wealth and opportunity, access to and control over resources in society, with particular care for the plight of women and children and other social groups who may already have suffered persistent marginalisation and unequal access to justice.

68. Ibid, at para 80.

These methodological parameters imply that international environmental law, international human rights law, international refugee law and international humanitarian law, supplemented where appropriate by international criminal law, together provide a well-established, accepted and universal normative, theoretical and practical framework for understanding and addressing the relation between climate change and human well-being in general, and between climate change and the outbreak of ethnic armed conflict in particular. In this light, vulnerability and adaptation studies supply invaluable information in the tracing of such relationships and factors, and while the notion of 'ontological vulnerability' is not without promise, it is vital for theoretical approaches adequately to be supplemented by a certain level of concrete, empirical study if they are to translate into more than theoretical insights. Vulnerability, of all elements of human experience, requires a substantive, empirical, materially oriented response – and it is suggested that existing international, regional and domestic law and policy do provide normative definitions, indicators and implementation frameworks that can be very helpful in developing this kind of methodological response.