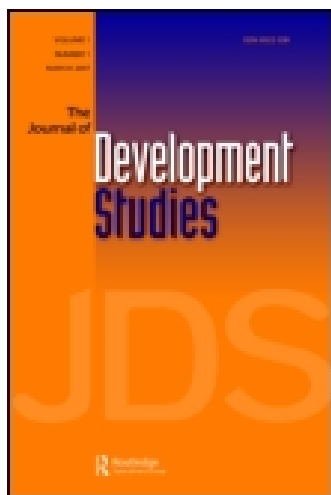


This article was downloaded by: [Florida Institute of Technology]

On: 30 June 2014, At: 22:47

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



## The Journal of Development Studies

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/fjds20>

### Climate Change and the Future of Caribbean Development

Matthew Louis Bishop<sup>a</sup> & Anthony Payne<sup>b</sup>

<sup>a</sup> Institute of International Relations, University of the West Indies, Trinidad and Tobago

<sup>b</sup> Department of Politics, University of Sheffield, UK

Published online: 22 Aug 2012.

To cite this article: Matthew Louis Bishop & Anthony Payne (2012) Climate Change and the Future of Caribbean Development, *The Journal of Development Studies*, 48:10, 1536-1553, DOI: [10.1080/00220388.2012.693166](http://dx.doi.org/10.1080/00220388.2012.693166)

To link to this article: <http://dx.doi.org/10.1080/00220388.2012.693166>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms & Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

# Climate Change and the Future of Caribbean Development

MATTHEW LOUIS BISHOP\* & ANTHONY PAYNE\*\*

\*Institute of International Relations, University of the West Indies, Trinidad and Tobago, \*\*Department of Politics, University of Sheffield, UK

*Final version received March 2012*

**ABSTRACT** *Climate change is rapidly becoming the defining feature of the Caribbean developmental landscape. Yet theoretical and practical responses to the issue have been somewhat limited, particularly in terms of the socio-economic and political dimensions. This article begins by tracing the dramatic impact that climate change presages for Caribbean development. It then moves on to an analysis of how the region is attempting to respond at the global, regional and national levels. We then question the significance of this for Pan-Caribbean development, before pointing the way to a nascent research agenda with the political economy of climate change at its heart.*

It has been recognised for some time that environmental issues are coming to have a significant impact upon Caribbean development. In particular, climate change has moved rapidly up the agenda to become a defining feature of the region's development landscape. Moreover, given its intrinsic trans-boundary nature, it will, over time, come to impact upon the political economy of every territory of the region in broadly similar and possibly dramatic ways. In this sense, it is the ultimate Pan-Caribbean issue. Despite this growing salience, a number of gaps exist in both the general and the specifically Caribbean academic literature on the subject. The former has tended to be technical in nature, focusing on the 'science', rather than the wider 'social science', of climate change. The latter has been sparse, with the consequence that practical attention to the amelioration of problems has been, at best, piecemeal.

This article attempts to build on the limitations of these current analyses. First, we present the threat of climate change as a Caribbean-wide issue, casting light directly on the relationship between climate change and development at the regional level. Second, we chart the ways in which Caribbean approaches to its management and mitigation are emerging, analysing responses globally, regionally and nationally. Third, we consider what this means for the question of how Caribbean development is conceived, understood and pursued. In sum, we offer the first 'big picture' analysis of climate change politics across the Caribbean by mapping key debates and issues and outlining a path towards a nascent social sciences research agenda for the region that has climate change at its heart.

We shall not dwell for long on general scientific debates pertaining to climate change, largely because there is considerable agreement in the scientific community regarding the nature of the phenomenon, albeit one fully acknowledging that 'the specific processes and impacts ... involve

---

*Correspondence Address:* Matthew Louis Bishop, Institute of International Relations, University of the West Indies, St Augustine, Trinidad and Tobago. Email: matthew.bishop@sta.uwi.edu

considerable uncertainty' (Hepburn and Stern, 2009: 36). As Matthew and Hammill (2009: 1124) have argued, despite this continuing, inevitable ambiguity, scientists 'are fairly unified in predicting that the world ought to act aggressively to reduce greenhouse emissions and try to stabilise the world's climate'. There is consequently some consensus on the need to stabilise the levels of carbon dioxide (CO<sub>2</sub>) and other greenhouse gases in the atmosphere at somewhere between 450 and 550 parts per million (ppm), levels which we are fast approaching (Stern, 2007, 2008). Such a stabilisation should, in turn, ensure that global warming is limited to approximately 2°C, thus averting the worst scenarios of changed weather patterns and sea-level rise. These figures are, in fact, somewhat higher than the 350ppm and 1.5°C targets campaigned for by the world's small island states, including those in the Caribbean, which stand to become by far the biggest victims of climate change (and also, arguably, those least responsible for it). It is important, nevertheless, to emphasise the relative future uncertainty of the crisis. Although, as indicated, most scientists are now in broad agreement that climate change is real and poses grave challenges, the terrain upon which their debates take place is constantly shifting as new evidence emerges (see Dessler and Parson, 2006; Kolbert, 2007). The point is that it is notoriously difficult to agree common solutions to problems which are intrinsically diffuse, difficult to grasp and not yet quite upon us in all their implications.

As a result, most commentators are sceptical about the likelihood of the 2°C limit being achieved – let alone 1.5°C – which serves to highlight how hard it has proved thus far for economic, social and political actors to get to grips with climate change as a policy issue. As Giddens (2009: 4, emphasis in original) has argued, 'at present, *we have no politics of climate change*', by which he means that we lack 'a developed analysis of the political innovations that have to be made if our aspirations to limit global warming are to become real'. Within this political vacuum a range of asymmetries exist between the relative capacity of different actors to make their voices heard and the relative positions of societies within the global politics of climate change, particularly as regards their precariousness in the face of its effects. Consequently, debates abound about how climate change should be addressed, running from technical approaches that might contain it to more abstract questions of responsibility and equity. The latter issue is critical from a political perspective (and indeed is where the link to development becomes most explicit). As with other elements of the climate change problematic, a complex range of inequalities exists between those countries considered to be rich and those considered to be poorer, those which are heavy emitters and those which are not, and, of course, those with some relative capacity to respond and others – such as the islands of the Caribbean – which will suffer disproportionately the most negative outcomes.

Unsurprisingly, the emergent climate change regime that has built up at the global level over the past several years has struggled to cope with the extent of these inequalities. At the most basic level, a binary division of responsibility between 'developed' and 'developing' countries has been embedded within official debates, which in turn mirrors the preferred discourse of many non-governmental organisations (NGOs) and thus contributes to the persistence of what Depledge and Yamin (2009) call a 'dysfunctional North-South politics'. They note how such a 'two-way split is utterly at odds with the reality of country circumstances relative to climate change, instead reflecting longstanding ideological differences and political allegiances'. Moreover, as a result, 'the regime's rules may have contributed to entrenching, and even accentuating, the pre-existing North-South divide' (Depledge and Yamin, 2009: 444). The problem with such a conceptualisation, simply put, is that it does not even come close to capturing the much more complex reality of 'unequal development' within a contemporary global political economy in which such crude distinctions have long since lost their relevance (Payne, 2005). For the 'Small Island Developing States' (SIDS) – which, as Wong (2010: 1) notes, comprise a diverse grouping wherein some are not, strictly-speaking, 'small', 'islands' or 'states', yet share 'a distinctive character or uniqueness' and an extreme vulnerability to climate change – continued procrastination makes it ever more likely that they will face 'significant, if not catastrophic impacts' (Barnett and Campbell, 2010: 109).

### **Climate Change and Caribbean Development**

The Caribbean is distinguished, above all, by its diversity. Even the definition of the region has been a bone of contention: partly because of historical differences imposed by different colonising powers, partly by geography, and partly by the wide range of contemporary governance and political arrangements. Some have preferred to consider only the islands as properly representative of the Caribbean (though usually including Guyana, French Guiana and Suriname on the South American mainland because of their social contiguity with the rest of the region). Others have taken a much wider view, considering all the islands and continental territories washed by the Caribbean Sea as constituting the region. The five countries in Table 1 have been chosen accordingly as reflective of the range of differences that exist.

As the table suggests, Caribbean countries vary considerably in GDP per capita, development levels and size of both territory and population, as well as in the extent and nature of climate change vulnerability, related environmental concerns and, of course, capacity to respond. At the extremes, Barbados and Trinidad and Tobago (T&T) have relatively high levels of GDP per capita, whereas Guyana is much poorer. Barbados and Dominica are small islands, yet Guyana and Cuba possess significant land-masses. Barbados is one of the most densely populated countries in the world, is flat and has an extremely low water table and severe pressure on natural resources from its extensive tourism development (in turn rendering the country highly import-dependent with acute levels of commodity and land price inflation). Cuba, by contrast, has been much more successful in terms of domestic production of key goods (in particular, food), has serious technical capacity and has been actively reforesting. Guyana, however, is one of the least densely populated countries, yet shares many of the problems that afflict the island Caribbean: approximately 90 per cent of its population live in the capital Georgetown, a low-lying coastal city prone to debilitating floods. Trinidad and Tobago has a thriving hydrocarbon economy and serious industrial capacity, yet is also one of the highest per capita CO<sub>2</sub> emitters globally – even though, in absolute terms, it is responsible for barely 0.17 per cent of the global total (World Bank, 2010). Dominica consists largely of mountainous primordial forest surrounded by black sand beaches, something which has deterred extensive tourist development and its attendant pressures. The island is also relatively energy secure, producing over half of its electricity needs by hydropower.

Despite these specific differences, the territories of the Caribbean are united in broadly similar ways by the evolving reality of climate change. Moreover, Caribbean vulnerability has been exacerbated by the prevailing models of development that have been practised over the years. For example, the pervasive historical dependence upon the production of primary commodities like bananas and sugar has inhibited diversification, and hence the potential resilience, of many territories. Tourism, which has replaced declining export agriculture in many places, brings new problems. As described in Pattullo's (2005) classic study, the industry is predicated upon a range of environmental tensions which are intrinsically difficult to resolve, and particularly so in the most heavily tourism-penetrated region in the world. The dependence upon air travel, the tendency of cruise liners to pollute the Caribbean Sea, the wider issue of heavy exploitation of uniquely delicate eco-systems, all render the industry's developmental benefit, at best, ambiguous (Bishop, 2010).

Mention should be at least briefly made of the situation of Haiti, a country which, because of its longstanding lack of development of any type, is today almost totally deforested. Such a state of affairs partly explains the severity of the impact of the 2010 earthquake and leaves the country nakedly exposed to further extreme weather events. In a sense, Haiti provides a harbinger to the rest of the region of the potentially catastrophic implications of climate change. In such circumstances, the consequences of the hurricanes and tropical storms, to which the region is particularly vulnerable, are only likely to intensify (CANARI, 2008).

Islandness is another important aspect of the environmental challenge. Sea-level rise threatens severe coastal encroachment, exacerbating the consequences of droughts and the depletion of

Table 1. Key climate change indicators in selected Caribbean countries

	Barbados	Cuba	Dominica	Guyana	Trinidad and Tobago
Territory	Small, low-lying island in Eastern Caribbean (430 km <sup>2</sup> )	Large island in Greater Antilles (110,860 km <sup>2</sup> )	Small, volcanic island in Eastern Caribbean (750 km <sup>2</sup> )	Large Amazonian country in north-eastern South America (214,969 km <sup>2</sup> )	Twin-island state in Southern Caribbean (5,128 km <sup>2</sup> )
Population (2011 est.)	286,705	11,087,330	72,969	744,768	1,227,505
GDP (2009 USD)	\$3.595 billion	\$62.705 billion (2008)	\$377.711 million	\$2.026 billion	\$21.204 billion
GDP per capita (2009 USD)	\$15,841	\$5,596 (2008)	\$5,132	\$2,656	\$14,050
HDI value (2011 rank)	0.788 (42)	0.76 (53)	–	0.611 (104)	0.736 (59)
GDP composition	Agriculture (3.4%) Industry (14%) Services (82.6%)	Agriculture (4%) Industry (21.8%) Services (74.2%)	Agriculture (19%) Industry (23.2%) Services (57.8%)	Agriculture (24%) Industry (24.5%) Services (51.5%)	Agriculture (0.4%) Industry (58.8%) Services (40.8%)
Annual CO <sub>2</sub> emissions (2007 kt)	1,344.69	27,032.99	120.91	1,505.9	37,006.4
CO <sub>2</sub> emissions per capita (2007 mt)	5.28	2.41	1.66	1.97	27.86
Major environmental issues	Coastal erosion, sea-level rise, water insecurity, high population density, coral bleaching, hurricanes	Coastal erosion, sea-level rise, air and water pollution, deforestation, loss of biodiversity	Coastal erosion, sea-level rise, hurricanes	Coastal erosion, sea-level rise, flooding, water pollution, deforestation	Coastal erosion, sea-level rise, soil erosion, industrial pollution
National climate change plan	National Assessment Report on Mauritius +5 for BPOA 2010	National Assessment Report on Mauritius +5 for BPOA 2010	First National Communication to UNFCCC 2001	Climate Change Action Plan, to UNFCCC 2001	National Assessment Report on Mauritius +5 for BPOA 2010

Sources: World Bank Development Indicators, CIA World Factbook, UNDP Human Development Index, UNFCCC.



freshwater resources (Cashman et al., 2010). As DeSombre (2006: 97) has argued generally, ‘rising sea levels will inundate populated areas inhabited by millions of people, and changing patterns of temperature and rainfall will affect food production, disease vectors, and impact the health or even survival of species and ecosystems’. The Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) predicted with ‘very high confidence’ that many small Caribbean islands face the prospect of seriously compromised water sources due both to dryer summers and the intrusion of seawater into freshwater resources. The IPCC also predicted with ‘high confidence’ that tropical islands more broadly – particularly those at higher latitudes – ‘are virtually certain to be colonised by non-indigenous invasive species’ (Mimura et al., 2007: 689). Moreover, the very fact that most Caribbean territories *are* islands – and, in many cases, tourism-dependent islands – means that their coastal zones are both defining of their essence, and acutely sensitive. A high proportion of Caribbean people either live by, or derive their living from, the coast, which thus comprises a crucial element of both the islands’ biodiversity and their income-generating capacity, as well as constituting something of intrinsic cultural significance.

The islands are also likely to be further disproportionately affected on account of their diminutive size, relatively high population densities, lack of resources and indivisibility of costs (Briguglio et al., 2008: 65). In addition, there exists in the region a range of what Watts (2007) has called ‘grey issues’, such as energy, food and human security, as well as access to clean water, sanitation and the broader resource-depletion problematic, all of which are central to effective adaptation and yet likely to be compromised by climate change. By virtue of being highly dependent upon the outside world for almost every aspect of their political economies, all small states are extremely vulnerable to sudden and unpredictable changes in their terms of engagement with the global order (see Bishop, 2012). Fluctuating prices, general environmental catastrophes (such as oil spills) and other unimagined events impact rapidly and heavily. They are also disproportionately less able than richer countries to fund adaptation. As Ralph Gonsalves, the Prime Minister of St Vincent and the Grenadines, recently lamented, ‘over 80 per cent of our major infrastructure is located along our coastline, within a few feet of the inexorably rising seas’, with the result that ‘the costs of adaptation and preservation of our infrastructural developments are daunting, and beyond our individual capacity to address’ (cited in Sanders, 2010b). Faced with similar threats in the Indian Ocean, the Maldives has moved to create a sovereign wealth fund to purchase land for resettlement, possibly in Australia. Yet, even discounting the social implications, such an approach is likely to be beyond the debt-burdened governments of the Caribbean. Moreover, as Adger (2010: 287) suggests, ‘while such a strategy may be judged an effective adaptation, it demonstrates the dimensions of disempowerment that are inherent in adapting to the imposed harm of climate change’.

Nonetheless, although the overall tenor of the Caribbean climate change predicament is undoubtedly troubling, a number of responses have been and are being made, some of which are not without positive dimensions. These can be divided into emerging patterns of reaction at the global, regional and national levels, and it is to analysis of each that we now turn.

### Caribbean Responses 1: The Global Level

The Caribbean has actually enjoyed a relatively prominent and influential position within global environmental politics, certainly when compared to other leading policy arenas such as trade and finance. Operating mostly through the Alliance of Small Island States (AOSIS), which was established in 1990 and comprises 42 members drawn from the world’s low-lying and coastal states,<sup>1</sup> Caribbean territories have been vocal, organised and effective in the realm of environmental diplomacy ever since the first United Nations Conference on Environment and Development held in Rio in 1992, demanding reductions in CO<sub>2</sub> and rates of deforestation, as well as financial support for climate change mitigation and adaptation (Payne, 2005: 208). Part of the explanation lies in the obvious ‘extreme vulnerability’ of the region on this front, and part

in the effective coordination of the AOSIS Secretariat in New York (Yamin and Depledge, 2005: 38). This has been facilitated by the fact that New York is one of the few places where SIDS, as a whole, have any kind of critical diplomatic mass, and also by the UN-oriented character of the climate change regime. The region has also been aided by a range of innovative diplomatic strategies deployed by AOSIS. These include the ‘moral power’ that derives from ‘appeals to principles and norms’ such as ‘common interest’, and also the clever utilisation of the capacity of well-resourced lobby groups and NGOs (Betzold, 2010: 136). Moreover, at times, SIDS have been taken seriously on account of the stark evidence that they embody regarding the reality of climate change, the immediacy of its effects and the truly existential nature of the threat that it poses to them individually: they consequently present themselves ‘not as value-claiming parties vying for relative gain, but as the “canaries in the coalmine” in a tragedy of the commons that is unfolding for all states’ (Benwell, 2011: 208).

The AOSIS approach grew out of the Barbados Programme of Action (BPOA), which was established shortly after Rio, and stressed the special and precarious position of SIDS vis-à-vis climate change (United Nations, 1994). A decade later, this was reviewed at a follow-up conference in Mauritius, which had developed from the World Conference on Sustainable Development held in 2002. The concluding report (United Nations, 2005) noted the need for a ‘Mauritius Strategy’ to entrench further the BPOA, with assessments taking place around 2010 (and dubbed Mauritius+5). Alongside the standard reaffirmations of the Rio process and specification of the special needs of SIDS themselves, what is striking about the more recent discussions is the added sense of urgency. The report thus ‘reiterate[s] that the acknowledged vulnerability of small island developing states continues to be of major concern and that this . . . will grow unless urgent steps are taken’ (United Nations, 2005: 2). Influenced by the increasing prevalence of unpredictable weather events and improvements in climate science, it especially highlighted the need for improved early warning and mitigation systems, as well as technology transfer and the provision of financing from the richer parts of the world.

It was under the AOSIS banner that most of the independent Caribbean, including the larger states, such as the Dominican Republic, Jamaica, Haiti and Cuba, along with the non-independent Dutch territories and the US Virgin Islands which have observer status, prepared for the Copenhagen Conference of the Parties (COP-15) of late 2009. Along with similarly affected Pacific Island states, they ran a well-organised and vocal campaign, demanding ‘urgent, ambitious and decisive action to significantly reduce emissions of all greenhouse gases. . . and to support SIDS, and other particularly vulnerable countries, in their efforts to adapt to the adverse impacts of climate change’ (AOSIS, 2009). Integral was their demand for the 1.5°C warming target discussed earlier, grounded in an impassioned analysis of the disproportionate impact they will suffer from sea-level rise (CARICOM, 2009). However, the AOSIS grouping was largely marginalised within the politics of Copenhagen, which revolved principally around the position of China and the other so-called emerging countries, and ultimately was left stranded by the general failure to reach a meaningful deal.

Although SIDS were bound to be in an intrinsically weak position at the Copenhagen talks because of their slight diplomatic weight, Sanders (2010a) has noted that there was also a failure of tactics on their part. Specifically, he has argued that, notwithstanding the fact that ‘they work assiduously among themselves to reach consensus positions’, they failed to recognise the shifting dynamics of climate change politics, and, in particular, the need to develop a common approach to the ‘big four’ emerging countries within the regime: Brazil, India, China and South Africa. The explanation is that SIDS have been squeezed by some very complex shifting dynamics both between the bigger emerging countries and the rich world, on the one hand, and within the developing world, on the other, in turn evincing the ‘North-South’ problem described earlier. In terms of the former issue, as Tuvalu’s chief negotiator, Ian Fry, noted in the aftermath of Copenhagen, the wider failure of the talks can be attributed, first, to the fact that a US government, stymied by its Congress, could never have signed a binding deal, which in turn caused China to drag its feet, and, second, to the reality that, between these big powers, ‘there are

other games to play in regards to bi-national negotiations' beyond climate change of which the marginalised small states are unaware (Fry, cited in Block, 2010).

Coming to the latter issue, tensions within the developing world, which have been bubbling away for many years, have surfaced. For a long time, the Group of 77 (G77) played a crucial coordinating role in helping developing countries forge common positions on areas of shared interest (see Williams, 2005). However, this disguises a contemporary pattern of seriously divergent interests, as the G77 (plus China) contains within it a number of different groups: many bigger polluters, notably Brazil, India, China and most other large emerging countries; all non-Western oil-producing states; the least-developed countries, which are able to access certain sources of finance on favourable terms; and most – but not quite all – of the AOSIS states themselves. The fundamental problem for SIDS is that the basis of the G77 approach to climate negotiations has been a collective position which asserts that *no* developing country should be bound by an emissions deal; yet, in turn, this has simultaneously served to harden the positions of the US and Europe vis-à-vis China, India, Brazil and others, as well as making AOSIS party to a position which serves the interests of the different groupings within the G77, but not, paradoxically, its own members. No AOSIS states are big polluters in absolute terms; few produce significant amounts of hydrocarbons; and few are among the very poorest states in the world. Moreover, the G77 position has long contrived to prevent a global deal being reached, thus delaying agreement on the adaptation financing which AOSIS countries desperately need.

COP-17 in Durban in December 2011 did finally see an initial agreement reached to place binding targets on developed and developing countries alike, and this came as something of a surprise to many commentators; the prevailing assumption was that Copenhagen had actually been a relative high point in climate change diplomacy overall, illustrated by the continued evaporation of commitment to a binding rules-based settlement that had characterised COP-16 in Cancún in 2010. Even so, the so-called 'Durban Platform' has a long road to travel until (and if) binding commitments become a reality, with 2015 the proposed deadline for a protocol to be devised, and 2020 the deadline for its initial implementation (Conference of the Parties, 2011). If the early scientific reaction is an accurate guide, the actual size of emissions reductions – even in the event of a fully-implemented Durban deal – will be unlikely to meet a 2°C stabilisation, certainly not 1.5°C, and could lead to as much as 4°C of warming. Lord Stern was consequently moved to describe the accord, at this stage, as no more than 'a modest, but significant step forward' (cited in Harvey and Vidal, 2011). For AOSIS it would seem that the 1.5°C campaign has reached its limits. One Caribbean technocrat has even questioned whether it was ever the shrewdest approach anyway, arguing that an emphasis on sea-level rise would potentially have better concentrated the minds of other countries than the inherently more abstract figures about increases in temperature.<sup>2</sup>

Politically, then, until the repercussions of COP-17 become clearer and suggest otherwise, it remains reasonable to presume that, as Brazil, China and India especially become steadily more influential in a range of diplomatic arenas, their interests and negotiating strategies are likely to become increasingly at variance with the interests of AOSIS (Kasa et al., 2008). In addition, the changing character of the regime presages other potential problems for small states too. As we suggested earlier, the fact that climate change politics have long been embedded explicitly within the UN system has helped AOSIS. However, as Khor (2011) has noted, climate change diplomacy has for some time been taking on some of the 'green room' characteristics of World Trade Organisation talks, where bigger players effectively make decisions by imposed consensus – a principle which is, in theory at least, anathema to the UN – to the exclusion of smaller ones. This was evinced clearly by the way that the COP-17 decision was finally agreed: a so-called 'huddle' between the US, India, Brazil, China, Britain, France, Sweden, Poland and Gambia, with the remaining 100-plus delegates looking on and waiting to acquiesce in an acceptable decision.

The relative marginalisation of SIDS is perhaps most evident in relation to climate financing for adaptation. For all small states, mitigation (reduction of domestic emissions) is infinitely less



critical than adaptation (establishing policies and infrastructure to cope with the effects of climate change). Yet the continued impasse – until, again, perhaps at Durban – on a global mitigation package has hampered the release of funds for adaptation. Moreover, while the international focus has been largely on securing agreement on global mitigation, the principle of adaptation itself has remained secondary. In recognition of this, one of the few positive features emerging from Copenhagen was the pledge by rich countries to release by 2012 US\$30 billion in ‘fast-start climate finance’, rising to US\$100 billion per year by 2020 (Timmons Roberts et al., 2010). Aside from perennial concerns about transparency, the recycling of commitments and the yawning gap between money committed and pledged, there exist a number of further problems for small states.

First, just US\$2.9 billion of the fast-start funds had been earmarked for adaptation efforts by late 2010, which is roughly 10 per cent of the total committed, and far less than the ‘balanced allocation’ between mitigation and adaptation promised at COP-15.

Second, all developing countries are able to access adaptation financing, and SIDS have limited advocacy capacity to help them gain a slice of what is still a relatively meagre pie; there is no mechanism in place to ascertain which states are most in need of adaptation finance; and the vast majority of the money (all but approximately US\$250 million) is being channelled through either the World Bank or Western NGOs and donor agencies, rather than the UN Framework Convention on Climate Change (UNFCCC), itself ‘the most appropriate institution to make this and other key decisions about adaptation financing’ (Ciplet et al., 2010: 4).

Third, and related, the definition of adaptation is highly contested, with, for example, the oil-producing members of the G77 being extremely vocal about how adaptive support for their transition to a low-carbon economy is equally as important as the fall-out from rising sea-levels and myriad other climate-related problems that existentially threaten SIDS (Chandani and Siegele, 2010: 2).

Fourth, even were the fast-start funds effectively mobilised, it is far from clear that, by 2020, US\$100 billion per year would be forthcoming and, in any case, this falls far short of the sum required for meaningful adaptation by developing countries as a whole (Khor, 2011).

Finally, there remains the more specific question about where the Caribbean fits into this picture. On the one hand, the countries of the Caribbean are better resourced diplomatically than many of their Pacific counterparts within AOSIS both to drive the organisation’s approach to climate politics and also to access some of the emerging benefits.<sup>3</sup> This was epitomised by Grenada’s widely-acknowledged successful leadership of AOSIS until the end of 2011, along with the question marks that hang over the capacity of Nauru to lead as effectively from early 2012 onwards. In addition, at COP-15, along with T&T, Tuvalu and others, Grenada played a leading role in the ‘Tuvalu Copenhagen Protocol’ which saw AOSIS break ranks with the major emitting developing countries, such as China, India and Saudi Arabia, and demand that they be subject to the same binding commitments as developed countries, in turn temporarily paralysing the talks and damaging attempts by proponents of the weak (non-binding) Copenhagen accord to present it as a success to the global media (Benwell, 2011: 205). Yet, paradoxically, Grenada’s commitment to the leadership of AOSIS globally has arguably inhibited its own adaptation efforts, which might have been better focused on developing fully an approach for disaster management and protection of its critical nutmeg industry.<sup>4</sup> Plus, a number of fissures also exist between Caribbean countries. One obvious example concerns T&T, which, because of its high per capita CO<sub>2</sub> emissions, has invested much of its diplomatic capacity in resisting potential international criticism rather than in pursuing the offensive interests of AOSIS. Moreover, again paradoxically, because of its oil wealth, T&T is one of the countries of the region which least requires external finance to support its climate change policies; yet it potentially stands to gain the most, given the significantly higher amounts of money now to be assigned to mitigation activity. We elucidate further some of these regional dynamics in the next section.

## Caribbean Responses 2: The Regional Level

There now exists at the regional level a wide variety of initiatives and institutions, led by the UN Caribbean Environmental Programme (CEP), which is based in Jamaica, as well as other United Nations Environment Programme (UNEP) agencies and the United Nations Development Programme. The two major non-governmental policy advocates are the Caribbean Natural Resources Institute (CANARI) and the Caribbean Policy Development Centre (CPDC). In 2005 the Caribbean Community Climate Change Centre (CCCCC) was established in Belize under the aegis of the Caribbean Community (CARICOM), the main institution of regional governance within the Caribbean encompassing the independent English-speaking Caribbean, Suriname and Haiti. Although there exists technical co-operation, CARICOM does not include in its membership a number of significant Caribbean countries, such as Cuba, the Dominican Republic or the non-independent French or Dutch territories (or indeed Puerto Rico).

The region has generally been successful in terms of analysing the science of climate change and its implications. For example, funded by the United Kingdom's Department for International Development (DfID) and the CCCCC, Caribsave, a non-profit organisation based in Barbados, recently undertook an extensive climate modelling project in conjunction with the Oxford University Centre for the Environment which mapped the expected consequences of sea-level rise in the region (Caribsave, 2009). The final report argues that the impact of a sea-level rise of one metre in the English-speaking Caribbean would destroy 1 per cent of agricultural land and displace over 110,000 people. It would also severely damage, through water inundation, 28 per cent of the region's airports and 80 per cent of its seaports. The financial cost was estimated at up to US\$187 billion by 2080, or between US\$4 billion and 6 billion per annum. A sea-level rise of two metres would be even more dramatic, destroying 3 per cent of agricultural land and displacing 260,000 people. What is just as worrying, however, is the number of less obvious, but equally pernicious, effects, from general coastal erosion and increased flooding to the expected decline in tourist paraphernalia and other coastal infrastructure (the report predicts the loss of up to 307 multi-million dollar hotels and resorts). It further highlights the cumulative developmental impact of coastal degradation, the decline of other development options and the exponential loss of foreign exchange earnings as the effects of sea-level rise intensify. It is notable too that, although larger countries like T&T and Guyana are deemed likely to suffer most in absolute terms, the considerably more vulnerable smaller islands in the Eastern Caribbean will bear disproportionately high relative costs (Caribsave, 2010).

The science is not, then, in question. Rather, the major problem is that, regionally, there is very little understanding of how the likely impacts of climate change should translate into adaptive policy-making.<sup>5</sup> As Barnett and Campbell (2010: 1) have put it, 'there has been very little research that is oriented towards understanding how people living on islands can adapt to climate change in order to continue living lives that they value'. This problem is highlighted in the Caribbean by the 'Regional Framework for Achieving Development Resilient to Climate Change' (CCCCC, 2009), which was subsequently followed in 2011 by a 'Draft Implementation Plan' developed by UK-based consultants Acclimatise (CCCCC, 2011). The former has four main goals:

1. Mainstreaming climate change adaptation strategies into the sustainable development agendas of CARICOM states;
2. Promoting actions to reduce greenhouse gas emissions through energy efficiency, conservation, and switching to renewable energy sources;
3. Encouraging action to reduce the vulnerability of natural and human systems in CARICOM countries to the impacts of a changing climate;
4. Promoting action to derive social, economic and environmental benefits through the prudent management of standing forests in Caribbean countries (CCCCC, 2009: iv).

It is suggested that a variety of measures be assigned to different Caribbean countries, with the CCCCC taking a coordinating role between regional institutions with particular competencies and national contact points to ensure implementation of the different measures and achievement of the numerous associated goals. Yet the subsequent 'Draft Implementation Plan', as it stands at least, is a distinctly weak document. Within it there are 12 measures, each with an accompanying 'action' to be taken, and many are problematic. For example, the first notes that 'building resilience requires transformational change', with the accompanying action being to ensure that all national and regional policies should be rendered 'consistent with (and make a positive contribution to) delivering a low carbon economy' (CCCCC, 2011: 3). Similarly, measure seven asserts that 'low-carbon energy generation has to become part of the "DNA" of the Caribbean', with the proposed action being a review of barriers to low-carbon energy generation (CCCCC, 2011: 6). While these are, of course, worthy goals in themselves, and many Caribbean countries certainly need to reduce their dependence on expensive imported fossil fuels, it is hard to see how a low-carbon economy (as per goal two of the 'Regional Framework' above) is relevant in the context of their miniscule contribution to greenhouse gas emissions globally.

Other measures are desperately short on specifics. Measure three calls on Caribbean governments and organisations 'to step up to the plate' and 'institutionalise climate change' (CCCCC, 2011: 4). However, the action required is simply that economic and infrastructural planning 'factor in the impacts of, and responses to a changing climate', with little about how, by whom, or with which resources this will happen. Similarly, measure four – 'acting regionally to deliver nationally' – calls for the institutionalisation of climate modelling and support for vulnerability assessments (CCCCC, 2011: 4–5). Although such work is important, the region already has a fairly clear idea of the scientific implications of climate change; it is evidence-based social and economic adaptations which are lacking. All of these problems may well be fleshed out in future iterations of the 'Implementation Plan', but the overriding impression is presently of speculation, cliché and wishful thinking, rather than concrete action.

Congruent with goals one and four of the 'Regional Framework', many of the proposed measures are also premised on the idea of mitigation which, again, should be of considerably less concern to the Caribbean than adaptation. There is very little in either document or in the thinking of many regional climate experts – who themselves have been socialised in a context where the major debates have related to both the science and global mitigation – about technological transitions or new models of economic and social organisation to alleviate the specific impacts of climate change. Goal four, moreover, which calls on Caribbean countries with standing forests 'to start laying the groundwork for participation in an approved global REDD [Reducing Emissions from Deforestation and Degradation] mechanism' (CCCCC, 2009: 14), is based on little more than hope. Even Guyana, one of just two CARICOM countries (with Suriname) which have significant rainforest coverage, has struggled to exploit this resource economically (see the following section) and it is unlikely any of the smaller forest-covered islands will be able to do so more effectively.

There have been a variety of other programmes in the region in recent years. Caribbean Planning for Adaptation to Climate Change (CPACC) was the first major regional climate change programme, running between 1997 and 2001. Funded by the Global Environmental Facility (GEF), the project involved assessments of vulnerability, adaptation planning and capacity-building in a variety of countries, and led to the establishment of the first databases and inventories of coastal and marine resources. This was followed, between 2001 and 2004, by the Adaptation to Climate Change in the Caribbean (ACCC) project, funded by the Canadian Climate Change Development Fund, which 'sought to support the establishment of a permanent entity for the coordination of activities to cope with climate change' and led to '18 monitoring systems, together with related data management and information networks, [being] installed in 12 countries'. This is said to have encouraged the 'better articulation of regional positions in negotiations under the UNFCCC and the Kyoto Protocol' (Briguglio et al., 2008: 68). Finally, between 2006 and 2010, the World Bank and Global Environmental Facility funded the 'Special

Adaptation Project for the Caribbean' (SPAC) which provided up to US\$8 million to Dominica, St Lucia and St Vincent for funding small projects aimed at 'minimising the impact of climate change on coastal biodiversity and land degradation' (Briguglio et al., 2008: 69). A final major project in the region – also funded by DfID, but in conjunction this time with the UN Economic Commission for Latin America and the Caribbean (ECLAC) based in Trinidad – sought to map the economic implications of climate change in the region (DfID and ECLAC, 2008). Echoing our argument here, one of its principal conclusions was that there is little awareness of either the expected impact or broader implications of climate change in regional and national public policy (ECLAC, 2010b: 139).

So, overall, regional approaches to climate change have hitherto been hampered by at least four interrelated problems. First, what is striking about many of the programmes, such as SPAC and its forerunners, is their piecemeal and weakly-resourced nature. Second, there is the simple question of capacity. The CCCCC itself has few permanent staff and its principal role is actually as a 'clearing house' for information pertaining to climate change in the region. Likewise, the CEP has a technical staff of no more than a dozen people, and climate change does not even figure as a principal part of the organisation's remit (its main focus being the question of marine pollution as embedded in the Cartagena Convention of 1983). Third, there is the political nature of many of the goals which do not always correlate closely enough to local needs or specificities (as illustrated by the aforementioned tension between mitigation and adaptation). Finally, underpinning all of these issues, the Caribbean remains heavily dependent on external sources of support for the funding of regional institutions, the writing of reports and the provision of much information and expertise; unsurprisingly, what is then generated often echoes and endorses external agendas as much as it does local ones (the questionable work undertaken by Acclimatise providing ample evidence of this).

To summarise, then, there is comparatively little initiative taken by the region itself when it comes to climate change, partly because of a critical lack of resources and capacity, partly because of a generalised lack of awareness of the full implications of what is presaged, and partly because of the wider problem of regional fragmentation that afflicts the Caribbean and impinges upon the capacity of CARICOM, especially, to drive forward agendas on any major issue from climate change to trade, development and governance (see Bishop and Payne, 2010). Moreover, because the region is so dependent upon donor finance for climate change initiatives, projects have been mobilised largely on the terms of the donors, with local projects tending to be used primarily as pilots to inform and pave the way for bigger projects outside of the region.

### **Caribbean Responses 3: The National Level**

Even where regional policy-making is effective, it rarely translates well nationally, given the serious capacity constraints that exist in the region beyond some of the larger countries. Indeed, many of the smaller islands have just a single person as their national climate change contact point, with this person – or, at best, small team – simultaneously charged with myriad other responsibilities. It is notable, perhaps, as highlighted in the earlier table, the only Caribbean countries which have moved beyond their initial national communication to the UNFCCC in 2001 by producing a Mauritius+5 National Assessment Report (NAR) are those which are, relatively-speaking, among the most successful economically: Barbados, Cuba, Grenada, St Lucia and T&T. Because of the limitations of space, we discuss here in detail the national responses of just two countries which have developed interesting approaches to the climate change problematic.

#### *Guyana*

In Guyana, under the Presidency of Bharrat Jagdeo (whose term of office ended in late 2011) attempts have been made to profit from the aforementioned REDD scheme, which was brought



under the aegis of the UNFCCC at Cancún. This so-called Low Carbon Development Strategy (LCDS) is predicated on the recognition that the deforestation that occurs in Amazonian and other heavily-forested countries makes CO<sub>2</sub> harder to absorb. Jagdeo (2009) consequently argued that the richer parts of the world should pay for the natural sequestration that Guyana's forests currently 'provide' the world for free. Estimating that deforestation globally accounts for approximately 20 per cent of greenhouse gas emissions, he proposed that it should be part of the 'abatement solution' through the creation of forest carbon as a tradable commodity:

Deforestation happens because individuals, communities and countries pursue legitimate economic activities – such as selling timber or earning money and creating jobs in agriculture. The world economy values these activities. It does not value most of the services that forests provide when trees are kept alive, including the avoidance of greenhouse gas emissions. Correcting this market failure is the only long-term solution to deforestation. (Office of the President of the Republic of Guyana, 2008: 1)

Moreover, Jagdeo (2009) contended, if finance were to flow to those forested countries with robustly-developed structures in place, there would emerge a range of further benefits, such as job creation, the protection of indigenous lands and the forging of 'genuinely sustainable modes of development and climate resilience'. It is an interesting prospectus, and Jagdeo has been commemorated individually as one of UNEP's five 'Pillars of Transition to a 21<sup>st</sup> Century Green Economy'.

However, the plan is not entirely unproblematic for a number of reasons. First, working with consultants McKinsey and Co., the value placed by the Guyanese government upon its rainforest is around US\$4–5 billion per year, which is considered to represent both the amount required to outcompete the opportunity cost of alternative uses (primarily deforestation) and its value compared to other forms of climate change mitigation. This constitutes, of course, a significant sum of money and it is more than double Guyana's current annual GDP. It would seem at present, and perhaps until the rest of the world begins to see the same value in paying for the 'cost' of 'using' the Guyanese forests, that it will be exceedingly difficult to realise. Second, the 'baseline' deforestation rate on which these figures are based has been set by McKinsey, in the Guyanese case, at 4.3 per cent per annum, with the justification that, although the country has had a traditionally low rate of deforestation, calculations should reflect an 'economically rational' rate which is 'forward looking' and 'driven by assumptions of rational behaviour by countries seeking to maximise economic opportunities for their citizens' (Office of the President of the Republic of Guyana, 2008: 19). This assumption, that greater deforestation by rational actors is increasingly likely in the future, also has the benefit – or so the consultants argued – of not disadvantaging countries such as Guyana in competitive REDD markets that disproportionately favour others with historically higher rates of deforestation. Yet, as one critic has noted, this accounting sleight of hand is unrealistic since the 4.3 per cent baseline figure is entirely contrived. Guyana's real rate has been close to zero for many decades and there is little reason to expect it to change dramatically in future. Furthermore, there is at present no consensus on REDD worldwide, and the 'market flooding' effect which might be precipitated by low-deforestation countries like Guyana entering any new market would simply lead to downward pressure on the value attributed to forest carbon globally, and, as such, 'avoided deforestation [would] no longer make sense for participating countries', and, by implication, those countries which do have high rates of deforestation (Singh, 2009: 4–5).

To overcome this problem, it has been mooted that, rather than engaging in regular carbon markets, Guyana's forest should be consolidated through a special fund to which donors might contribute financing. Indeed, Norway has already agreed a contribution of approximately US\$33 million to this end. However, international donors clearly realise that Guyana, by contrast, say, to Indonesia, is not (yet at least) a problem in terms of deforestation, and, again, it is unlikely that the huge sums dreamed of by the Guyanese government will be forthcoming. Moreover, as



one influential Guyanese academic, Clive Thomas (2011), has noted, the Memorandum of Understanding signed between Guyana and Norway compels the former to protect its pristine forests and eschew industrial development, but with no reciprocal requirement on the latter – which is simultaneously one of the worst polluters and richest countries globally on a per capita basis on account of its extensive extractive hydrocarbon industries – to restrict its own industrial development to mitigate climate change.

In sum, although Jagdeo's plan is certainly an original and thoughtful attempt at fashioning a new direction in Caribbean climate change and development policy, there remain many hurdles to overcome. Indeed, as an adaptive strategy it is unclear what the benefits are likely to be beyond increased earnings; as noted earlier, up to 90 per cent of the Guyanese population live in the capital, Georgetown, which lies below sea level and thus remains highly vulnerable to sea-level rise.

### *Barbados*

Barbados provides an example of how the climate change problematic plays out differently in the small islands. The country is at once one of the best-performing economies in the region and yet an island state marked by a low-lying topography and extreme pressure on a small and fragile eco-system. Interestingly, in contrast to Guyana, which is simultaneously the poorest country in the English-speaking Caribbean and the most resource-rich, the comparative success of Barbados has sometimes been attributed, in part at least, to its relative lack of natural resources.

Barbados has been one of the most active countries in the Caribbean region in relation to climate change, on account of: first, the important role it played as host for the 1994 small state conference which led to the BPOA and the consequent establishment of a well-resourced National Commission on Sustainable Development as early as 1996; second, the fact that it has the technical and financial resources, certainly when compared to many other SIDS, to develop a serious agenda for tackling the problem; and, third, the sheer acuteness of the climate change threats it faces, even by comparison with neighbouring Caribbean islands. As the country's extremely detailed First National Communication to the UNFCCC (Government of Barbados, 2001) noted, these comprise, among others, a low water table (and severe water scarcity), heavy coastal erosion (up to 15% of the island's total surface), high population density, location of much valuable tourist infrastructure close to the coast, substantial economic dependence on that tourism sector, the heavy consumption and cost of imported energy, and the high import-ratio overall, but especially in foodstuffs.

This is what has underpinned the relative intensity of the Barbadian response. As one of the five Caribbean countries which have produced a Mauritius +5 NAR (Government of Barbados, 2010), its submission is by far the longest and most detailed. Running to 128 pages, it notes that Barbados is 'one of the few countries in the Western Hemisphere to develop and implement a national policy for sustainable development' (Government of Barbados, 2010: 4), a claim confirmed by ECLAC (2010a). This links to the country's National Strategic Plan 2006–2025 (Government of Barbados, 2006), of which the fourth (of six) pillars is 'Building a Green Economy: Strengthening the Physical Infrastructure and Preserving the Environment'. This initiative is currently being taken very seriously and involves many of the measures noted in the NAR, of which the most successful so far – among other initiatives relating to coastal protection, land-use planning, waste management and so on – has been the development of a vigorous solar water heating industry, such that Barbados now dominates the regional market for production and supply and itself enjoys the second-highest concentration of solar heaters in the world (after Israel) with around 50 per cent of households using them (Government of Barbados, 2010: 50–52). This equates to roughly 15 per cent of the country's energy needs and is a significant step towards the country's commitment to produce around 30 per cent renewable energy by 2012, using a mixture of wind, biofuels (from sugarcane bagasse) and solar. Much work has also been undertaken to protect groundwater (with zoning restrictions on developments in sensitive areas)

(Government of Barbados, 2010: 41) and to invest in desalination plants which, although energy intensive, also serve to protect against future water degradation and shortages.<sup>6</sup> Unlike most of its neighbours, Barbados also has a fully developed National Biodiversity Strategy and Action Plan (Government of Barbados, 2007), which sets out a range of regulations and policies that include restrictions on the felling of large trees, protection of areas vulnerable to soil erosion, marine protection and the rehabilitation of coral reefs.

The initiatives undertaken in Guyana and Barbados are not, of course, all that is happening in the Caribbean at the national level, and other countries, notably Dominica, with its 'Organic Isles Initiative', as well as intensified strategic planning in Antigua-Barbuda, Jamaica and T&T, illustrate that climate change and other environmental issues are at last being taken more seriously (ECLAC, 2010a). That said, these two cases remain the most frequently cited national climate-related projects, in which the greatest hope has been invested for successful outcomes. Viewed across the region as a whole, the adaptation effort is still patchy, with most countries not having the capacity even to begin the process in a meaningful way.

### Implications for Caribbean Development

There are several reasons why Caribbean responses to the climate problematic have thus far been somewhat uneven. First, as already noted, the region is inhibited by high levels of fragmentation. Separation by sea and the cumulative historical impact of colonisation by different powers has rendered the many territories especially insular. Given that the existing governance machinery embodied in CARICOM has neither the capacity nor the mandate to instigate new policy agendas and drive them forward (Bishop and Payne, 2010), regional initiatives – and particularly Pan-Caribbean ones – are extremely difficult to envision and implement. This is especially so in relation to climate change, which, because of its future-orientated character, does not appear to be *immediately* threatening to policy-makers. Second, and relatedly, there exist more apparently urgent short-term problems for many Caribbean governments, such as coping with often huge debt burdens – seven Caribbean countries are among the ten most heavily indebted in the world (ECLAC, 2010a: 4) – as well as other 'existential threats' occasioned by the decline of longstanding development models such as export agriculture and the ominous rise of organised criminal networks (Girvan, 2010). Third, the whole Caribbean region – including even the most effective states such as Barbados – remains highly dependent on external ideas, skills and capital. As we have seen, the climate agenda in the region is almost wholly dependent upon multilateral institutions and international NGOs for impetus, finance and expertise.<sup>7</sup>

Consequently, what emerges most forcefully from our analysis is that, both practically and politically, the Caribbean is at the mercy of external events in terms of climate change and its impact upon development. Standing to suffer disproportionately from the intensification of global warming, it would seem that mitigation is largely dependent upon what occurs at the global level in respect, first, of the achievement of improved and effective environmental governance arrangements and, second, of the possible (and admittedly unlikely) adoption of new low-carbon development models in the biggest polluters, including the newly emerging countries. For the Caribbean, as in other aspects of its political economy such as trade, this level of external dependence is nothing new. The small states and territories of the region have always been highly dependent upon, and vulnerable to, changes in the contours of the global political economy. A deeply challenging structural context created by acts of history and geography and the evolution of contemporary globalisation has long loomed large over the Caribbean developmental vista. Nonetheless, we have always held the view that, in spite of such structural constraints, 'there is *always* some room to manoeuvre, some minimalist space for agency, even for the smallest states in the global order' (Payne, 2006: 44). In this context, the evidence presented here about the various nascent approaches that are emerging at the global, regional and national level in response to the environmental crisis in the region shows this still to be true. However, given the extent of the threats that destabilising climate change may well unleash – over which the Caribbean has

exiguous control – it is perhaps also fair to say that this problem is both the most serious in its implications and the most acutely difficult to handle. Not enough thinking has yet been undertaken about how to deal with it, and the climate change clock is now ticking very loudly. This is why we argue that it has become the defining feature of the contemporary Caribbean developmental landscape.

For all that, climate change does also present the region with a huge opportunity. A shift towards a more sustainable approach to development, with the environment at the heart of theory, policy and practice, offers the region its best opportunity to begin to think through again the nature of its own destiny since the decline of indigenous Caribbean development theorising that accompanied the dawn of the ‘Washington Consensus’ era in the 1980s. To the extent that it can grasp this opportunity, other benefits, beyond simply mitigation of the immediate climate problem, would accrue. Above all, a dramatic shift in the scope of regionalist governance will be required to take account of the Pan-Caribbean dimension of the problem, for climate change is manifestly no respecter of boundaries or sovereignty. Conceivably therefore, the looming climate change crisis could act as the necessary existential issue needed to induce not only CARICOM but also hitherto unspecified wider and broader regional bodies at last to rise to the urgency of the situation.

## Conclusion

Nevertheless, and with due concern about ending this analysis on an excessively bleak note, the prognosis, even on this basis, is not very good. The science of climate change, as we established at the outset, is well advanced and points towards a difficult future for the Caribbean. Yet the politics that need to be generated in response, although not entirely absent, remain highly immature. As Sanders (2010a) has recently put it:

The tides of history are washing-up a new order on the shores of international decision-making for sure. But, while the new order includes the large developing countries, the smaller ones continue to be marginalised, remembered more as a postscript than as a priority even though they are the primary sufferers.

On this reading, the structures of global climate-change politics seem oppressively difficult. Yet if Caribbean states and societies can develop a range of original and compelling approaches to the issue (as, in some respects, they have been seeking to do both individually and collectively), they may be able to help shift the nature of those structures a little further in the direction of a creative response. The existence and potential of AOSIS constitutes at least one way forward in this regard. Although the Copenhagen and Cancún meetings were disappointing in their outcomes, Durban was somewhat more encouraging and it remains the case that continued prevarication makes climate change progressively more difficult to allay (Aldonas, 2010: 33). In this sense, the demand made by AOSIS for urgent action remains vital, and its potential influence could still be significant.

For the Caribbean itself, the options are, to reiterate, limited. However, we believe that our analysis has laid out at least the basis of a broad framework of action. First, a new research agenda focused on the climate-change threat needs to be forged immediately, to which all scholars with an interest in the region – whether natural or social scientists – should engage in the purposeful pursuit of genuinely adaptive strategies. Second, given its fundamentally constitutive role, the environment must be placed squarely at the heart of theory, policy and practice pertaining to Caribbean politics, governance and development in a way that has never been the case before. Finally, for either of these proposed shifts of behaviour to gain real purchase, recognition of the Pan-Caribbean nature of the problem – along with concomitant reconstruction of broad regional academic, political and policy linkages – is absolutely crucial.

## Acknowledgements

The authors would like to thank sincerely the editors of JDS and two anonymous referees for their genuinely constructive and critical engagement throughout the review process. The experience was the model of what peer-review should be; and the final article, which is much improved since our initial submission, is hopefully testament to this.

## Notes

1. The full AOSIS membership includes: from the Caribbean: Antigua-Barbuda, Bahamas, Barbados, Belize, Cuba, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St Kitts-Nevis, St Lucia, St Vincent and the Grenadines, Suriname and Trinidad and Tobago; from the Atlantic: Cape Verde, Guinea-Bissau and São Tomé and Príncipe; from the Indian Ocean: Comoros, Maldives, Mauritius and Seychelles; and from the Pacific: Cook Islands, Fiji, Kiribati, Marshall Islands, Federated States of Micronesia, Nauru, Niue, Palau, Papua New Guinea, Samoa, Singapore, Solomon Islands, Tonga, Tuvalu and Vanuatu. There are also four observers: American Samoa, Guam, Netherlands Antilles and the US Virgin Islands. It should also be noted that there is significant overlap between the countries which are considered SIDS and the membership of AOSIS.
2. Anonymous interview with CARICOM climate change official, November 2011.
3. Anonymous interview with AOSIS climate change expert, November 2011.
4. Anonymous interview with CARICOM climate change official, November 2011.
5. Anonymous interview with CARICOM climate change official, November 2011.
6. Anonymous interview with Barbadian government official, December 2011.
7. Anonymous interview with Caribbean regional technocrat, December 2011.

## References

- Adger, W.N. (2010) Climate change, human well-being and insecurity. *New Political Economy*, 15(2), pp. 275–292.
- Aldonas, G. (2010). Globalization, climate change and Latin America: implications for development. *IDB-INTAL*, 30(14), 33–42.
- AOSIS (2009). Alliance of Small Island States Declaration on Climate Change 2009, New York, 21 September. Accessed at <http://www.sidsnet.org/aosis/summit2009.html>.
- Barnett, J. and Campbell, J. (2010) *Climate Change and Small Island States: Power, Knowledge and the South Pacific* (London: Earthscan).
- Benwell, R. (2011) The canaries in the coalmine: small states as climate change champions. *The Round Table*, 100(413), pp. 199–211.
- Betzold, C. (2010) ‘Borrowing’ power to influence international negotiations: AOSIS in the climate change regime, 1990–1997. *Politics*, 30(3), pp. 131–148.
- Bishop, M.L. (2010) Tourism as a small state development strategy: pier pressure in the eastern Caribbean? *Progress in Development Studies*, 10(2), pp. 99–114.
- Bishop, M.L. (2012) The political economy of small states: enduring vulnerability? *Review of International Political Economy*, iFirst.
- Bishop, M.L. and Payne, A. (2010) Caribbean regional governance and the sovereignty/statehood problem, Waterloo, Ontario, Centre for International Governance Innovation (CIGI) Caribbean Paper No. 8. Accessed at [http://www.cigionline.org/sites/default/files/Caribbean\\_Paper\\_8.pdf](http://www.cigionline.org/sites/default/files/Caribbean_Paper_8.pdf).
- Block, B. (2010). Interview with Tuvalu climate change negotiator Ian Fry, Washington, DC: Worldwatch Institute. Accessed at <http://www.worldwatch.org/node/6360>.
- Brugaglio, L. et al. (2008). Climate change and small island developing states, in: J. Strachan and C. Vigilance (eds) *Sustainable Development in Small Island Developing States* (London: Commonwealth Secretariat), pp. 65–77.
- CANARI (2008). Climate change in the Caribbean: the case for greater investment in research and adaptive policies, Port of Spain, Trinidad, Caribbean Natural Resources Institute, Policy Brief Number 10. Accessed at <http://www.canari.org/docs/CANARI%20PB%2010.%20English.pdf>.
- Caribsava (2009) An overview of modelling climate change impacts in the Caribbean region with contribution from the Pacific Islands, Barbados, United Nations Development Programme. Accessed at <http://www.caribsava.org/index.php?id=5>.
- Caribsava (2010) Quantification and magnitude of losses and damages resulting from the impacts of climate change: modelling the transformational impacts and costs of sea-level rise in the Caribbean: key points and summary for policy-makers, Barbados, United Nations Development Programme. Accessed at <http://www.caribsava.org/assets/files/SeaLvlRise-UNDP-CARIBSAVE-KeyPoints2010.pdf>.
- CARICOM (2009) Communiqué issued at the conclusion of the Ministerial Meeting on Climate Change and Development, Castries, St Lucia, Caribbean Community Secretariat Press Release No. 351/2009, 16 September. Accessed at [http://www.caricom.org/jsp/pressreleases/pres351\\_09.jsp](http://www.caricom.org/jsp/pressreleases/pres351_09.jsp).

- Cashman, A., Nurse, L. and John, C. (2010) Climate change in the Caribbean: the water management implications. *The Journal of Environment and Development*, 19(1), pp. 42–67.
- CCCCC (2009) Climate change and the Caribbean: a regional framework for achieving development resilient to climate change, Belmopan, Belize, Caribbean Community Climate Change Centre. Accessed at <http://www.cpcdngo.org/cpcdc/attachments/article/107/Regional%20Framework.pdf>.
- CCCCC (2011) Regional framework for achieving development resilient to climate change: implementation plan executive summary, Belmopan, Belize, Caribbean Community Climate Change Centre. Accessed at <http://www.gcca.eu/usr/Executive-Summary-Draft.pdf>.
- Chandani, A. and Siegele, L. (2010) Climate watchlist: key issues for Cancún negotiations, Briefing Paper, London, International Institute for Environment and Development. Accessed at <http://pubs.iied.org/pdfs/17089IIED.pdf>.
- Ciplet, D. et al. (2010) Fast-start adaptation funding: keeping promises from Copenhagen, Briefing Paper, London, International Institute for Environment and Development. Accessed at <http://pubs.iied.org/pdfs/17088IIED.pdf>.
- Conference of the Parties (2011) COP-17 Draft Decision: Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action, Durban. Accessed at [http://unfccc.int/files/meetings/durban\\_nov\\_2011/decisions/application/pdf/cop17\\_durbanplatform.pdf](http://unfccc.int/files/meetings/durban_nov_2011/decisions/application/pdf/cop17_durbanplatform.pdf).
- Depledge, J. and Yamin, F. (2009) The global climate-change regime: a defence, in: D. Helm and C. Hepburn (eds) *The Economics and Politics of Climate Change* (Oxford: Oxford University Press), pp. 433–454.
- DeSombre, E.R. (2006) *Global Environmental Institutions* (Abingdon, Oxon: Routledge).
- Dessler, A. and Parson, E. (2006) *The Science and Politics of Global Climate Change: A Guide to the Debate* (Cambridge: Cambridge University Press).
- DfID and ECLAC (2008) Review of the economics of climate change in the Caribbean: Project Document, Port of Spain, Trinidad and Tobago, Economic Commission for Latin America and the Caribbean. Accessed at [http://www.eclac.org/portofspain/noticias/paginas/0/34450/Caribbean\\_Climate\\_Change\\_Project\\_-\\_Final\\_edited.pdf](http://www.eclac.org/portofspain/noticias/paginas/0/34450/Caribbean_Climate_Change_Project_-_Final_edited.pdf).
- ECLAC (2010a) Caribbean Regional Report for the Five-Year Review of the Mauritius Strategy for the Further Implementation of the Barbados Programme of Action for the Sustainable Development of Small Island Developing States, Port of Spain, Trinidad: Economic Commission for Latin America and the Caribbean.
- ECLAC (2010b) Climate change profiles in select Caribbean countries, Port of Spain, Trinidad and Tobago, Economic Commission for Latin America and the Caribbean. Accessed at <http://www.eclac.org/publicaciones/xml/8/39188/LCARTL.250.pdf>.
- Giddens, A. (2009) *The Politics of Climate Change* (Cambridge: Polity Press).
- Girvan, N. (2010) Are Caribbean countries facing existential threats? Accessed at <http://www.normangirvan.info/wp-content/uploads/2010/11/existential-threats.pdf>.
- Government of Barbados (2001) First National Communication to the UN Framework Convention on Climate Change, Bridgetown, Barbados.
- Government of Barbados (2006) The National Strategic Plan of Barbados 2006–2025, Bridgetown, Barbados. Accessed at [http://www.sidsnet.org/msi\\_5/docs/nars/Caribbean/Barbados-MSI-NAR2010.pdf](http://www.sidsnet.org/msi_5/docs/nars/Caribbean/Barbados-MSI-NAR2010.pdf).
- Government of Barbados (2007) National Biodiversity Strategy and Action Plan (NSBAP), Bridgetown, Barbados. Accessed at [http://www.sidsnet.org/msi\\_5/docs/nars/Caribbean/Barbados-MSI-NAR2010.pdf](http://www.sidsnet.org/msi_5/docs/nars/Caribbean/Barbados-MSI-NAR2010.pdf).
- Government of Barbados (2010) Barbados National Assessment Report of Progress made in addressing Vulnerabilities of SIDS through Implementation of the Mauritius Strategy for the Further Implementation of the Barbados Programme of Action, Bridgetown, Barbados: Ministry of the Environment, Water Resources and Drainage. Accessed at [http://www.sidsnet.org/msi\\_5/docs/nars/Caribbean/Barbados-MSI-NAR2010.pdf](http://www.sidsnet.org/msi_5/docs/nars/Caribbean/Barbados-MSI-NAR2010.pdf).
- Harvey, F. and Vidal, J. (2011) Global climate change treaty in sight after Durban breakthrough. *The Guardian*, London, 11 December.
- Hepburn, C. and Stern, N. (2009) The global deal on climate change, in: D. Helm and C. Hepburn (eds) *The Economics and Politics of Climate Change* (Oxford: Oxford University Press), pp. 36–57.
- Jagdeo, B. (2009) Sustainable development or climate change: preparing for the Copenhagen Summit, St Augustine, Trinidad and Tobago, Speech given to the University of the West Indies, 30 November
- Kasa, A. et al. (2008) The Group of 77 in the international climate negotiations: recent developments and future directions. *International Environmental Agreements: Politics, Law and Economics*, 8(2), pp. 113–127.
- Khor, M. (2011) Complex implications of the Cancun climate conference, Geneva, South Centre Climate Policy Brief. Accessed at [http://www.ifg.org/pdf/CN122510\\_Complex\\_Implications\\_Martin\\_Khor.pdf](http://www.ifg.org/pdf/CN122510_Complex_Implications_Martin_Khor.pdf).
- Kolbert, E. (2007) *Field Notes from a Catastrophe: A Frontline Report on Climate Change* (London: Bloomsbury).
- Matthew, R.A. and Hammill, A. (2009) Sustainable development and climate change. *International Affairs* 85(6), pp. 1117–1128.
- Mimura, N., Nurse, L., McLean, R.F., Agard, J., Briguglio, L., Lefale, P., Payet, R. and Sem, G. (2007) Small islands, in: M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds) *Climate Change 2007: Impacts Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge: Cambridge University Press), pp. 687–716.
- Office of the President of the Republic of Guyana (2008) Saving the world's forests today: creating incentives to avoid deforestation, Georgetown, Guyana. Accessed at [http://www.redd-monitor.org/wordpress/wp-content/uploads/2009/02/guyana\\_mckinsey\\_report.pdf](http://www.redd-monitor.org/wordpress/wp-content/uploads/2009/02/guyana_mckinsey_report.pdf).



- Pattullo, P. (2005) *Last Resorts: The Cost of Tourism in the Caribbean*, 2nd revised edition (New York: New York University Press).
- Payne, A. (2005) *The Global Politics of Unequal Development* (Basingstoke: Palgrave Macmillan).
- Payne, A. (2006) The end of green gold? Comparative development options and strategies in the Eastern Caribbean banana-producing islands. *Studies in Comparative International Development*, 41(3), pp. 25–46.
- Sanders, R. (2010a) Commentary: hot talk, but no climate change help from Copenhagen. *Caribbean Net News*, 8 January. Accessed at <http://www.caribbeannetnews.com/news-20763-6-6-.html>.
- Sanders, R. (2010b) No trade without climate help. *BBC Caribbean*, 2 August.
- Singh, T.B. (2009) Comment on the McKinsey Report: 'creating incentives to avoid deforestation'. Georgetown, Guyana, understanding the low carbon development strategy. Accessed at [http://jouvay.com/lcds/learnmore/review\\_mckinseyreport\\_tsingh.pdf?pid=38633722&l=faa89f2487&id=5034002](http://jouvay.com/lcds/learnmore/review_mckinseyreport_tsingh.pdf?pid=38633722&l=faa89f2487&id=5034002).
- Stern, N. (2007) *The Economics of Climate Change: The Stern Review* (Cambridge: Cambridge University Press).
- Stern, N. (2008) The economics of climate change. *American Economic Review*, 98(2), pp. 1–37.
- Thomas, C.Y. (2011) The LCDS and MOU exposed. *Stabroek News*, Georgetown, Guyana, 6 November.
- Timmons Roberts, J. et al. (2010) Copenhagen's climate finance promise: six key questions, Briefing Paper, London, International Institute for Environment and Development. Accessed at <http://pubs.iied.org/pdfs/17071IIED.pdf>.
- United Nations (1994) Report of the Global Conference on the Sustainable Development of Small Island Developing States, Barbados, 25 April–6 May. Accessed at <http://www.sidsnet.org/docshare/other/BPOA.pdf>.
- United Nations (2005) Report of the International Meeting to Review the Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States, Port-Louis, Mauritius, 10–14 January. Accessed at [http://www.sidsnet.org/docshare/other/20050622163242\\_English.pdf](http://www.sidsnet.org/docshare/other/20050622163242_English.pdf).
- Watts, N. (2007) The governance of sustainable development in the Caribbean, London, Caribbean Studies Centre. Accessed at [http://www.londonmet.ac.uk/londonmet/library/n88521\\_3.pdf](http://www.londonmet.ac.uk/londonmet/library/n88521_3.pdf).
- Williams, M. (2005) The Third World and global environmental negotiations: interests, institutions and ideas. *Global Environmental Politics*, 5(3), pp. 48–69.
- Wong, P.P. (2010) Small island developing states. *Wiley Interdisciplinary Reviews: Climate Change*, 2, pp. 1–6.
- World Bank (2010) World Development Indicators Database. Last Accessed 10 January 2010, from <http://devdata.worldbank.org>.
- Yamin, F. and Depledge, J. (2005) *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures* (Cambridge: Cambridge University Press).