

Development Futures in the light of climate change: creating new insights into the past, the present and global futures.

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This background paper is intended to stimulate group discussion on Development Futures at the DFID/DSA Policy Forum '*Development in the face of Climate Change: Beyond Mainstreaming?*' on 2nd June 2008. The paper outlines key issues and alternative ideas of development through looking at past, present and future implications for development and global society. Informal group discussion will be based around three main questions:

1. Does climate change mean we need a radical shift in the way we think about the theory and practice of development?
2. What do policy makers and practitioners consider to be a viable low carbon future in terms of global development? Can we generate increased consumption and material wellbeing along while achieving large reductions in carbon emissions? What are the constraints to this?
3. How do expected and unforeseen changes affect possibilities for a low carbon future?

Summary

Current development planning and practice relating to climate change focus pragmatically on actions within a fairly narrow range of mitigation and adaptation options and opportunities. Climate change is one component of a complex of factors affecting global futures and ideas of 'development'. Futures studies project enormous changes in technology, wealth, population and inequality over the next 50 years, which have not been taken into account when considering development futures or the implications of climate change (and which in turn have not necessarily incorporated considerations of the potential impacts of climate change). Two further areas are rarely considered by development practitioners and wider society: the (non) viability of existing models of development in the future (e.g. in the face of climate change), and the implications of emerging knowledge about human responses to major climatic shifts in the past for our understanding of future human development. Pragmatic tools are being developed to incorporate climate change into development planning, along with longer term strategic envisioning tools to enable development organisations to consider global futures. However, the question remains: can a globally coherent low carbon development pathway, or pathways, be generated and adopted, and how?

1. Introduction: why rethink approaches to development due to climate change?

Climate change is increasingly recognised as a potential threat to the achievement of the Millennium Development Goals, and to human development and well-being in general (UNDP, 2007). Greenhouse gas concentrations are currently rising at a rate greater than projected in the most pessimistic climate change scenarios used by the Intergovernmental Panel on Climate Change (IPCC) (2007). A growing number of scientists are raising concerns that the IPCC's projections are likely to be conservative and over-optimistic (Rahmstorf, 2007; Wheeler, 2007; Hansen et al., 2008, Palmer et al., 2008), and that large-magnitude, abrupt, non-linear changes in the global climate system may occur during the 21st century (Schneider and Lane, 2006; Hansen et al., 2008).

Against this background, **linked climate change and development discourses** emphasise the need for a combination of mitigation through reductions in greenhouse gas emissions, and adaptation to address the potential impacts of unavoidable climate change (e.g. UNDP, 2007). As imminent and stringent mitigation measures appear unlikely, the focus is increasingly on adaptation. However, development agencies and practitioners are focusing their adaptation efforts principally on what might be termed the more “manageable” manifestations of climate change, namely changes in seasonal and interannual variability (e.g. in rainfall), and in the frequency and severity of extremes such as droughts, storms and floods.

Proposed adaptation interventions typically involve measures such as water conservation, rehabilitation of coastal areas to increase their physical resilience, and the expanded use of seasonal forecasts, as well as more general capacity development interventions at the institutional level (e.g. OECD, 2008). Adaptation is presented essentially as a means of “neutralising”, or at least minimising, the impacts of climate change, in pursuit of predetermined development goals and desirable developmental outcomes, via processes that are manageable and, by implication, predictable (e.g. UNDP, 2005). The **emphasis on “climate proofing”** is associated with an approach which implicitly assumes that adaptation is a question of identifying and implementing the appropriate measures (often technological in nature) to protect existing developmental policies, plans, programmes and practices against the adverse impacts of climate change.

However, climate change may generate a variety of impacts at regional scales that pose **considerable, and perhaps insuperable, challenges for development as it is currently conceived and implemented**. For example, certain studies suggest that the Asian monsoon may be unstable and prone to collapse (Lenton et al., 2005; Zickfield et al., 2005), although there is very high uncertainty about such changes. Other studies have highlighted the potential for the partial or total collapse of the Amazon rainforest ecosystem (Betts et al. 2004; Cox et al., 2004) and the vegetation systems of the greater Kalahari region (Thomas et al., 2005), associated with transitions from forest to savannah and from semi-desert to hyper-arid desert respectively. A number of regions (e.g. the Andean region, South Asia) which depend heavily on melt-water from glaciers are at risk of acute water shortages in the near future as glaciers shrink, retreat and in many cases disappear. The impact of climate change on water availability in the Mediterranean and Maghreb regions is likely to be severe: a study by Agoumie (2003) suggests that an increase in temperature of 1° C (with no change in rainfall) over the catchment area of Morocco’s al-Wahda dam would reduce runoff by 10%, equivalent to losing one dam a year when extrapolated over the entire country. Climate projections suggest much higher temperature increases for the Maghreb, with reductions in rainfall of 20-40% this century (Christensen et al., 2007).

2. Why are we where we are (1)? Rethinking development theory

Throughout history, human societies have tended to view events such as climate extremes or climate-related disasters as perturbations to an otherwise essentially static environment. Little attention has been paid to climatic variability associated with timescales longer than a few years (with a few exceptions where infrastructure has been designed to withstand extremes with return periods of the order of decades to centuries). The sustainability of development in the face of climatic and environmental changes unfolding over decadal and longer timescales is only now beginning to be addressed by decision-makers as a result of concern about anthropogenic climate change.

However, the attention of development practitioners is currently focused on relatively small-magnitude, low-impact (at least in relation to some of the more systematic and abrupt potential manifestations of climate change) changes, particularly in climatic variability. There are a number of reasons for this emphasis on relatively small incremental changes, including:

- i. the experience of development practitioners in dealing with existing and recent historical variability
- ii. a desire to focus on impacts that may be readily addressed rather than impacts that may be overwhelming and for which adaptation options may be absent or controversial (e.g. impacts associated with the collapse of food production, water resources or economic systems, and impacts with the potential to trigger conflict and/or mass migration);
- iii. the high uncertainty associated with more “dramatic” and systemic changes in climate;
- iv. a lack of knowledge and awareness of abrupt, non-linear changes in climate among the development community
- v. a possible reluctance of practitioners to sound alarmist.

At a more fundamental level, considerations of what development is, from a philosophical perspective, also affect approaches and responses to climate change.

Western developmental models

The developmental models that exist today have emerged from Western philosophical discourses which incorporate three key assumptions:

- i. Human advancement is the result of a process of progressive social evolution driven largely by endogenous factors, key among which are technological, economic and political innovation. Theories of progressive social evolution have been discredited in the fields of archaeology and anthropology but continue to inform political, economic and development discourses (Carneiro, 2003; Cooper and Packard, 1997; Gray, 2007).
- ii. Human beings are somehow separate from and elevated above “nature” (e.g. Soper, 1995; Heyd and Brooks, in press).
- iii. Human civilisation is the product of progressive human advancement which has acted to distance human societies from nature, and serves to “liberate” societies from day-to-day dependence on the natural environment (e.g. Daniel, 1968; Carneiro, 2003).

While these three assumptions have been, and still are, contested, they dominate much contemporary political and development discourse, particularly at the level of national governments and international relations, and especially with respect to economic liberalisation and globalisation (Gray, 2007; Heyd and Brooks, in press). These assumptions have fostered **an intellectual and policy environment in which the purpose of development is widely seen as the elevation of “under-developed” countries to the level of the more “advanced” nations**, based to a large extent on substituting subsistence with commercial production, and replacing tradition with modernity. This approach was formalised in the colonial development economics theory and practice of the 1950s (Cooper 1997), and is still in evidence today (see e.g. Eakin, 2005), despite a series of changes in approaches to development (see Box 1).

Box 1: Defining development

The understanding of what constitutes 'Development' is varied and incorporates a series of aims, grouped by Clark (2002):

- general positive social and economic changes (good human life, evolution, achieving a certain 'stage of advancement', well-being' increases in subjectively measured happiness);
- economic growth (e.g. increase in GNP, structural change);
- socio-cultural empowerment, (e.g. progress in social indicators and income equity and entitlements);
- political development (e.g. democratisation, equality and participation)
- human development (human capabilities, human security, freedoms; rights-based approaches) and
- sustainable development (e.g. intergenerational equity), and more recently, resilience

Understandings of what constitutes development have been under critique for some time. In development studies, critiques have been voiced widely of the Washington Consensus-style development projects of the 1960s and 1970s, due to their modernist rationalist approach and lack of awareness of contextual complexity. Structural adjustment projects based on flawed reification of a simplistic global market model have been similarly unsuccessful in the 1980s. The post-development perspective rejects normative goals, and universal pronouncements, instead embracing specificity (Rahnema and Bawtree, 1997; Schuuman 1993; Escobar 2000). But this perspective does not assist those who wish to improve human wellbeing or economies within existing governance structures.

In the light of unclear direction from development meta-theories and while strategies for effective poverty reduction continue to be argued (Unwin 2007), meso-level approaches have been adopted in the late 1990s and 2000s including social protection, good governance and aid effectiveness, justice, human security and human rights, providing the basis for programme strategies for development institutions. Specific targets have been created with the Millennium Development Goals of 2000, despite being contentious for their deficiencies (e.g. in carbon emissions). Aid conditionality remains linked to much development assistance, despite this being increasingly channelled directly through government country budgets by some donors e.g. DFID, EC, WB and ADB (EURODAD 2008)

Climate change has entered the realm of development practice through the widely adopted (and rather woolly) aims of 'sustainable development'. Sustainable development itself encompasses both reformist (incremental) and radical approaches to changed development options, from market and technology-based solutions to complete societal reform and thus has a very eclectic theoretical background ranging from socialism, anarchism to free-market capitalism. In this way a range of climate change 'solutions' can be proposed within sustainable development, many of which have opposing underlying world views (Grist, n.d.).

This approach to development is informed by ideas of the progressive improvement of human societies through endogenous processes and the separation of humanity from nature, implicitly based on the assumption of a static environment. In this approach, the role of the environment as an active agent of long-term social, economic, political and cultural change has been ignored. The result has been the imposition of "one size fits all" developmental models on diverse societies situated in a variety of different environments. These models have tended to ignore the role of the environment in shaping the development of human societies and the livelihoods that sustain human populations (see e.g. Brooks, 2006a). As Walter and Simms (2002) point out:

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'Since the Second World War, development institutions around the world have assumed that steady investment in economic development will create an even, upward curve of human development. This consensus is challenged by global warming, which is both driven by bad development and in turn drives hazards which threaten further development – creating more of a downward spiral than an upward curve.' (Walter and Simms, 2002, p. 1)

What Simms refers to as “bad development” might also be termed *maladaptation* where it increases the exposure and vulnerability of human populations and the systems on which they depend to risks associated with climate change and variability. For example, a shift from subsistence to commercialisation and an associated expansion of agriculture in the African Sahel during the anomalously wet 1950s resulted in a massive increase in the vulnerability of the region to subsequent drought episodes (Cooper, 1997, Thébaud and Batterby, 2001). When severe drought hit the Sahel in the 1970s, agricultural systems that had expanded into historically marginal but temporarily productive regions collapsed, and pastoralists who had been pushed into even more marginal environments lost their livestock and livelihoods (Swift, 1977; Thébaud and Batterby, 2001). It is estimated that millions of animals and hundreds of thousands of people died in the Sahelian drought and famine of the 1950s (Glantz, 1976; Sheets and Morris, 1976; Glantz, 1996).

A similar shift from subsistence to commercialisation has been underway in Mexico in recent years, as a direct result of policy interventions aimed at restructuring the agricultural sector (Eakin, 2005). The result of this restructuring in the Tlaxcala region has been the removal of government support for subsistence farmers, whose livelihoods are based on a variety of risk spreading strategies that include the exploitation of a diversity of crops, practices and geographical locations. Hardy, low-yield subsistence crops that have little commercial potential but which secure food supplies in a highly variable and unpredictable environment have been marginalised in favour of high-yield, input-intensive commercial varieties (Eakin, 2005). These changes have reduced the resources available to subsistence farmers, adversely affecting their ability to invest and innovate (i.e. decreasing their adaptive capacity), at a time of increased climatic uncertainty. The shift to commercial crops requires greater water use at a time when the availability of water resources in a changing global (and indeed regional) climate is a key concern.

The above examples illustrate how economic development that ignores the role of the environment in shaping livelihoods and sustaining human societies, and which fails to consider longer-term climate variability and change, can be maladaptive.. **For development to be sustainable it needs routinely to incorporate considerations of longer-term climatic variability and change, even in the absence of anthropogenically-driven global climate change.** This requires not only a change in the way policies are formulated, but arguably a **much deeper philosophical transition, involving the rethinking of the way human societies interact with the wider physical environment at the local, regional and global scale.** Such a transition will also require a re-examination of assumptions about progress, the nature of the relationship between human beings and the “natural” environment, and the nature and function of human civilisation.

3. Why are we where we are (2)? Climate change and past civilisations

A popular view of the development of human civilisation - in the form of large, complex, state-level societies characterised by a high degree of urbanisation and specialisation - is that it emerged as a natural consequence of technological and economic innovation, once the world's climate had become more benign and stable after the end of the last ice age some 12,000-10,000 years ago (e.g. Burroughs, 2005; Gross, 2005). However, the archaeological and palaeoenvironmental records indicate that, rather than being a product of abundance, the world's first civilisations emerged in the Middle Holocene period (between about 6000 and 4000 years ago) in areas undergoing extreme climatic and environmental desiccation. This desiccation was associated with the collapse and retreat of the northern hemisphere monsoon systems in what is now the Afro-Asiatic desert belt (driven by natural changes in the Earth's orbit and probably triggered by changes in the North Atlantic circulation), and with the likely establishment of today's El Niño Southern Oscillation (ENSO) cycle and the cooling of the ocean off the west coast of South America (Brooks, 2006). The world's first civilisations appear to have been the products not of abundance and "progress", but of scarcity and adaptation. All emerged in river valleys situated in regions where landscape productivity was collapsing over wide areas. The resulting extreme resource scarcity, and the consequent concentration of human populations in restricted geographical areas - environmental refugia where water, pasture and fertile agricultural land were still available - appears to have played a key role in the development of the first cities and states (Brooks, 2006b).

The large-scale changes in atmospheric and oceanic circulation, and the resulting impacts on regional climatic conditions, landscapes and ecosystems that occurred in the Middle Holocene, represent the last systematic reorganisation of the global climate. They provide a useful (although very general and by no means precise) analogue for the period of climatic reorganisation and disruption that is almost certainly commencing at the beginning of the 21st century as a result of human alteration of the global atmosphere. While the mechanisms behind Middle Holocene climate change were very different to those driving climate change today, and while the magnitude of the change in global temperature was much less than that projected for the 21st century (Jansen et al., 2007), some broad parallels may be drawn. For example, the transformation of environments humid enough to support a rich variety of plant and animal species and a significant human population into hyper-arid desert (e.g. in the Sahara: Brooks et al., 2005) are suggestive of projected changes in locations such as southern Africa and the Maghreb, as discussed above.

Perhaps even more relevant in the context of considerations of climate change and development are some of the apparent social consequences of severe climate change and associated resource scarcity evident in the archaeological record. For example, from West Africa to China, societies experiencing such scarcity became more territorial and unequal, based on evidence of increased social stratification at times of environmental desiccation (Brooks, 2006b). In Egypt and Mesopotamia, social transitions at the end of the 4th millennium BCE during a time of climatic crisis were associated with political and social upheaval and violent conflict (Midant-Reynes, 1992; Leick, 2001, p. 55; Schwartz, 2001, p. 262). There is evidence of large scale migration throughout the Saharan region, in response to the collapse of the monsoon, at the same time (Vernet and Faure, 2000). Regional climatic desiccation also appears to have been associated with cultural fragmentation in some areas (Possehl, 2002; Matthews, 2003).

The combined study of archaeology and past environmental change indicates that civilisation did not emerge as a result of abundance, or of some vague force of human progress. Rather, it appears to have emerged as an accidental consequence of a series of ad hoc responses to resource scarcity driven by severe climate change. From an archaeological and environmental perspective, civilisation is neither intrinsically “good” nor “bad”, but merely one means of organising large populations to manage limited resources.

How is this relevant to us today? As humanity enters a period likely to be characterised by widespread climatic disruption, a global redistribution of resources, and an associated scarcity of key resources in many regions (particularly in the developing world), societies across the globe increasingly will have to make tough decisions about development. **For example, are current patterns and levels of resource consumption sustainable? Are existing development plans, policies and practices viable in the face of potentially severe regional climatic and environmental changes? How will societies cope with large reductions in the availability of water, productive land, and (in some coastal regions) habitable areas?** Where such questions cannot be answered readily or positively, what are the implications for, and indeed the meaning of, development? Lower-impact livelihoods that are often viewed as “primitive” or ‘backward’ may be more sustainable in times of environmental transition than more “advanced” systems of production (e.g. di Lernia and Palombini, 2002). Indeed, an examination of human-environment interaction in the Middle Holocene illustrates that the ideologies of progress associated with such descriptions are themselves based on a misreading of human history, and a misunderstanding of the origins and nature of civilisation.

4. What are the futures of global development? Impetus for change

Global futures are extremely uncertain, subject to radical flux, and influenced by many competing and unpredictable drivers. Climate change is just one such driver. Processes of globalisation, technological change and urbanisation are three critical areas of change that will affect and be affected by impacts of climate change. Box 2 outlines a series of projected changes that will affect future human populations. These show the severity of challenges faced by developing countries, especially in terms of meeting demands for services in urban areas with huge increases in populations. Water stress and food scarcity are set to increase substantially, with implications for local and regional human security. Quite apart from these changes are future transformations of society based on technologies, such as nanotechnology, transhumanism and bioengineering. These futures are largely still outside of the awareness of development practitioners.

It is within this wider framework of development trends that climate change impacts will affect human societies and the systems on which they depend. Already climate change has been taken on board seriously by the development community in a number of ways:

- i. beginnings of the incorporation of the science climate change and associated uncertainties into current development practice
- ii. a focus on improving resilience and decreasing the vulnerability of livelihoods
- iii. working towards ‘climate proofing’ projects as a minimum response
- iv. responses to funding source possibilities. Climate change develops new possible funds for ‘ecosystem services’ that can possibly benefit developing countries if administered and harnessed effectively (e.g. CDM projects, Adaptation Fund etc.). This has the added negative implication of complicating aid delivery further and increasing bureaucratic top-down structures.

Impacts of climate change have been incorporated less thoroughly in terms of:

- i. consideration of more radical approaches to societal development.
- ii. encouraging development institutions look to the longer term beyond 2015 and combine longer-term planning with more policies and practices aimed at delivering more immediate developmental benefits
- iii. questioning what constitutes low carbon development and how to prioritise this strategically in development efforts

The importance of ‘development as economic growth’ has been challenged to some extent through the impetus of the human development report and other policy-relevant writings focusing on alternative indicators of human wellbeing, such as human rights and measurements of happiness. However, as pointed out in section 2 above, these have had a limited impact on many of the world’s economic institutions and their functions.

Instead, much of the recent impetus towards different approaches to development and questioning what ‘progress’ is in the light of climate change has come from the environmental movement. This has linked ideas of environmental sustainability with carbon emissions and human lifestyles, particularly relating to peak oil, a looming energy crisis unprecedented throughout history, and environmental degradation (Leggett, 2005; Warde, 2007). Consumption levels in developed countries are seen as unfair as well as unsustainable (Garvey, 2005; Pretty, 2007), with the ecological debt of developed countries cited as more serious than economic debt in developing countries (Simms, 2005). Shifts towards different lifestyles have been encouraged on grounds of morality (Garvey, 2005), and in international agreements and actions on climate change on grounds of justice (Adger et al., 2006).

Several years ago, Walters and Simms (2002) claimed in *The End of Development* that efforts at development are being undermined through a combination of (i) lack of attention to disaster prevention, (ii) climate change’s negative effect on human development aims expressed in the Millennium Development Goals, (iii) the negative impact of the free market and (iv) a perverse combination of debt burden and agricultural subsidies on developing countries. They called for attention to be focused on disaster resilience – every policy for aid, development and investment to be assessed on these terms, spending resources more intelligently and equitably, and focusing on the share of aid that reaches those places most needy, whilst dealing with the more long term, fundamental problems of the structuring of the world economy. Critically, they also address the need to reduce resource consumption in the rich nations.

The IUCN Renowned Thinkers group, with its conservation priorities, focuses on rebranding sustainability into resilience to reinvigorate what it sees as a tired concept, and discusses measurement of the production of human wellbeing per unit of extraction from or imposition on nature (IUCN, 2005) – thus focusing more on quality of life than on material consumption. Holistic externality measurement of industrial, economic and social processes is another key goal well known to the environmental movement. New aims, new means and new debates about human goals are required “*that allow people to separate ends – happiness, freedom, fulfillment, a diversity of options) and means (jobs, income, wealth, possessions, consumption, power)*” (IUCN, *ibid*, p. 14). Bhutan, famously, adopted a measure of Gross National Happiness rather than economic development. Can other countries follow suit when assessing and investing in their development, and how would this be different to development initiatives currently in action?

Box 2: Current values and future projections of key indicators for global populations

	Current	Future	Implications	Sources
Water Global water demand Population "water stressed" (<1000m ³ per capita per year)	1997: 3,906 km ³ 2006 0.7 bn	2025 4772 km ³ 2025 3bn+	Food yield decline Conflict Human health	http://www.ifpri.org/pubs/fpr/fprwater2025.pdf http://www.sandia.gov/water/docs/CSISSNL_OGWF_9-28-05.PDF UNDP Human Development Report 2006 http://hdr.undp.org/en/reports/global/hdr2006/ p. 135-6
Food availability Global cereal demand Meat demand	1997: 1843 million t.	2020: 2487 million t. Increase 55% 1997-2020	Food price rise Developed countries export to Africa Hotspots of hunger and malnutrition in SSA	IFPRI (2001) Global Food Outlook 2020 http://www.ifpri.org/pubs/fpr/fpr30.pdf
Population Total population Elderly population	2007 6.6bn 2007 7%	2025 8bn 2050 9bn 2050 10%	Almost all increase is in developing countries	Population reference bureau (2007) http://www.prb.org/pdf07/07WPDS_Eng.pdf
Urbanisation	2007 3.3 bn 2008 Urban pop = 50% total	2050 6.4 bn 2050 Urban pop = 70% total pop	Population growth an urban developing country phenomenon almost exclusively; Basic service provision, job demand, urban poverty	World Urbanisation Prospects 2007 Revision UN Population Division http://www.un.org/esa/population/publications/wup2007/2007WUP_ExecSum_web.pdf
Global Economy Proportion of global population in absolute poverty	1990 29 percent 2004 18 percent			Global Economic Prospects (World Bank 2008) http://siteresources.worldbank.org/INTGEP2008/Resources/GEP_ove_001-016.pdf

5. Tools and methods

A number of guidance frameworks have been designed to help development practitioners integrate or 'mainstream' climate change considerations into development at a variety of levels, stages and entry points. Climate proofing has become a buzz word in these circles, relating to agriculture, urban and rural regions, projects and programmes. Numerous agencies are producing guidance documents for the integration of climate change into development plans, policies, programmes and projects (e.g. UNDP, 2005; Government of Australia, 2006; USAID, 2007; OECD, 2008; see also Klein et al. 2007). A number of bodies are developing integration frameworks that focus on adaptation, for example DFID (with its ORCHID programme¹, which focuses on links between climate change and disaster risk management), and UNDP, which is currently developing a Monitoring and Evaluation Framework for Adaptation and a set of Quality Standards to guide its programming with respect to adaptation to climate change. Broadly speaking, mitigation and adaptation are treated separately, with activities in these two areas coordinated by different departments within agencies.

Integration frameworks typically provide general guidance on the screening of development activities (e.g. in the form of projects and programmes) for sensitivity to climate variability and change, so that vulnerable activities may be identified and subject to 'climate-proofing'. The identification of opportunities for risk and vulnerability reduction and other adaptation interventions is often emphasised, as is linking adaptation with activities such as disaster risk reduction and poverty reduction. There is also ongoing research and discussion on climate science with development agencies is how to make shorter term (e.g. decadal) climate forecasts more accurate (Wilby, 2007), and reducing uncertainty around predictions in certain regions of the world (e.g. PRECIS models of Hadley Centre).¹

Integration frameworks and guidance represent important tools for development practitioners needing to incorporate considerations of climate change into their planning. However, they are firmly embedded within the development discourses described earlier in this paper, and only go so far in addressing questions of how development frameworks and practices might or should evolve in the face of climate change that is likely to manifest itself through impacts that go beyond changes in variability and extremes. Where anthropogenic greenhouse warming fundamentally alters regional climate, environments, landscapes and resource availability, making existing development models impractical, responses may need to go beyond mainstreaming and climate proofing.

A variety of tools may be required to explore how societies can exist in dramatically changed, and continuously changing, environments. One method is that of long term scenarios creation about global futures, focusing on development and humanitarian issues, such as those generated about political futures in East Africa (Society for International Development, 2002), food systems (GECAFS, 2008) national futures exercises such as that of Burkina Faso Future Prospective 2025 and global humanitarian futures (Humanitarian Futures Group, 2007). Scenarios can be devised with climate change a central factor through which other development drivers and responses are examined (Grist, 2007). Using interactive processes with a broad set of decision makers, integrating this within government structures and personnel, provides opportunities for the shifts in thinking and practices within organisations. In discussing the move towards 'climate-smart' organisers, Tanner and Mitchell (2007) cite visioning and horizon scanning exercises as part of the later 'maturity' phase of organizational change, although these could equally be used at the beginning of this process as engagement tools for strategy development.

Conclusion

This paper has sought to outline the current debates in development and climate change with an emphasis on what past and present have to offer us in consideration of future actions. Theories of economic growth underlying improvements to society's wellbeing are questioned increasingly as understanding grows about impacts of climate change and issues of justice and equity at a global scale. Tools, methods are being created to meet some of the organisational and leadership challenges imminent. It is clear that development practitioners need to look far beyond what is the normal state of affairs when incorporating issues of climate change within their work and perspective. The development challenges posed outside of climate change mean that these changes need to be brought in as a

¹ However, the ability of models to produce reliable predictions of regional climate change has been questioned, as has the wisdom of demanding more detailed and precise (and possibly erroneous) forecasts for the purposes of policy formulation and planning (e.g. Palmer, 2008; Pearce, 2008)

fundamental part of all development efforts in a rapidly shifting global context. This is the starting point of our group discussion.

Further Reading

- DFID (2008) Research Strategy 2008-2013 Working Paper Series: Climate Change
<http://www.dfid.gov.uk/research/Climate-Change.pdf>
- Human Development Report (2008) Fighting Climate Change: Human Solidarity in a Divided World.
http://hdr.undp.org/en/media/hdr_20072008_en_complete.pdf
- IDS (2007) In Focus Adaptation and Climate Change Briefing Note Series <http://www.ids.ac.uk/index.cfm?objectId=61C5E34F-0C47-6CC1-C9C8484E86231263>
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