

Islam and Climate Change: Perspectives & Engagement

By Dr Muzammal Hussain

Copyright © Muzammal Hussain

INTRODUCTION TO THIS PAPER

This paper is a slightly refined version of my final dissertation within an MA in Environment, Development and Policy, which I completed at Sussex University in September 2006. Immediately after completing my dissertation, I was thrown into a flurry of personal activity, which was followed by an urgent need to regain financial security following a year of being a full time student whilst also participating within the climate movement. It wasn't thus until a few months after handing it in, that I could sit down and produce this slightly more refined version, which remains within the limits of the research available at the time of the original. Hence, the Stern Review and the IPCC 2007 Report, for example, do not form part of the bibliography.

In writing this paper, one of my intentions was to integrate and add clarity to my own personal understanding of Islamic environmental ethics in relation to climate change, an understanding that continues to evolve; and whilst I pray that this paper also benefits those who read it, there is still plenty of scope for developing and refining the arguments put forward. Anyone who wishes to do this is actively encouraged to take the work forward. Equally, there is no end to the academic research that can be written on an issue, and thus if the consequences of inaction are known to be globally catastrophic whilst solutions hang in front of us, then appropriate action is also immediately warranted.

Thus, I urge everyone reading this paper to take up the climate challenge in their own lives, and also to engage with others to conceptualise and actualise the peaceful, just and sustainable world that we wish to leave for future generations to come.

SUMMARY

Firstly the main influences on the earth's climate, both natural and anthropogenic, are outlined. This is followed by a focus on the resultant impacts of climate change that are currently taking place as well as those which might potentially take place over the next few decades. The paper will then move onto examining a number of relevant themes which stem from Islamic teachings to draw together basic principles of an Islamic environmental ethic which will be used to explain and derive meaning from the processes and impacts associated with climate change, as viewed from within the faith. This examination will be followed by a discussion on the value of some basic principles inherent in an Islamic approach to economics, contrasted with those prevalent in the economic system that dominates our current time. Finally, this paper will attempt to uncover what forms an Islamic response to climate change might take, with particular attention given to how Muslims living in the UK might engage with the climate issue, with the intention being to point to constructive avenues of expression and thus draw out more of the potential that society has, to collectively engage with this global and pressing challenge.

INDEX

Preface	4
Acknowledgements	5
Chapter 1: The Changing Climate	6
A Critical Point	6
Anthropogenic CO2 Emissions & the Need for Energy Reduction	7
Climate Change Impacts	7
Chapter 2: An Islamic Environmental Ethic in a Warming World	9
Islam: The Basics	9
Mounting Wealth and the Religion of Self-Interest	10
Signs for Reflection: Nature and the Qur'an	10
The Silencing of the Worshippers	11
When Proportions are Altered	12
The Doors to Transcendence: Deep Environmentalism	13
The Journey Home	14
Dazzled to Consume	14
Guardianship: A Responsibility the Mountains Refused	16
Tawhid: The Ultimate Meeting Point	16
Unnatural Disasters	17
Hierarchy of Needs: Prioritisation within Islam	20
Future Generations	21
The Precautionary Principle	21
Population Control in Islam	22
Chapter 3: Economics in an Era of Climate Change	24
The Unnatural Dimension of Money	24
Fractional Reserve Banking	24
Compound Interest, Riba and Usury	25
The Fruits of Modern Banking	26
Discounting: When We Care Less about the Future	27
Basic Principles of Islamic Economics	28
Alternative Investments	29
The Medium of Exchange	29
Islamic Economics: Concluding Remarks	30
Chapter 4: Discussion: Paths to Engagement	31
The Call to Environmental Justice	31
Levels of Response: Personal, Community and Economic	31
Chapter 5: Conclusion	33
Bibliography	34
Glossary of Arabic Terms	37

PREFACE

Whilst at any given time, there are numerous challenges facing humanity, within the UK we find ourselves in a place whereby two issues in particular appear to have simultaneously gained a prominent and secure foothold within the consciousness of global politics, seen from where we stand. The first issue is the relationship of the West with Islam and Muslims, and the second is climate change.

Discussions on Islam and Muslims have been occupying an increasing proportion of media space. Whilst voices within the Muslim community are diverse, simultaneously, major events such as 9/11 and 7/7, which have caused or have attempted to cause destruction in the name of Islam, have had a tendency to paint the religion with a particular brush, which serves to stigmatise a community who in their diverse parts mostly do not share the vision and means pursued by those involved in planning and perpetrating such acts. At the same time, there is nonetheless considerable unease arising from a sense of Western complicity and support over felt injustices taking place in certain parts of the Arab and Muslim world, particularly in the Middle East. These feelings are held by many Muslims and also by those of other faiths, as well as those of no faith.

Whilst there is an acknowledgement of fierce emotion over the issues just described, which thus deserve focussed attention, simultaneously humankind's impact on the earth's climatic system is leading to a world where life on the planet as a whole may, over the next few decades, become radically different. In some parts of the globe it may be difficult for much life to survive at all. Consequently, whilst paying attention to other important issues like the Middle East conflict, there is also a need, in the context of global and local politics, for humanity to come together to confront the challenge of climate change, especially in order to prevent the process becoming so advanced that a 'tipping point' is reached and the earth continues to warm up regardless of any human intervention which follows. This paper comes from a place that considers the input of all communities, including the Muslim community to be a vital factor in rising to the challenge presented to us by the process of global climate change. The focus of this paper on Islam is to assist in providing a constructive meeting point between communities who already are, or will pay attention to the increasingly visible challenge of climate change, and the Muslim community which has a deep need to be better understood and engaged with in its diversity, yet has largely paid little attention to it.

Whilst the range of literature attempting to develop a general model of an Islamic environmental ethic has grown considerably over recent years, literature examining specific contemporary environmental problems through the lens of such an ethic, appear to be negligible. Indeed, despite the growing awareness of the seriousness of the threat that climatic change presents to the planet, within the literature surveyed in the course of researching this article, no account was found which provided a comprehensive analysis of climate change from an Islamic viewpoint. It is this gap which this paper attempts to fill.

ACKNOWLEDGEMENTS

The completion of this paper in its final form went beyond the reading of literature. It also depended on the support of a number of key individuals. Firstly a big thank you to my tutor, Julian Saurin, for his patience in listening to my ideas and his simple, yet treasured advice, all whilst amidst his own numerous responsibilities. Fazlun Khalid has been instrumental in helping me start my journey in exploring Islamic environmentalism at a deeper level and whose work remains a comprehensive source of reference. Thank you to the two people who kindly trusted me with their books and literature, Usama Hasan (as well as for his very helpful reading recommendations), and Irma Hussain. Paul Jonas frequently stimulated me in discussions by taking an opposite view and challenging me to think more widely, and Femi Hughes often offered support and encouragement, helping my motivation to be sustained. Thank you to Hassan Khabbaze for taking the time to read through the entire paper and offering helpful feedback. Appreciation also extends to teachers who have assisted me along my spiritual journey, through which my own personal realisation of the interconnectedness and beauty in the world has been enhanced. And finally thank you to my mum for her frequent phone calls which allowed me to feel good when I could tell her how many fewer words I had left to go from the day before.

1. THE CHANGING CLIMATE

This section will present an overview of the process of climate change and its impacts. The findings illustrate that the temperature of the earth has increased and is predicted to increase further, that this increase is influenced by a rising concentration of greenhouse gases in the atmosphere for which human activities are responsible. Of particular significance to future projections is the possibility of a 'tipping point' that if reached would cause the climatic system to enter into a whole new state, within which the process of warming will begin to continue on its own accord regardless of human intervention.

A Critical Point

Houghton (2004, pp.72-75) explains that whilst inter-planetary factors have a significant influence over the earth's temperature due to gradual shifts in the earth's relationship with the sun, the temperature change that these cycles induce is relatively slow, taking place over thousands of years. For instance, data extrapolated through the analysis of ice core samples indicate a 0.2°C rise per century over Greenland between 20, 000 BP and 10, 000BP, with lower rates of warming elsewhere. Sudden, faster rates do appear, nonetheless, to have also occurred, though the evidence indicates that these rapid changes expressed a regional quality, with the trigger being more local. For instance, a rise in the Arctic temperature of about 7°C over a period of a few decades just over 10, 000 years ago has been correlated with acute changes in the Atlantic 'conveyor belt'. On the other hand, the current pattern that we are witnessing, in which there has been a 0.6°C temperature rise over the last century, and of greater concern, a predicted rise of several degrees within the current one, is a pattern which is both, being expressed globally, and is also relatively sudden.

Apart from inter-planetary influences, other significant natural factors known to influence global climate are solar radiation and volcanic activity, but according to the Hadley Centre the recent global warming can only be adequately explained by a rising concentration of greenhouse gases in the earth's atmosphere. Of these gases, carbon dioxide (CO₂) is considered to be the most important, and whilst carbon emissions from human activities is relatively small in comparison to the total carbon in the natural carbon cycle, the addition of it is sufficient nonetheless to upset the balance otherwise in place, hence explaining its rising concentration in the atmosphere. Thus, from a level of 280ppm (parts per million) from before the industrial revolution, the concentration has increased by about 35%, having now reached approximately 380ppm (Met Office, 2005, pp.10-29). This recent rapid rise of CO₂ concentration is thus increasing the relative influence that CO₂ in the atmosphere is having on global temperature.

Of additional concern is the fact that CO₂ is being emitted at an increasing rate, thus indicating that not only are we travelling in the opposite direction to that which we need to be going in, but that this pace is accelerating. The net effect as predicted by the IPCC (Intergovernmental Panel on Climate Change) is a potential warming of up to 1.4°C to 5.8°C by 2100 (IPCC, 2001a). However, temperatures over land are predicted to rise even further to between 3°C and 8°C (Met Office, 2005, p.40).

According to the GCI (Global Commons Institute) any level of greenhouse gases higher than the equivalent of 450ppm CO₂ is considered to be 'not safe' (GCI, 2004, p.2). At the same time a stabilisation of emissions at 2000 levels would still result in a CO₂ concentration of 500ppm (Houghton, 2004, p.254). Coupled with the fact raised in the previous paragraph, that the rate at which CO₂ is being emitted is increasing, it follows that urgent global action to reduce greenhouse gas emissions is essential.

Anthropogenic CO2 Emissions and the Need for Energy Reduction

Approximately three quarters of anthropogenic CO₂ comes from the burning of fossil fuels for energy, especially oil, coal and gas, with a smaller contribution coming from changes in land use (Houghton, 2004, pp.31-32). In the UK, whilst renewable energy together with energy efficiency could replace some of the electricity obtained from fossil fuels, it appears however that not only would the proportion be inadequate even in an optimistic scenario, but that transport and aviation, for example, would still be unaccounted for, which whilst largely not depending on electricity generation, still require fossil fuels on which to run (Monbiot, 2005). Also, on the basis that both UK and global CO₂ emissions are rising, it appears logical that a mindset of restraining energy consuming activities would need to form part of the solution to deal with climate change. The potential that Islamic spirituality offers as one vehicle, in cultivating this mindset amongst its followers, will be explored later in the paper.

Climate Change Impacts

As global temperatures increase over the years, numerous consequences will follow, yet due to variables as well as the complexity of the interactions involved, these consequences can only be predicted as a range of possible scenarios. This section will provide an overview of some of the findings that describe emerging patterns.

With higher temperatures, extreme weather events are predicted to become more intense and/or frequent (Houghton, 2004, p.188). According to research from the Hadley Centre and Oxford University, the risk of high temperatures such as those which were experienced in Europe in the summer of 2003 in which thousands of people died, is estimated 'with a high probability of certainty', to be 'already doubled due to the effects of human activities such as CO₂ from fossil-fuel burning', and under a medium high emissions scenario, the 2003 summer is predicted to be an average summer by 2040, and a cold one by 2060 (Met Office, 2005, p.30; Met Office 2005, p.43).

Whilst the summer of 2003 is currently considered an extreme summer, WHO (World Health Organisation) published a report in 2002 which estimated through comparisons with the period between 1961 and 1990, that in the year 2000, global warming caused 150, 000 deaths. The cause of these deaths was considered to be due to diarrhoea and malaria (WHO, 2006).

The displacement of millions of people from their homes could take place as sea levels rise. The rise would be due to the thermal expansion of water and melting glaciers, ice and snow cover. Projections to the end of the century under a high emissions scenario predict a 0.9m rise in mean sea level, with double this value in some areas due to regional variations (Met Office, 2005, p.49). The scale of displacement could be particularly marked in Bangladesh and Vietnam where almost 15 million and 17 million people, respectively, could be displaced (IPCC, 2001b, p.569). One issue which arises is that countries such as these produce a relatively small quantity of greenhouse gases per capita. There thus exists an unfairness with respect to who uses fossil fuels and who suffers the consequences of their use. With the more wealthy countries responsible for the vast proportion of CO₂ emissions, Mrs Choudhury, a former environment Minister of Bangladesh asked the "developed countries of the world to rethink their immigration policies", when she spoke on BBC Radio 4 (Kirby, 2000). Later in the paper, an attempt will be made to consider how an Islamic perspective might view disasters in the context of innocent people suffering.

Climate modelling shows that the effect of higher temperatures on crop yields could lead to a pattern whereby people who emit less CO₂ per capita could again be worse off. Whilst, it appears that global food production is unlikely to be seriously affected, inequalities in food distribution are likely to be further exacerbated between the North and the South, with at least sixty million more people at risk of hunger in Africa. Additionally, heat stress will threaten forests, the consequence of which would further exacerbate climate change through the release of carbon dioxide, triggering a positive feedback process associated with a warming world (Houghton, 2004, p.168 & 188).

With more heat from the oceans able to fuel the formation of hurricanes, it might seem plausible that global warming will also influence hurricane activity. With immense damage to life and property recently caused by hurricanes affecting the USA in 2005, more fingers are being pointed at a warming world as the cause. However, whilst an overall increase in hurricane frequency has not been linked to warmer temperatures, there is nonetheless, some evidence to suggest that an increased incidence of *intense* hurricanes (i.e. categories 4 and 5) might be, thus implying that hurricanes of a severity comparable with that of Hurricane Katrina may become more common over the years (Webster et al, 2005). It also appears that higher temperatures might be related to more intense precipitation events as the air's capacity to hold and hence release larger quantities of water is increased. Consequently heavier, more extreme rainfall and flooding would be increasingly common, as already appears to be occurring in parts of Europe, North and South America, and South Africa, for example (Lynas, 2004, p.10-12).

A particularly important aspect of climate change is noted by the International Scientific Steering Committee (ISSC, 2005, p.5) who point to an 'irreversible system disruption'. This would take the climatic system into a whole new state. They add that such a tipping point is more likely to take place at temperatures approaching 2°C above pre-industrial levels. The mechanism would involve positive feedback processes, such as through the release of CO₂ from forests, as mentioned earlier in this subsection. In addition, the release of the more potent greenhouse gas, methane, from melting permafrost would add to the greenhouse effect, warming up the earth further, which would speed up the rate at which the permafrost melts, releasing even more methane and so forth (ISSC, 2005, p.10; Met office, 2005, p.66-67). The consequences of these positive feedback cycles becoming established is that any reduction in human greenhouse gas emissions following such a time, may prove ineffective at stopping the warming process. In order to avert such a disaster, thus, there is a short window of opportunity within which firm and effective action needs to be taken, and then sustained. It is therefore vital that the potential contained within as wide a range of social groups as possible, is actualised to help reduce global greenhouse gas emissions to the necessary safe level, preventing the climate system from tipping into this uncontrollable state.

2. AN ISLAMIC ENVIRONMENTAL ETHIC IN A WARMING WORLD

Islam: The Basics

This section will outline a basic background explaining how guidance and principles are derived from the Islamic texts, such that they can be applied to the changing circumstances that followers of the faith find themselves in. It will consider the two fundamental sources of Islamic law, the *Qur'an* and the *Sunna*, and will also touch on *ijtihad*. This is a process which whilst historically lacking in application, is considered to be essential in order that the sources remain relevant to changing times.

The primary source of Islamic law for Muslims is the Qur'an, which they believe to be the word of God. Muhammad is their last Prophet, to whom the Qur'an was revealed in stages over a period of 23 years, beginning in the year 610AD, when Muhammad was immersed in a spiritual retreat on a mountain near Mecca (Ramadan, 2001, p.12; Armstrong, 2001, p.82-83).

The Qur'an, consists of 6, 238 verses, and Ramadan (2001, p.13-14) points out that whilst there are passages with clear absolute dimensions relating for instance, to history and spirituality, there are also passages relating to human activity and social order which offer 'principles of orientation', that provide, 'the point of reference for jurists who have the responsibility, in all places and at all times, of providing answers in tune with their environment without betraying the initial orientation'.

Kamali (1991, p.31) shares a similar view that there are both general principles, as well as areas of greater precision and certainty which pertain to 'transcendental matters', and which he argues are characteristically unchangeable. Ramadan, (2001, p.13), stresses the absolute nature of the revealed message, even in the relative answers in which the absolute principles are to be reflected.

Another source of Islamic law is the *Sunna*. This refers to Muhammad's sayings and his actions, through which principles are derived by jurists to provide further guidance for Muslims to 'live with their time and environment while still remaining faithful to his teaching' (Ramadan, 2001, p.15).

As Nyazee (2000, p.241) explains, the process for deriving law from the *Qur'an* and the *Sunna* is called *ijtihad*, and this consequently provides the process necessary for the fundamental texts to be applied to changing circumstances. Hence without the process of *ijtihad*, what might then be practised as Islam would be practised out of context, and would thus be less likely to reflect the absolute values that Islamic law is meant to reflect. As the application of core Islamic principles would depend on the circumstance to which it is to be applied, the derivation of Islamic laws thus necessitates a clear understanding of current relevant science, politics and social values, for example, if the principles are to be applied with the deeper value intended – thus cooperation between different sectors of society would form part of the process of deriving laws (Kamali, 1991, p.xvi; Ramadan, 2001, pp.76-77).

As Hudson (1980, 4) points out, the assumption that Islam is static 'is to assign too much weight to the "closing of *ijtihad*" by the religious scholars of the third Islamic century', as well as to ignore innovations from the end of the 18th century. Kamali (1991, p.xvii) explains this closure to be part of the reason why a gap has developed between Islamic law and 'the changing conditions of society' and adds that 'the quest for better solutions and more refined alternatives lies at the very heart of *ijtihad*, which must...never be allowed to discontinue'.

However, whilst the struggle to apply Islamic sources to contemporary issues including global climatic change would require the process of *ijtihad*, as wisely pointed out by Llewellyn (2003, p.237), 'No matter how sincere or well intentioned, attempts at *ijtihad* by environmental specialists without qualifications in Islamic jurisprudence are invalid, and attempts at *ijtihad* by jurists without practical experience in environmental issues are irrelevant'. With the combination of these two ingredients lacking in the process of producing this paper, rather than an attempt to arrive at concrete conclusions, it must thus to an extent, be seen as an effort to draw out possibilities and to inform the process of *ijtihad* for an issue that urgently requires it.

Mounting Wealth and the Religion of Self-Interest

The Prophet Muhammad was born into a tribe called the Quraysh which settled in Mecca near the end of the 6th century, and Armstrong (2001, p.66-68) vividly describes how this tribe evolved economically during the decades which preceded his birth, up until the time at which he began to preach the message of Islam at the beginning of the 7th century. She describes how Mecca's privileged geographical position with regards to two important trade routes, coupled with its attraction, in the form of its spiritual centre, the Ka'aba, created conditions which assisted the Quraysh to grow in economic power. Although their accumulating wealth helped to lift them out of a life of poverty, associated with this growth were aspects of human behaviour, which themselves created new problems for the community. As Armstrong (2001, p. 67) writes, 'Naturally they saw wealth and capitalism as their salvation' and thus that 'money began to acquire a quasi-religious value', which she explains, 'encouraged a rampant greed and individualism'. She then describes how the latter manifested in the form of exploitation of the weaker members whilst a fixation on building up personal wealth grew, and disparity between the rich and the poor increased.

Signs for Reflection: Nature and the Qur'an

The early teachings of Islam were very relevant to the problems associated with this growing wealth amongst the Quraysh, just described. For instance, Armstrong (2001, p.92) explains that early Islamic teachings included a focus on preventing the hoarding of wealth, whilst people were also encouraged to reflect on how much they owed to God, and that 'they should look at the signs of His goodness and power that were evident wherever they looked in the natural world', (Armstrong 2001, p. 96). This reflection on the marvels of the natural world would elicit wonder and hope, which have been described by Lings as 'attitudes of return to God' (Lings, 1991, p.68-69). Hence, early Islamic teachings contained a prominent theme that discouraged Meccans from centring around materialism and self interest, whilst simultaneously encouraged a reflection on nature as a vehicle to assist people in transcending the material world, and grow closer to their Creator (Armstrong, 2001, p.96).

Through early Islamic teachings, an intimate connection was thus made between nature and God. As has been pointed out by several writers, this Islamic relationship between the two is strengthened through the use of a particular word in the Qur'an. This word is *ayat* and it means *sign*. It is used within the Qur'an to refer to both nature, and also to verses in the Qur'an itself.

The connection between these entities, *nature*, and *verses* in the Qur'an, which also sheds light on the value that the early teachings offered in helping to dissolve the growing materialism and individualism described, is clarified by Nasr (1998, p.119), who explains that Islam views nature as having sacred qualities, and that Muslim sages 'saw upon the face of every creature letters and words from the pages of the cosmic Qur'an which only the sage

can read' (Nasr, 1998, p.120) He further explains that to remember Gods quality of encompassing all things, (in Arabic, *Muhit*), is to maintain awareness of the sacredness of nature into which Gods presence is said to permeate, which he explains is why 'the traditional Muslim always harboured a great love for nature' (Nasr, 1998, p.121). There are numerous instances in which the Qur'an which refers to nature as containing signs, one of which follows:

Behold! in the creation of the heavens and the earth; in the alternation of the night and the day; in the sailing of the ships through the ocean for the profit of mankind; in the rain which God Sends down from the skies, and the life which He gives therewith to an earth that is dead; in the beasts of all kinds that He scatters through the earth; in the change of the winds, and the clouds which they trail like their slaves between the sky and the earth - (Here) indeed are Signs for a people that are wise (Qur'an 2:164)

Whilst acknowledging that there are physical benefits gained by humans from nature, Nasr continues further:

our need for nature is not only to feed and shelter our physical bodies, but also and above all to nurture our souls. As the complement to the Qur'an as revelation, nature responds to our spiritual needs (Nasr, 2003, p.96).

Thus Nasr's argument, as described, emphasises the spiritual dimension associated with the natural world, which when realised leads to a particular attitude and reverence towards it, which would consequently also influence ones behaviour towards nature. In addition he also asserts that whilst nature has value to humankind, this benefit transcends the obvious physical and encompasses a spiritual nurturing, thus satisfying a deeper need.

The thread of materialism and individualism that ran through the society into which Islam initially spread as described in the previous section, seems to exist to an appreciable extent within many societies of today. As more people migrate into cities and unquestioningly submerge themselves into a world fixated on energy-intensive production that is becoming increasingly distant from the natural one, a price collectively paid from an Islamic point of view is the dissolving of a source of spiritual nourishment, a distancing from God and a spiritual need that becomes harder to satisfy. For many Muslims thus, these early Qur'anic verses present a message which is particularly relevant to the societies into which they are entering. The practical implementation of this message, through experiencing and reflecting on the natural world, therefore offers a vehicle that Islamically can be viewed as culturing a reverence towards nature and strengthening one's connection to the Creator, whilst simultaneously providing an antidote to the effects of living in a culture fixated on production, profit and the growth of the economy, themes that will be revisited later in relation to fuelling climate change.

The Silencing of the Worshippers

Having drawn out Islamic teachings related to the natural world in a general sense, a more specific angle will now be taken. Llewellyn (2003, p.188) describes the view of Qur'anic commentators that each species and each generation of God's creatures 'is a world unto itself', and that as a product of a divine and special creation, each life-form 'warrants special respect'. He adds that 'each creature glorifies its Creator, even if we do not understand its glorification' and quotes the Qur'anic verse, "'There is not a thing but celebrates His praise, but you understand not how they declare His glory"' (Qur'an 17:44)'. Nasr (2003, p.96) continues the line of thought by drawing attention to the implications of species extinction from this spiritual standpoint when he states that 'all creatures in the natural world sing the

praise of God. In destroying a species, we are in reality silencing a whole class of God's worshippers'

With regards to climate change, one species level extinction has already been implicated by it, and even at minimal climate-warming scenarios, 18% of species would be 'committed to extinction' in sample regions in the future, with 35% 'committed to extinction' under the maximum range (Thomas *et al*, 2004).

Integrating these two themes together, Islamic teachings would consider the warming climate to have an impact that is more than just physical. The collective spiritual expression on the planet is predicted to diminish even at low emission scenarios. If action on climate change can be supported by a louder voice from within the Muslim community, this voice will serve to assist the continued expression of the many more voices that also declare God's glory. On the other hand, in silencing oneself and ones sustainable behaviour, other classes of worshippers may also be destined to be silenced.

When Proportions Are Altered

A further theme related to the natural world is encapsulated in a term which has gained common usage within the environmental movement, and that term is *balance*. The Arabic word translated to mean balance, is *Mizan*, and it occurs in the Qur'an in several places. For example,

The sun and the moon follow courses (exactly) computed; And the herbs and the trees both (alike) bow in adoration. And the firmament has He raised high, and He has set up the Balance (of Justice); in order that ye may not transgress (due) balance. So establish weight with justice and fall not short in the balance. (Qur'an 55:5-9)

Whilst this next verse does not contain this word, the very same theme, nonetheless is captured by it: 'Verily, all things have We created in proportion and measure' (Qur'an 54:49). The commentary to this verse states that, 'Creation is not haphazard. Everything goes by law, proportion, and measure. Everything has its appointed time, place and occasion.'

As with numerous references to nature covered earlier, these two verses were also revealed in the early days of Islam. The word *balance* in the Qur'an has been interpreted to be pertinent to a wide range of contexts. However the basic notion is the same, which is that everything has been created with due concern to each and every other detail of creation, and thus as Armstrong (2001, p.96) writes, with 'all things in their correct relationship to one another'.

The challenge presented by Muhammad and asked of the Quraysh was to mirror the balance originating from God, within their own dealings with one another. Spiritual practice through *salaat*, which is the second pillar of Islam and involves ritual postures including bowing ones head on to the ground, was a means to help cultivate this spirit and to 'reorient their lives at a fundamental level' (Armstrong, 2001, p.97).

The underlying concept captured by the words *balance* and *proportion*, as in translations of the Qur'an, can provide an ethical dimension for Muslims on climate change. It is, after all, the concentration or *proportion* of greenhouse gases, which can be measured in parts, relative to a quantitative value of the earths atmosphere, that is increasing, and for which an increasing number of scientists and scientific bodies regard human behaviour to be an important factor. The consequences of this change in *proportion*, has profound implications for the entire planet. Hence, within the discussion on climate change, from an Islamic perspective the responsibility can be viewed to clearly rest on our collective shoulders, and

within the natural world the concept that underpins the current process taking place, is balance and proportion, which in terms of greenhouse gases has been disturbed.

A similar view is held by Parvaiz (2003, p.393), who refers to certain impacts of climate change, such as temperature increase and sea level rise, whilst also raising the point that the climate will continue to change for hundreds of years following the stabilisation of greenhouse gases, and he contextualises this scenario using Islamic oriented language: that an increase in the *proportion* of greenhouse gases is having a knock-on affect on the *balance* existing amongst all of creation. It is also known that, on the other hand, a major decrease in the proportion of greenhouse gases in the atmosphere, if this was possible, would also have dire consequences for life on the planet on the basis that the global average temperature 'would be about 30°C cooler than it is' without the greenhouse effect (Met Office, 2005, p.7). This gives value to the concept of balance and proportion regardless of which side it is viewed from.

The Doors to Transcendence: Deep Environmentalism

Whilst it is not unique to the literature on the Islamic faith to make connections between spiritual elevation and environmentally friendly behaviour, it is nonetheless surprisingly rare for this concept to be discussed within Islamic forums. Nonetheless a number of writers have attempted to explore this idea.

Chishti (2003, pp.71-73) asserts that through diligent practice of both the outer and inner aspects of the Shariah, one progresses to higher levels of spiritual development. He associates this journey with an increasing ability to perceive the 'light' of God, which leads the traveller of this path to recognise the true 'interrelationships between himself, the Divine, and all of creation'. Refining the description of this experience further, Chishti explains that not only does the traveller gain greater insight into the life and survival of all species, but also the balance of this with death, whilst appreciating that all aspects of creation are at their basis part of a unified whole. Whilst not directly articulated, it is apparent from Chishti's description of this journey that it is not simply an intellectual change, but is a fundamental shift in the *state* of the individual, in the way she or he thinks, acts and feels, and which develops out of consistency in practices, both the outward and the inward kind. He concludes that one consequence of this journey is behaviour that is more in alignment with environmental integrity, 'the use of no more than what is necessary, a respect for the privileges of other species, and a desire to preserve and protect creation in all its forms'.

A notion that appears to parallel the picture presented by Chishti is that of *ihсан*, which Ramadan (2005, p.25) translates as 'excellence' and describes as 'a complete and permanent submission of the heart and the mind to God's Will'. Majeed (2003, p.468) describes *ihسان* as meaning 'beauty' and 'virtue', and regards it to relate to:

the inner beauty, the beauty of the soul or the heart which necessarily emanates outward, transforming every human activity into an art and every art into the remembrance of God (Majeed, 2003, p.468).

Majeed continues by explaining that in Islam the concept of beauty is intimate to God and that *ihسان* can manifest through humans in the form of beautiful geometry, gardens, calligraphy and arches for example (which are art forms widely associated with Islam). He explains that just as these are expressions of *ihسان*, which reflects God-consciousness, the affect of witnessing these forms of expression can themselves affect the individual, leading to a greater appreciation of God. Hence it is almost as though a positive feedback loop can take root, the inner beauty of the heart manifesting in outer beauty, which in turn reinforces the inner on the path to God-consciousness.

The Journey Home

Within the discussion of spiritual development and God-consciousness is another relevant theme which is central to Islamic teachings and this is the concept of *fitra*, which Khalid (2002, p.337) describes as 'the pure state, a state of intrinsic goodness', and which according to Chishti (2003, p.77), means 'natural, or instinctive'. Like numerous writers, Chishti points out that Islam describes itself as the religion of the *fitra*. This refers not only to a pure state of intrinsic goodness which already exists within, and which a diligent practitioner would be moving closer towards, but it also encapsulates the view that favouring those most in need, which is considered a central element of the outward practices, is a quality which is intrinsic to human beings. Hence Islam considers altruism to be integral to the *fitra* of human beings (Chishti, 2003, p.77-78). On an individual level, the path of a return to the *fitra* would correspond with the spiritual journey detailed in the preceding paragraphs. Thus, such a state is one in which a human being is in constant recognition of their own place in the wider creation, is more primed to respond in a caring way to their environment and with more of the inner light, of *ihsan*, manifesting into their actions, that consequently are more in alignment to the needs of others, whether they be of the human world, or not.

Dazzled to Consume

Izzi Dien (2000, p.32) narrates a situation in which Muhammad asked of a companion not to waste water when he saw him using it in excess for *wudu*, the ritual of ablution performed in preparation for prayer, or *salaat*, the second pillar of Islam. The follower, whose name was Sa'ad asked if water could in fact be wasted, if it was being used for such a holy purpose. Muhammad replied that this was the case even if a person was near a flowing river.

Whilst the above example was specific to the act of *wudu*, there is a legal procedure called *qiyas*, which is translated as meaning analogy, and allows the extension of an Islamic ruling to other situations 'on the basis of a common underlying cause' (Nyazee 2000, p.397). Izzi Dien (2000, p.32-33) asserts that 'the conservation of all resources similar to water can be legally justified', through this process, and that 'Islam sustains the protection of all the essential elements of the environment from wastage even if these elements are plentiful'.

More substance is added to the conservative message in Islam by a particular Qur'anic verse which points to God as the entity behind the diversity of natural produce humans have available for consumption. This verse then ends with the following remark, 'But waste not by excess: for God loveth not the wasters' (Qur'an 6: 141), thus implying that whilst through nature, God provides, consumption can nonetheless be taken to excess, and the degree to which this is discouraged is emphasised through the statement that God does not love people who partake to this. This verse further adds to the argument put forward by Izzi Dien in the previous paragraph.

Ultimately every human activity is dependant to varying degrees on the availability of natural resources – these resources include elements that come together during production, or indeed are the products themselves, such as fruit for instance. Also, there is an additional ingredient, which is largely not directly incorporated into the material form of the end product, and this is energy. It is essential for fuelling both the processes of production, as well as any transport that takes place, whether this is the transport of resources, products or humans. It is the use of energy during these processes that is most pertinent to a discussion on climate change.

Within Islam, it appears that the unnecessary production and transport of goods and resources is discouraged as both depend on resource use. The implications that stem from this is that production should be more according to need as opposed to simply creating a market for profit, and it seems that localised production should be encouraged, whilst taking into account the wider context such as opportunities for wealth generation for everyone. As consumption encourages production, responsibility would extend to potential consumers as well as the producers.

If, thus, there is a religious constraint for Muslims with respect to the amount of resource use, be the resource plentiful or scarce, as well as constraints on consumption, then Islamic teachings are in effect encouraging behaviour to be directed along a path that is congruent with the goal of reducing fossil fuel use. Interestingly, this behaviour is being encouraged regardless of the time period and hence independent of whether climate change exists as a serious threat or not. From this perspective, climate change could be seen as one possible symptom of a deviation away from this principle. Simultaneously, as we shall see later, the fact that the threat of climate change does exist makes the case for Muslims to follow this principle embedded in their faith that that much stronger.

For those living in the West who are in contact with Muslims, Islam articulates a message which in the sphere of production, consumption and excess appears as described, to be in almost direct contradiction to the life-styles that many Muslims seem to be comfortably set in and enjoying. For instance, Ouis (No date, p.6) writes that she has 'noticed a great unawareness among Muslims in relation to personal consumption', and considers this to be a challenge that she wishes more Muslims would confront.

From another perspective it is also unsurprising that so many people of most cultures consume to the extent that they do, when one acknowledges the reach and intensity of corporate advertising. A particular passage in the Qur'an, as pointed out by Izzi Dien (2000, p.126-7) warns us of our vulnerability to losing our senses when an abundance of something strikes them:

Say: Not equal are things that are bad and things that are good, even though the abundance of the bad may dazzle thee; so fear *Allah*, O ye that understand that (so) ye may prosper (Qur'an 5:100).

The interpretation of this verse states that people are dazzled and their hearts captured by what they see all around them. Exploring this further the verse could be seen in part, to be encouraging people to recognise their own fragile nature when subjected to an abundance of things that may not be good for them, and which they have no need for, as can happen through advertising and through witnessing material goods others possess. Heightened self-awareness as the feeling of being dazzled arises, could help act as a guiding system, preventing an automatic response to sensing the abundance, which can otherwise often lead to a strong desire to have some of what is projected to us. By cultivating this awareness and developing sensitivity over the fragility of ones own psyche in such circumstances, people might then develop a greater sphere of control over how they respond. Simply wishing to have what the other already does, or what is advertised to us may gradually become a weaker option. Extending this further back along the process, greater awareness of situations which might give rise to such a feeling in a person, might even encourage them to explore ways that mean they are exposed to less of that situation, such as minimising television viewing or doing without one entirely, whilst engaging more with activities which connect them to their true needs.

Hence, both by being conservative with regards to the extent that one uses resources and consumes, and developing an awareness of the influence caused by persistent, calculated advertising and other situations in which one is exposed to things they do not need,

individuals could gain greater mastery and choice in their participation in the consumer culture. Thus through following principles embedded in the Islamic faith, Muslims might find that they are able to transcend the consumer culture. At the same time, they would be, in general, more inclined to support localised production, the net effect which would be that their personal carbon emissions would be encouraged to decrease.

Guardianship: The Responsibility the Mountains Refused

Islamic texts view humans as unique in creation. This stems from the belief that the human species has been granted a power that other aspects of creation have not. All of creation is considered to be in submission to God's will, whereas human beings have the unique attribute of being able to stand aside and choose to deviate away from what God is said to have prescribed for them. This power to disobey, coupled with the fact that humans exist within the rest of creation, means that human beings are being trusted to behave responsibly. This responsibility is one that is regarded as being so overwhelming that a verse in the Qur'an informs Muslims that when it was offered to the heavens, the earth, and the mountains, they each refused it.

We did indeed offer the Trust to the Heavens and the Earth and the Mountains; but they refused to undertake it, being afraid thereof: but man undertook it – he was indeed unjust and foolish (Qur'an 33:72).

In the interpretation of this Qur'anic verse, the implication is not that the heavens, the earth or the mountains literally had any choice, but this short parable offers an opportunity for reflection, encouraging appreciation of the magnitude of the trust that when offered to human beings, was accepted. According to the same interpretation the final part of the verse is seen to draw to attention the ignorance of human beings, in believing that they have more capability than they really possess, though the interpretation continues that when humans do their best then God's grace comes to assist them.

In the Qur'an this concept of trusteeship or guardianship, which was granted to the human species is called *khilafah*, and Llewellyn (2003, p.190) is of the opinion that much discussion on this term amongst Muslim writers in the last few decades has over-emphasised the privilege associated with this role. There has thus been a stress on the belief that human beings are superior to other aspects of creation. However, Llewellyn considers *khilafah* to be not a privilege, but a trust, responsibility and trial, and writes: 'To be a *khalifa* is not to receive, it is to serve' (Llewellyn 2003, p.190).

A number of modern writers share a similar view (Khalid, 2002, p.338; Chishti 2003, p. 75-76); and Ouis (No date, p.1) asserts that the 'environmental crisis is a failure of the trusteeship', viewing the natural world as a barometer whose reading indicates how well a society has fulfilled its responsibility given to it by God. Yet, with the changes that are occurring as a consequence of humankind's impact on the climatic system, it appears that our species may well be very close to breaking that trust entirely. The implications are that an urgent awakening is necessary for those that believe in the concept described in this section, if they are to meet their test of guardianship.

Tawhid: The Ultimate Meeting Point

The notion of one God is fundamental to the religion of Islam (Azzam, 1993, p.35). The centrality of it to the faith is evident simply by the fact that the first part of the very first pillar of Islam makes the statement that "there is no God, but God".

Historically, just as the early revelations of the Qur'an placed an importance on reflecting on the natural world, and referred to elements of nature as 'signs', the concept of one God began to also be emphasised by Muhammad, and in 616 AD he began to firmly forbid followers from worshipping deities other than the one God (Armstrong 2001, p 107; Lings, 1991, p.52).

These two themes, one God and the reference to nature as 'signs' or *ayat* are perhaps more directly related than may first appear. The concept of one God, or *tawhid* in Arabic, is also symbolic of the unity of creation. All of creation, in Islam, is said to originate from one source, and that source is God (Khalid, 2002, p.337). Along the same line, as was discussed in an earlier section, nature in all its diverse forms is considered through reflection to provide a means of directing ones attention to the source of its creator, and that again is the one God, who Muslims refer to as *Allah*. Hence the idea of unity of creation is captured in both the first pillar of Islam, which comprises a statement representing a belief, and through reflecting on nature, which consequently takes the form of a more direct experience of that underlying unity.

Ultimately the path to God-consciousness is thus a path along which one lives ones life in a state of increasing awareness of this oneness, understanding better ones place in the wider creation, and fulfilling ones role as *khalifa* or guardian of the earth, with greater ease.

Unnatural Disasters

In the context of humankind's disruption to the earths climatic system, changes are taking place that are predicted to lead to a number of impacts, many of which would fit under the convenient heading of *natural* disasters. This section will examine how Islamic thought might explain natural disasters in general, and will also look specifically at what underlying reason and purpose might lie behind those stemming from climate change.

According to Armstrong (2001, p.131) the Qur'an does not consider natural disasters to happen at random. The following verse in the Qur'an points to an underlying reason:

Mischief has appeared on land and sea because of (the meed) that the hands of men have earned, that (God) may give them a taste of some of their deeds: in order that they may turn back (from Evil) (Qur'an 30:41).

The interpretation of this verse is as follows, 'The consequences of evil must be evil, and this should be shown in such partial punishment as "the hands of men have earned," so that it may be a warning for the future and an invitation to enter the doors of repentance'.

The word, translated as 'mischief' in the above verse, is *fasad* in the original Arabic, and is sometimes also translated as 'disasters' or 'corruption'. Whilst the scope of meaning is potentially wide, it is commonly regarded that natural disasters are included within it. On this basis, threatening environmental impacts such as sea level rise, increased flooding, droughts, and hurricanes for example, which are associated with anthropogenic climatic change would fit into the kinds of disasters that this verse is referring to.

The Qur'anic interpretation that, 'the consequences of evil must be evil', implies that such disasters would be inflicted on those who have committed evil acts. The point that only, 'some of their deeds', would face punishment is emphasised through the use of the term 'partial punishment'. Thus, it would be the case that the impacts of climate change are evil responses to some evil actions. Yet, what is clear on considering the geographical distribution of the impacts of climate change, is that it is those who are relatively low emitters of greenhouse gases such as people living in Bangladesh, who appear to be affected the

most; and it is those that emit the most greenhouse gases, who are in general facing the consequences least. Equally, predictions for the future suggest a similar pattern, that the regions that are likely to be most affected, are not necessarily those that are most polluting. It is also clear that those polluting today will be affecting the lives of those born tomorrow. Hence, if natural disasters are a response to evil, it seems unlikely to be the case that the evil response is aimed at those who committed the evil action of emitting large quantities of greenhouse gases, despite the fact that this is what led to the response at the level of physical laws. Thus, such a view could not be congruent with the process and distribution of the impacts of climate change, as we understand them.

Hence, it seems that either the punishment due to climate change impacts is not meant to be punishment for contributing to it, but is punishment for something else, or that there is something more subtle, which is as the cause of those impacts, and which is being committed by those on the receiving end of the punishment. There is however a third possible explanation given by an Imam, who considers the word, 'their', in the original Arabic to have a meaning that is more collective (Hasan, 2006).

The notion of collective punishment is more directly alluded to in the following verse in the Qur'an: 'And fear tumult or oppression, which affecteth not in particular (only) those of you who do wrong and know that Allah is strict in punishment' (Qur'an 8:25).

This would mean that God's laws could result in a broad punishment for a more localised issue. Whilst still opening up the question as to why this may be, it nonetheless is somewhat congruent with the pattern in the physical world.

To build a clearer and more complete picture of Islamic perspectives on natural disasters, the discussion necessitates an examination of wider Islamic teachings and some of these will now be explored.

Siddiqi (2005 p.1-2) points out that the Qur'an stresses an extent to which, despite peoples actions, punishment is not afflicted:

If God were to punish men according to what they deserve, He would not leave on the back of the (earth) a single living creature: but He gives them respite for a stated Term: when their Term expires, verily God has in His sight all His Servants Qur'an (35:45)

The concept of a period of respite is placed in context by the interpretation presented to verse 43 of the same chapter of the Qur'an:

In all history, men who followed evil were dealt with in three stages by Allah: (1) He was forbearing and merciful, and gave them respite; (2) He sent down admonition through his messengers, or His Signs, or His revelation; (3) He dealt out justice and punishment. At any given moment, those given to iniquity may well be asked: "Are you going to wait through all these stages or are you going to repent, obtain forgiveness and walk the way of righteousness?"

Kutty (2005, p.1-2) explains, as well as for punishment, natural disasters can be seen as trials, tests and challenges for those who are directly affected. Armstrong (2001, p.131) highlights the message in the Qur'an in that it urges those afflicted by sufferings to meet them with dignity and fortitude. Also, when such disasters strike, needs arise amongst those who are affected. The acute nature and intensity of these needs can elicit feelings in people, and according to Kutty, (2005, p.1-2), the challenge to humanity of manifesting compassion is one face of such disasters. Thus whilst a disaster may appear to be localised, the function

behind it in terms of people for whom it is intended is delocalised beyond the region and beyond the affected population.

In the Islamic tradition, an increased frequency of natural disasters such as floods, fires, earthquakes and drought are also signs that the day of Judgement is approaching. However, this may not be in isolation to the other explanations in which case punishments, trials and the testing of humanity's charitable nature might simultaneously form part of the underlying basis for suffering.

Whilst this section brings some clarity as to why natural disasters occur according to Islam, the reasoning given cannot provide a definitive answer as to why a particular disaster affected, or might affect, a particular group of people at a particular time or location. Thus gaps remain in the answer given so far.

It must be said, however, that the effort in attempting to explain the underlying reasons as to why disasters occur, has so far in this paper, largely attempted to stay within the boundaries of logic. The mind of God as projected through Islam is thus being approached and analysed through the prism of logical reasoning. In order to develop a precise and logical model explaining why, disasters occur, and why from an Islamic perspective a particular group of people were affected but not others, in the first instance this would require the availability of the complete set of factors necessary to formulate such an accurate model. Yet, these factors do not appear to be available within the Islamic teachings reviewed, and hence for this paper it is not possible to come up with a defined map that may otherwise clearly explain this. However, it also seems apparent that amongst the verses and interpretations presented in this section, that in the face of natural disasters there are seen to be opportunities and it is these opportunities that are to be pursued, hence providing a purpose in the face of tragedy. Siddiqi (2004, p.3) in giving advice to a Muslim on the question of why evil and suffering occur, includes in his reply advice as to the attitude to take when it does, that one should reflect on whether one has violated Gods laws, whether it is a punishment or a test and to deliberate on how to put things right, to repent and ask for forgiveness and reform, or to consider how best to pass the test, depending on the circumstances.

Armstrong (2001, p.98) explains, 'the Qur'an emphasises that God eludes our human thoughts and that we can speak about Him only in signs and symbols. The whole mode of the Qur'anic discourse is symbolic'. If God is viewed in this way, then the need for a precise logical explanation for disasters diminishes, and it becomes more in alignment with the nature of the faith to reflecting on the symbols and signs that are experienced through the senses, that give a window of insight into the mind of God, whilst presenting an opportunity for an individual to spiritually evolve into a more God-conscious person, on the journey to greater *ihsan* and closer alignment with ones *fitra* so that one can better bring out ones qualities as *khalifa*, guardian of the earth.

From a more outward perspective, if the principles drawn out in this section are translated into a model for general guidance representing an Islamic approach to responding to climate change impacts, it seems clear that damage limitation, acute assistance and reducing greenhouse gas emissions would form an integral part of such a response. Thus the provision of assistance to those affected by flooding or hurricanes, for example, would appear to be an Islamic response and individual followers would be expected to engage with the challenges according to the extent that they are able.

With regard to the concept of collective punishment mentioned earlier, it is apparent that on the basis of individuals being affected by the actions of another's wrongdoing, that this could present a motivation for the believer in this principle to attempt to right the actions of those who are doing the wrong. Hence, a global effort to slow down or prevent further climate change perhaps through ensuring the implementation of effective and enforced international,

national and regional agreements, which includes engagement by all communities, whether or not they are large emitters of greenhouse gases, seems to be encouraged in the religion due its inclusion of this principle. This is also supported by a saying of Muhammad (*hadith*), 'who sees something detestable, let him change it with his hand, if he cannot, then with his tongue and even if he is able, then with his heart, and that is the weakest form of faith (Muslim, 1998, p.152).

Hierarchy of Needs: Prioritisation within Islam

In the sphere of Islamic Jurisprudence is a concept called *maslahah*, and the following part of this subsection will draw on the work of a particular author (Nyazee, 2000, pp.195-212) to help build a basic foundation of this concept, which will then be refined using further literature and then considered in the context of climate change.

The term *maslahah* is an instrument of *ijtihad*, explained earlier, and hence is an ingredient of the effort through which Islamic law can be derived. One aspect of *maslahah* in deriving any law, is to consider the derived law according to the purposes for which Islamic laws exist. If the purpose is taken to the highest level, five fundamental interests have been defined by Islamic Jurists, which provides a value system from which to derive legal rulings. These five fundamental interests come under the heading of *darurat*, or necessary interests, and are the primary purposes of Islamic law. In order of strength, they are, firstly, *din* (religion), second is *nafs* (life), third is *nasl* (progeny), fourth is *aql* (intellect) and fifth is *mal* (wealth).

Whilst this methodology is simplistic and incomplete in itself, taking Islamic law back in this way to its fundamentals does help provide some insight as to how laws and rulings are constructed, and hence lends useful information and food for discussion in the light of Islamic perspectives on new and contemporary issues such as climate change. Whilst this direction will be taken shortly, firstly, however here is one example which illustrates how such a value system has been used to derive legal rulings - although Islamic texts were not compiled by Muhammad during his lifetime, and hence there appeared to be no basis within the religion to ensure that they should be after he passed away, using the value system embedded within *darurat*, it was decided that texts should be compiled for the sake of preservation of the religion, which is the highest interest that is to be protected.

In general, in the event of a clash of interest, the stronger ruling is to prevail. In addition, public (or community) interest is to prevail over private interests or those of particular groups, and the definitive over the probable. Taking the first of the two rulings just mentioned, the conflict between the interests of individuals, nations and groups over those of the wider global community lies at the heart of complacency and political incompetence over action on climate change. For example, flying and the use of ones car, as and when one wishes, can often be considered to be a fundamental personal right, yet it is this thinking repeated across populations that presents an obstacle to dealing with climate change. Simultaneously, when George Bush explained the reason of his government for not wishing to ratify the Kyoto Protocol, he too was exhibiting a parallel line of thought, whereby he was placing the US interests, in terms of its economy, above the interests of the global community (BBC News, 2001).

Yet, the implications of the ruling bring forward a set of values that include wider interests into the decisions and behaviour of interest groups. Thus, to comply with this principle, the actions of individuals and nations would be expected to be congruent with the interests of the wider society and the global community. Thus, the slogan, 'Think Global, Act Local' is one that resonates with Islam, whether or not any given Muslim practises it.

If we consider the hierarchy of interests within the *darurat*, these can be examined from the point of view of a number of different permutations. Using, once again, George Bush's reason not to ratify the Kyoto Protocol, that it would hurt the US economy, the closest this matches any of the interests in the *darurat* is that of wealth which was being placed above life, for example. However, it must also be stated that economic growth may not match wealth as is being referred to in the *darurat*. This is because economic growth is a measure of the increase in economic activity of a nation (i.e. the increase in national income), yet any growth of national income may not necessarily distribute evenly, and could instead widen the gap between the rich and the poor, which itself raises further issues.

Future Generations

Amongst the *darurat*, or necessary interests, the third highest is *nasl* and this section will elaborate on what is meant by the term, and how it is relevant to climate change. Nyazee (2000, p.202) translates the word as 'progeny' and writes that it 'may be called the preservation of the family'; Kamali (1991, 271) translates it as 'lineage' and Llewellyn (2003, p.194) uses the word 'posterity', and explains that 'a society's posterity must be safeguarded through ensuring that its progeny are born and raised within secure family relationships'. He also holds the view that the five *darurat* clearly apply to the welfare of both present and future generations, explicitly in the case of progeny and implicitly with regard to religion, life, reason and property.'

Dien (2000, p.119) expresses concern at the failure of the contemporary Muslim world to give any significant value to the equity of generations and states that

any ethical system which does not equate future generations' interests with the interests of present generations cannot be considered just and fair. The question remains: can Islam return to the hearts of Muslims and re-educate people concerning these values? (Dien, 2000, p.119).

Thus, it can be concluded that the well-being and security of future generations is of fundamental value in Islam, and on the basis that greenhouse gas emissions at any given point in time, can affect the earth's climate and the lives of people who will be alive decades later, or will even affect whether they will have a chance to exist, here lies a very tight case for action on climate change to be of fundamental importance to the religion.

According to Llewellyn, the term *khilafah*, or guardianship, which was discussed earlier in this paper, is a role that itself cannot be fulfilled unless our care 'extends space and time to embrace all the species, individuals, and generations of God's creatures from today until the Day of Resurrection, in the world of the living and the world of the return' (Llewellyn, 2003, p.191).

Precautionary Principle

Also of relevance to discussions on *darurat*, albeit, indirectly is the precautionary principle. Whilst *darurat* sets out a hierarchy of values associated with interests, particular actions do not always have predictable effects and hence whether a particular interest is protected or undermined may not be certain. This is of significance to climate change, whereby self-interest, whether it be in terms of growth in national income, taking flights, using one's car, oil company profit, are inherent to the debate, yet in terms of reducing greenhouse gas emissions, action now is associated with results in the future which can have an element of uncertainty. So the question that arises is it, how does Islam reconcile this within discussions on climate change.

Firstly, a number of writers have articulated a precautionary principle within Islam. For instance, Siddiq (2003, p.454) points out a number of principles derived from the Qur'an and sayings of Muhammad, which govern Islamic environmental ethics, one of which is that, 'Prevention of damage takes preference over the achievement of interests or fulfilment of needs'; and Bagader et al (1994) point out that, 'Islamic law maintains that "Damage shall be eliminated," and "Damage shall be removed to the extent that is possible" and that "the averting of harm takes precedence over the acquisition of benefits."

Hence, herein lies a clear recognition of acting out of precaution, even in the context of benefits consequently not being acquired. However, referring back to the initial point made in this section, aversion of harm is not always definitive. Llewellyn (2003, p.197) rightly points out thus that the principle of precaution in Islam 'could in some cases be seen to conflict with another principle in Islamic law, namely that priority is given to actual or known interests'. He adds that:

certain costs and benefits are to be given greater weight than uncertain costs and benefits. Both of these principals are valid, but the latter could be used to approve a project of which the economic benefits are known, while scientific information regarding harmful impacts to human health and ecosystems is incomplete or inconclusive?' (Llewellyn, 2003, p.197).

This takes us back to the argument put forward by the US government in which the economy took precedence. Adopting this example, and considering in general the issue of uncertainty within climate change, how does Islamic thought view the idea that it would be appropriate not to act on climate change, in favour of a perceived benefit such as economic growth. It would appear that the debate would parallel the existing debate taking place within a secular paradigm. Within that debate it is apparent that scientific opinion has become increasingly certain over the years and more recently there has been the highlighting of a tipping point, which if reached would accelerate the process of global warming, even if a successful large scale global reduction in anthropogenic greenhouse gas emissions occurred following the time at which such a point is reached. With this ongoing increase in certainty, the basis to take action gains more weight Islamically also.

Population Control

On the basis firstly that greenhouse gas emissions need to decrease, and secondly that emissions must decrease from human sources such as domestic energy use, transport, food miles, production for consumers, amongst other sources, there is a strong case for controlling population as a means to control and limit emissions. This section will explore the legitimacy of such an option as a component in reducing greenhouse gas emissions. Whilst it is acknowledged that different populations can emit vastly different quantities of greenhouse gases per person, which itself may change significantly over the next few years, the question clearly arises as to whose people are being asked to be reduced in number. This question will not be addressed in this paper, but simply whether population control and contraception is congruent with Islam in principle, in the context of reducing greenhouse gas emissions.

Culturally, amongst Muslims, overpopulation is rarely an issue of concern, the response to the question, if it is raised, drawing on a Qur'anic verse that God will provide for all creatures on earth (Foltz, 2003, p.255). However, amongst Islamic scholars, whilst there has been apprehension at the possible legitimacy of population control, it is nonetheless increasingly being accepted and endorsed (Foltz, 2003, p.227). Also, a highly respected Islamic writer of the past, Al-Ghazali (see Foltz, 2003, p.256), has said that "the fear of great hardship as a result of having too many children...is also not forbidden, since freedom from hardship is an

aid to religious devotion". Whilst as Llewellyn (2003, p.228) points out that the Prophet Muhammad encouraged his followers to have large numbers of children, Muhammad is also quoted to have said that "The most gruelling trial...is to have plenty of children with no adequate means" and had given permission for *coitus interruptus* to be used, which scholars have extended to mean that, other newer forms of contraception are also permissible (Jabbara and Jabbara, 2003, p.426). Whilst, this extension may not be taken to mean permission to use sterilisation amongst all scholars, the founder of the Family Planning Society of Kenya believes otherwise (Foltz, 2003, p.256). Thus, whilst the boundaries may differ according to who is asked of their opinion, it can nonetheless be concluded that many forms of contraception are permissible in Islam, and certainly that the prevention of hardship is an acceptable justification for controlling population.

With respect to climate change, it seems that birth control would thus be permissible on the basis of two possible scenarios. Firstly, if the impact of climate change brings about conditions of hardship, and secondly if the need to reduce greenhouse gas emissions leads to pressure over available safe energy resources such that hardship is experienced. In both instances, however, there would be additional factors entering into the equation such as finances in particular – for instance greater financial security can provide opportunities out of hardship caused by environmental change. Also, if a situation is reached that carbon credits could be purchased from others, then this would also favour the financially more secure. Hence, the level of hardship is individual, as well as being dependant on the environment.

However, what about a top down, government approach to controlling population, which would allow more energy to be available to each person, across the board? Would this be acceptable in Islam? Whilst the Islamic Republic of Iran has issued a policy of birthrate reduction which it attempts to justify as Islamic (Foltz, 2003, p.256), the coercive route is not considered Islamically acceptable by at least two writers on Islam (Jabbara & Jabbara, 2003, p.427). However, as Foltz (2003, p.256-257) points out, the application of rational intelligence (*aqil*) in 'recognising a crisis and finding ways to avert impending disaster', would not be un-Islamic.

The specific question as to whether top down population control is permissible in Islam is left open in this paper, and simultaneously a challenge is offered to scholars and other experts to engage with this issue together, drawing knowledge on Islamic law, knowledge of the world and rational intelligence, so that the clarity that is necessary in the light of the scenario we face, can come soon.

3. ECONOMICS IN AN ERA OF CLIMATE CHANGE

The Unnatural Dimension of Money

Whilst human activities must change to deal effectively with climate change, the nature and intensity of these activities are themselves influenced by the economic structures that grip them. Within that grip are embedded values which guide decisions, whether or not these values are questioned, or even acknowledged. Whilst the importance of economics in confronting environmental issues is being vocalised only more recently within the mainstream environmental movement, there have been a number of outspoken critics on the fringe for some time. According to at least one Muslim environmental writer, environmental management is 'first and foremost an economic issue' (Dutton, 1998, p.73). Another Muslim writer concludes that if the banking system remains in its current form, 'the earth will soon be reduced to an empty desert' (Khalid, 1998, p.29).

This section will firstly analyse the economic model which is dominant globally, and will then explore how it might be influencing the nature of human activities and the consequent carbon emissions that follow. This model will then be contrasted with the fundamentals contained within an Islamic economic model, which will also broaden the debate to discuss how the tool of economics might be used as an ally to effectively direct human behaviour along a path of confronting climate change.

Three key components are identified here, which underpin the dominant economic model, and that are of fundamental significance to discussions on climate change. These are fractional reserve banking, compound interest, and the process of discounting.

Fractional Reserve Banking

El Diwany (2003, Chapter 2) provides an overview of the sequence of events leading to the current dominant system of banking in England, called fractional reserve banking. This section will draw on his work.

In the mid 17C, the early banks operated as safe keeping houses, in which customers would deposit their precious metals comprising mostly of gold coins for a fee. The bank would issue the customers with a receipt, which they could, when they wished, use to reclaim the equivalent value of precious metal on return.

However, an opportunity became apparent, which consequently opened up a whole new system of money making, which made it legal for banks to lend out money that wasn't their own and without permission from the owner, and later to literally manufacture money, which they could also then lend. In both instances they would charge people for borrowing it.

This opportunity arose out of two factors. Firstly, most of the gold deposited in the banks remained idle; and secondly receipts became increasingly used as a form of payment for goods and services, further reinforcing the first factor. With such a high proportion of the deposited gold remaining unused, a new business opportunity opened up that would have been hard to resist. This gold could be lent out and the banks could profit by charging interest.

It was necessary however, for the banks to hold onto a certain proportion of gold, in order to ensure that there was a sufficient amount available to cope with any unforeseen period in which there was a high rate of reclaim. This proportion became known as the 'reserve ratio'

and at 20%, a typical value, banks were consequently able to lend out and charge interest on £400 for every £500 that customers deposited.

A further development occurred out of the fact that receipts were accepted readily as payment for goods and services. There was thus no need now for the banks to lend out the gold. All they had to do was lend out receipts.

However, as banks lent out money, the interest they charged meant that the amount customers would have to pay back would grow, and whilst the quantity of money flowing within the system remained the same, the more it grew the harder it was to pay back. In order to keep the system continuing along the same path, it became necessary to put more money into it – for the banks, printing new receipts was easy and cheap, and money creation thus came into fruition. The granting of further loans was then used to put more money into the system, which helped people pay off their existing loans. With further loans to pay off existing ones, more debt ensued, and this carried forward the cycle of further money creation and additional loans. Simultaneously as more money entered the system, the existing money would decrease in value and inflation was the outcome.

Thus, the function of early banks as safe keeping houses for precious metals gradually evolved. Banks were later able to lend out money that was not theirs, as well as money that they created, to customers who had to pay their loans back with additional interest. Banks, thus, had a license to create money simply by printing it; people had to earn it through hard work, or borrow it from the banks with interest attached.

The form that the interest takes in this system is called compound interest, and this will be described in the following section.

Compound Interest, Riba and Usury

This section describes compound interest and its relationship with usury, a phenomenon that is intensely forbidden in Islam.

‘Compound interest’, unlike ‘simple interest’, means that the interest calculated each successive year, is compounded into the original value. Hence, as an example, after one year, the amount payable on a £100 loan with a 10% per annum interest rate, would be £110. After two years, it would be 10% of £110, rather than 10% of £100, and would come to £121 and so on (El Diwany, 2003, p.8-9).

As has been pointed out by Soddy, if Christ had invested £1 into the current economic system, the effect of compound interest would enable him to reclaim £1, 000 billion, billion, billion, billion, in the 20th century. The end-result would have to be either debt cancellation, revolution or war (Bruges, 2000, pp.56-57).

As explained by Ramadan (2001, p.150), in Arabic there is a term known as *riba*, which is ‘derived from the verb “*raba*” which means “to increase”, or “to grow”, and whilst there is some divergence in views, the vast majority of jurists have understood it to mean ‘interest rate’ or ‘usury’. Usury itself ‘is traditionally defined to mean “Any unjustified increment between the value of the good given and the countervalue of the goods received”’ (Vadillo, cited in Dutton, 1999, p.62). There are a number of methodologies for defining *riba* more precisely and El Diwany (2003, p.136) describes one which identifies it through the existence of one, or both, of two defining elements: He explains that one element can be called the *usury of waiting*, or *riba al-nasia*, and occurs through the exchange of an equal quantity or quality of the same item but non-simultaneously. The second element can be called the

usury of surplus, or *riba al-fadl*, and occurs when the same item is exchanged, in this instance simultaneously, but in an unequal quantity or quality.

Whilst there are numerous verses from classical Islamic texts, which have led to a difference of opinion as to whether or not a particular exchange falls into the classification of *riba*, it is however agreed that the modern interest banking loan, whose historical development was described earlier, is one kind of transaction which clearly falls into the *riba* bracket. This is because it combines both defining elements of *riba*, in that both a delay and surplus are a part of the transaction (El Diwany 2003, p.136; p.140).

Consequently an interest bearing loan which is embedded in the modern banking system runs against Islamic principles, and the extent to which it is prohibited is highlighted by the Qur'an in several verses. For instance:

Those who devour usury will not stand except as stand one whom the Evil One by his touch hath driven to madness. That is because they say: "Trade is like usury," but God hath permitted trade and forbidden usury (Qur'an, 2:275).

O ye who believe! Fear God, and give up what remains of your demand for usury, if ye are indeed believers. If ye do it not, take notice of war from God and His Messenger: But if ye turn back, ye shall have your capital sums: Deal not unjustly, and ye shall not be dealt with unjustly (Qur'an 2:278-279).

O ye who believe! Devour not usury, doubled and multiplied; but fear God; that ye may (really) prosper (Qur'an 3:130).

The next section will examine how the modern banking system might be affecting the nature and intensity of human activities, and how this might be increasing greenhouse gas emissions.

The Fruits of Modern Banking

If as stated earlier, the continuation of the current system is dependant on banks finding customers for additional loans, the failure to do so would result in the system collapsing. Given that an end to the system would force banks out of their current privileged position, this is a scenario that they would naturally wish to avoid. Hence, there would inevitably be pressure for them to continue to seek new customers to take on their loans.

There are two issues that arise out of this. The first is that as more loans enter into the system, more economic activity is encouraged, and this activity is further increased by the year-on-year interest that is compounded into the loan. The second is related to the pressure pushing banks to find projects and customers for these loans. Both these issues are fundamental to this discussion on climate change and Islam.

Looking at the first issue of increasing economic activity, or economic growth, an increase in economic activity is not in itself harmful. It would depend on the quality of the underlying activities that were fuelled by the economic exchanges associated with them. However, as each aspect of underlying activity is likely to directly or indirectly demand energy from fossil fuels, even the manufacturing of wind turbines or the recycling of materials, a consistent growth in economic activity is thus likely to be *inconsistent* with effectively dealing with climate change. Effectively dealing with climate change in the long run, would necessitate not simply more and more 'better' projects, but within the current framework that we operate, it would require constraints on the overall level of project activity taking place at any given time. This could take place either by pro-active constraints within the existing system or through an

absence of factors that attract more projects which have little or no basis in terms of societal or environmental need. The widespread marketing of interest bearing loans is clearly one such factor whose absence would provide such a constraint.

With regards to the second question raised, whilst pressure to quickly find viable loan recipients might mean that customers would be those people who are in a position to pay back their loans, in the race for securing contracts it is inevitable that the quality of use to which the loan is put to is likely to be considered less of a priority, either in terms of human or environmental impact. High energy demanding projects fuelled by fossil fuels would not be an exception. Also, if projects are not forthcoming, there will be pressure to manipulate circumstances to create them. These points are clearly articulated by Dutton (1999, p.69) who writes, 'bankers are thus concerned primarily with the monetary return on their loans, which means that they are concerned with those projects which will, or are likely to, bring in both the largest and the quickest return', and then adds that 'massive amounts of money need massive projects, and, if they do not exist, they have to be created (Dutton, 1999, p.70). He then concludes thus that 'ecological balance is a luxury that nobody can afford' (Dutton, 1999, p.71). Herein lies an answer to the cause of ever-increasing advertising to engineer more and more wants, perhaps the meeting point between economics and the faith which more people are born into: the faith of consumerism.

Hence, Islamic economics, in its severe prohibition of *riba* or usury appears, in this instance, to present a profound and timely challenge to the dominant system, which is antagonistic to the direction humanity needs to take in order to effectively deal with climate change. It is also clear given the environmental impacts that are taking place, and particularly with the widespread impact of climate change which is affecting people independently of the kind of bank account they possess, that we are living in a time which is perhaps being referred to by Muhammad, that even those who are not directly involved in taking usury will be "covered by its dust" (Dutton, 2003, p.337).

Later on some of the qualities that form part of an Islamic economic model will be explored in more depth. Firstly, however, there is a third component underpinning the dominant model, and this is called discounting.

Discounting: When We Care Less about the Future

Tightly related to the values embodying interest, is an economic process which whilst based on a set of values that opposes the notion of sustainability, may not only help guide political decisions, but can be the fundamental method of determining them. This notion is called 'discounting' and it reduces the value given to the interest of people who are distant to us, most commonly being applied to decisions made concerning people in the future (Jacobs, 1991, p.69). One way in which this is related to interest is in its justification that, 'if we invested a given sum of money today it would earn interest, so that in fifty years time it would be much larger. Discounting then simply reduces this increased future wealth back to its present value' (Jacobs, 1991, p.81). The end result is that money available in the future is worth less than the same quantity of money available now. An economic comparison can then be made with future costs present-valued, and compared with costs that might otherwise be incurred now, to decide which is more economically advantageous.

El Diwany (2003, p.20) highlights an example of this process of 'present-valuing' money, which is directly relevant to our current discussion. He describes a cost-benefit analysis carried out by the International Institute for Economics, in which the costs due to the impact of climate change over the years were present-valued and compared to the amount of current investment aimed at eliminating them through preventative action. When a discount rate of 3% was entered into the calculation, meaning that future values were discounted by

3% each year going back in time, then it was uneconomical to take preventative action. However, at the lower discount rate of 1.5%, preventative action was economically justified.

In other words, the more the future was discounted the more it made economic sense for climate change impacts to take place, and to deal with those impacts as they occurred, despite the inevitability of irreversible damage to human life and ecosystems. Given that outside of this calculation many people would likely object to such a loss, it seems clear that by removing the debate from the precise, yet narrow realm of economic discounting, a whole new set of values arise that may affect the choice made. Whilst in the current example, a low discount rate favoured preventative action, this may not always be the case even at a very low level of discounting and that it 'might therefore seem that there is a problem with discounting itself, not just the level of discount rate to be employed therein' (El Diwany, 2003, p.21).

Thus, the combination of fractional reserve banking, compound interest and discounting which whilst on the one hand is running discretely in the background to mainstream environmental discourse, is on the other nonetheless fundamental in setting the agenda for the political and social paradigm which dominates the world today. Without addressing these more silent factors, climate change will prove a stubborn process for to resolve in the longer run.

Basic Principles of Islamic Economics

Islamic economics is a large topic and this paper will simply define some of its key characteristics that will help also to differentiate it from the dominant model described. Some ideas as to how these principles may help to restrain greenhouse gas emissions will then be explored.

Whilst economic activity is encouraged in Islam, there are nonetheless aspects of the teachings that constrain it and would appear to discourage economic growth if that growth lacks a constructive purpose. Ramadan (2001, p.145-155) outlines basic principles of Islamic economics and stresses that any individual wishing to pursue an economic project would have a moral responsibility towards society as a whole, whilst society would also have a responsibility to encourage the potential for that individual to gain a profit from their efforts. Indeed, wealth is one of the *darurat*, or five fundamental interests, discussed earlier in the paper, and one can thus conclude that Islam encourages economic activity.

Ramadan, however, draws to attention the following point:

The limits should be ethical. This is because man always forgets moderation and the good when faced with a larger chance of gain. It is an injustice not to trust the qualities of man, as it is foolishness to turn a blind eye to his weakness and folly (Ramadan, 2001, p.148-149).

Consequently, in the absence of an individual fulfilling their responsibility, it would fall to the governing powers to intervene (Ramadan, 2001, p.148). Thus, this brief moral outline identifies values in Islamic economics, which whilst encouraging business and entrepreneurship, necessitate that consequent projects are also in the interest of the wider community. Whilst the values will not be explored further here, in the context of the hierarchy of needs discussed earlier, Islam also provides a reference point for what these interests actually are, and included within them are the interests of living beings, both human and non-human, as well as the interest of life in generations to come (Llewellyn, 2003, p.194). As climate change would potentially impact both, it seems appropriate to also conclude that Islam might permit state intervention to constrain projects that are fossil-fuel intensive.

Alternative Investments

Having established that modern banking is problematic to an Islamic economic system, investment principles in Islamic banking itself will now be described.

The following outline of a model of Islamic banking will draw on the work of El Diwany (2003, Chapter 7). Essentially, two kinds of accounts would be available, a current account, and an investment account. A current account would have a 100% reserve ratio guaranteeing that every customer could withdraw all their money on any day. This service would however require a service charge which would cover administration costs. In opening the second type, an investment account, the bank would act as an investment advisor for which it would charge a fee, and for such an account a 100% return could not be guaranteed. However, the customer would invest on a profit-sharing basis. Thus, just as profits would be shared, so too would any losses. As repayment of the loan is tied to the success of the project as opposed to a fixed interest rate, a growing level of debt is prevented and loan repayment is more easily achieved. Diwany (2003, p.180) adds that unlike in the conventional system, loans would less likely be granted on the basis of the borrower having a cushion of collateral, and that this would consequently broaden financial opportunities to those beyond the rich. It would appear that such a setup would thus encourage the initiation of small-scale business projects, and here thus is a system that appears more congruent with smaller scale localised production. This could mean a lessening of the distance that goods are transported and hence a lowering of greenhouse gas emissions in the business sector.

There is one downside to both these accounts and that is that they are less favourable to depositors. The *current account* charges for depositing, and the *investment account* carries with it the risk of a loss. In the face of competition within the current system which offers a fixed-rate of interest on investments, Islamic banks operating in the way described would find it hard to survive. On the other hand, without the burden of compound interest on the borrower, such banks would offer an attractive opportunity for new businesses. Yet, if customers were not willing to deposit money, then new businesses would be unable to borrow any. Consequently, the means for survival of Islamic banks in the current climate is the letting go of self-interest amongst potential depositors, in exchange for the benefit of the greater shared good.

The Medium of Exchange

In Islamic economics, the unit of transaction that takes the form of money would have real value. Thus, paper receipts and pixels on a screen, which correspond to no real wealth, would consequently have no more buying power than what they were worth as objects in the eyes of the people. Any medium could be used and would be left to the people who would be free to engage in transactions using whatever medium they chose. The State simply ensures compliance with standards (Khalid & Vadillo, 1999, p.75; El Diwany, 2003, p. 184). El Diwany (2003, p.184) makes the additional point that 'history shows that people will tend to choose gold and silver as money'. Nonetheless, whatever form of currency people do gravitate to using, a fundamental distinction between such a system and the current one, is that in the system just described money would remain connected to the real wealth of the material world, for it is only the real wealth in the material world that would be a candidate for money.

Islamic Economics: Concluding Remarks

With its absence of usury and presence of profit-sharing transactions, Islamic economics possesses internal constraints that help prevent borrowers from running into unpayable debt, whilst also encouraging wealth to be distributed more evenly. Increasing economic activity ceases to be the primary objective, and pressure to find more and bigger loan recipients diminishes. With natural constraints on economic activity, less pressure to find borrowers at a faster rate, and less pressure to pay off debt built on compound interest, the use of fossil fuels to fuel the processes underlying the accelerating economic activity could be dramatically reduced. Simultaneously, currency would be tied to real material wealth, thus helping to prevent the plundering of resources to depletion. Whether such a radical reformation comes under the label of an Islamic, green or a sustainable economics is perhaps of lesser importance than the fact that it appears to be a serious contender in a basket of solutions to tackle climate change.

4. DISCUSSION: PATHS TO ENGAGEMENT

The Call to Environmental Justice

This section attempts to formulate a set of responses that extend from Islamic teachings in the context of global climate change, and that would therefore be of practical relevance to Muslims. The responses described draw on themes addressed in earlier chapters. They are contextualised to be of particular value to Muslims living in the UK.

Al-'adl which means justice is a fundamental principle in Islam and its emphasis is clearly indicated in the following *Qur'anic* verse:

O ye who believe! Stand out firmly for justice, as witnesses to God, even as against yourselves, or your parents, or your kin, and whether it be (against) rich or poor: for God can best protect both. Follow not the lusts (of your hearts), lest ye swerve, and if ye distort (justice) or decline to do justice, verily God is well-acquainted with all that ye do. Qur'an (5:135).

As described earlier, a rising level of CO₂ in the atmosphere is causing impacts that are not necessarily affecting those who have, or are emitting the greatest proportions of these gases. The actions of those who are using the most energy through fossil fuels is harming those that are using less. This injustice extends both within and between generations, across geographical boundaries and also across species.

From an Islamic perspective, climate change can be viewed as a symptom. Ultimately, it could be said that much of humanity has deviated from its natural state, or state of *fitra*, towards the endless pursuit of superficial attractions. Associated with this process is an economic injustice, which is placing synthesised wealth decoupled from the material world into the hands of a few, whilst simultaneously causing the future to be 'discounted'. An internal imbalance or altering of the *mizan* at an individual and collective level including within the collective economic sphere, has taken root, and this imbalance is now being mirrored in the wider environment. The increased proportion of greenhouse gases and the changing climate that follows is one of its unpleasant fruits. The need for greenhouse gases to be reduced is urgent, yet global emissions continue to rise.

Levels of Response: Personal, Community and Economic

With this understanding of the cause, the symptoms and the urgency, it appears that from an Islamic perspective the problem of climate change would need to be tackled from a number of different levels. It would require a personal response that integrates the spiritual and the rational, a response at the community level, and at the economic one. Although this compartmentalisation is somewhat artificial as one level would influence the other two, this division will nonetheless still be used here as a convenient starting point for this discussion.

On a personal level, spiritual practice and reflection on the natural world would assist in nurturing the orientation of an individual such that their outward actions begin to embody more unifying values. The expression of *Ihsan*, of excellence, would become a more common occurrence and action would have a tendency to be more in harmony with the wider environment. As an individual's inner state moved closer to the pure state of *fitra*, their desire to consume beyond their needs would lessen, and their lives would simplify. They would be less likely to be an automatic consumer who moved from wanting one product or service to another, in search of their next fix. As they consumed fewer products and services, their personal carbon emissions would tend to decrease. Simultaneously, as they lived their life with greater sensitivity towards the needs of others, cooperation and sharing would become

more commonplace, thus reducing collective consumption and the energy needed to produce the products that attempt to fulfil it. The more that energy use is reduced, the possibility of low carbon sources meeting the demand that is left becomes more likely.

At the same time, on a personal level carbon emissions could be reduced even more quickly when spirituality is complemented with rational intelligence or *'aql*. Indeed, the spiritual response just mentioned could itself begin out of a rational awareness of the urgency we face. Spirituality might also allow a person to be more comfortable with following some of the choices uncovered through a rational understanding of the facts.

A rational response could include development of knowledge, for instance, of low carbon energy sources, energy efficiency, the arguments around nuclear power, the psychological impact of intense advertising, corporate behaviour, local, national and international politics, social movements, and so on. The application of this kind of knowledge would likely overlap with some of the activism prominent within the mainstream environmental movement. Here, thus lies a potential meeting point for engagement between people, regardless of whether or not they are Muslim, and provides another means for a response at the community level.

As Oius (no date, pp.5-6) articulates,

Muslims must condemn and act against multinational corporations and regimes destroying nature in addition to the cynical economic system. One way of undertaking such action would perhaps be to join the emerging global movements and networks demanding economic and environmental justice, as long as these movements act according to Islamic and democratic principles.

In the UK, at least two national movements are developing with a focus on campaigning on climate change, and numerous environmental groups are actively engaging with this issue. This setting presents an opportunity for Muslims to work with others, with the aim of sharing expertise, knowledge and effort, in the ultimate hope of being collectively more effective. In addition, a small number Islamic environmental groups have formed, some of which are reaching out. There is a verse in the Qur'an that places an emphasis on getting to know those in other groups:

O mankind! We created you from a single (pair) of a male and a female, and made you into nations and tribes, that ye may know each other (not that ye may despise each other) *Qur'an* (49:13).

With the current social and political climate being one in which the relationship between Muslims and the West are being tested, the need for people to know one another is urgent. Climate change activism provides one avenue for the enlivening of this value that the *Qur'an* articulates, thus facilitating the possibility of a healthier co-existence. This notion of co-existence is explored by Ramadan (2005) at length, and fundamental to his viewpoint is an idea, that closely resonates with the argument being put forward here. Successful co-existence 'would not be *peace in separation* but *living together in participation*' (Ramadan, 2005, p.219).

The third level of response is at the economic level. With society depending on it for its essential day-to-day affairs, the current banking system whilst unsustainable is a seemingly stubborn entity to replace. Yet, the reasoning laid out in the previous chapter illustrates that climate change may be impossible to solve in the long-term, whilst there is a dominant economic system in which money is manufactured and loaned with interest compounded into it. An effort to undermine the existing system whilst building an alternative one rooted in a valuation of the real world could begin with developing small community projects linking people who wish to transact with one another under an ethical framework which, rather than

being disconnected from the wealth of the natural world upon which we depend, is submissive to it.

5. CONCLUSION

The process of climate change is taking place, and global CO₂ emissions are climbing at an increasing rate. Islam encapsulates an environmental ethic that helps outward behaviour to be more aligned with conservation principles. It also encourages spiritual development, which is believed to help nurture an inner state that eases the actualisation of these values. This has implications in reducing energy use and hence offers an ethic that is congruent with the kind of changes associated with climate change solutions.

As many Muslims in the UK are yet to awaken to the need for urgent action on climate change, and yet have lifestyles entrenched in the consumer culture, there is a need for a spiritual revival and effort for greater dialogue on this contemporary issue within Muslim communities.

The dominant economic system is contributing to greater energy demands. The principles of Islamic economics resonate with the notion of economic justice and also has green and sustainable values that could be considered within a parcel of solutions for dealing with climate change.

There is a danger that a tipping point will be reached and climate change will become out of control. Islam views humans as guardians of the earth, and whether or not the human race can succeed in preventing such a scenario could be seen as an ultimate test as to whether humankind will finally establish itself in this role.

Finally, this paper should be viewed as providing constructive ideas rooted in a basic understanding of Islamic principles at a time in which the world is warming due to human activities. The urgency of this scenario is recognised in the scope of this paper, which it is hoped could act as a catalyst to further dialogue within Muslim communities, and ultimately stimulate participation in activism, whilst encouraging a deeper understanding and appreciation between fellow Muslims and between Muslims and their neighbours.

BIBLIOGRAPHY

- Al-Ghazali, A. (1998) 'The Proper Conduct of Marriage in Islam (Adab an-Mikah)', trans. Muhtar Holland, Hollywood, FL, al-Baz Publishing, in: Foltz, R., Denny, F., Baharuddin, A. (2003) *Islam and Ecology: A Bestowed Trust*, Cambridge, Massachusetts: Harvard University Press
- Armstrong, K. (2001) *Muhammad: A Biography of the Prophet*, London: The Orion Publishing Group Ltd.
- Azzam A. (1993) *The Eternal Message of Muhammad*, Cambridge: The Islamic Texts Society
- Bagader, A., El-Sabbagh, A., Al-Glayand, M., Izzi-Deen, M., Llewellyn, O. "The Mandate of the Governing Authorities" *Environmental Protection in Islam 2nd ed.* 1994. <<http://www.islamset.com/env>> (23 Aug. 2006).
- BBC News, "US Urged not to Block Kyoto" 2001. <<http://news.bbc.co.uk/2/hi/americas/1284530.stm>> (22 Aug. 2006).
- Chishti, S. (2003) 'Fitra: An Islamic Model for Humans and the Environment', in: Foltz, R., Denny, F., Baharuddin, A. (ed) *Islam and Ecology: A Bestowed Trust*, Cambridge, Massachusetts: Harvard University Press, pp. 67-82.
- Bruges, J. (2000) 'The Little Earth Book', Bristol: Alastair Sawday Publishing
- Daly, H. (1971) 'Introductions to Essays towards a Steady-State Economy', in: Daly, H. and Townsend, K. (ed) *Valuing the Earth*, Massachusetts: The MIT Press, pp11-47
- Dutton, Y. (1998) 'Islam and the Environment: A Framework for Enquiry' in: Haleem, H. (ed) *Islam and the Environment*, London: Ta-Ha Publishers Ltd., pp. 56-74.
- El Diwany, T. (2003) *The Problem with Interest*, London, Kreatoc Ltd.
- Foltz, R. (2003) 'Islamic Environmentalism: A Matter of Interpretation' in: Foltz, R., Denny, F., Baharuddin, A. (ed) *Islam and Ecology: A Bestowed Trust*, Cambridge, Massachusetts: Harvard University Press, pp. 249-279.
- GCI, "Contraction and Convergence: A Global Solution to a Global Problem". No Date. <<http://www.gci.org.uk/contconv/cc.html>> (24 May 2006).
- GCI, "Contraction & Convergence". 2004. <<http://www.gci.org.uk/briefings/ICE.pdf>> (24 May 2006).
- Hasan, U. (2006) Telephone Conversation with Imam Usama Hasan (22 Aug 2006).
- Hillman, M. (2004) *How We Can Save the Planet*, London: Penguin Books Ltd.
- Houghton, J. (2004) *Global warming: The Complete Briefing*, Cambridge, University Press.
- Hudson, M. (1980) 'Islam and Political Development' in: Esposito, J. (ed) *Islam and Development: Religion and Sociopolitical Change*, New York: Syracuse University Press, pp.1-24.

Islam and Climate Change: Perspectives & Engagement

IPCC (2001a) *Climate Change 2001: The Scientific Basis*, Cambridge: University Press.

IPCC (2001b) *Climate Change 2001: Impacts, Adaptation and Vulnerability*, Cambridge: University Press.

ISSC (2005) International Symposium on the Stabilisation of Greenhouse Gas Concentrations, *Avoiding Dangerous Climate Change*, Feb. 1-3 2005. Exeter: Met Office.

Izzi Dien, M. (2000) *The Environmental Dimensions of Islam*, Cambridge: The Lutterworth Press.

Jacobs, M. (1991) *The Green Economy*, London: Pluto Press.

Kamali, M. (1991) *Principles of Islamic Jurisprudence*, Cambridge: The Islamic Texts Society.

Khalid, F. (1998) 'Islam, Ecology and the World Order', in: Haleem, H. (ed) *Islam and the Environment*, London: Ta-Ha Publishers Ltd. pp.16-31.

Khalid, F. & Vadillo, U. (1992) 'Trade and Commerce in Islam', in: Khalid, F. and O'Brien, J. (1992) *Islam and Ecology*, London: WWF, pp 69-95.

Khalid, F. (2002) 'Islam and the Environment', in: Timmerman, P. (ed) *Encyclopedia of Global Environmental Change*, Chichester: John Wiley & Sons Ltd, pp.332-339.

Kirby, A. "West warned on Climate Refugees". *BBC News Sci/Tech*. 2000.
<<http://news.bbc.co.uk/2/hi/science/nature/613075.stm>> (29 Aug. 2006)

Kutty, A. "Tsunamis: Allah's Punishment or Signs?" *Islamonline: Fatwa Bank*. 2005.
<http://www.islamonline.net/servlet/Satellite?pagename=IslamOnline-English-Ask_Scholar/FatwaE/FatwaE&cid=1119503549438> (10 Aug. 2006).

Lynas, M. (2004) *High Tide: News from a Warming World*, London: Harper Collins Publishers.

Lings, M. (1991) *Muhammad: His Life based on the Earliest Sources*, Cambridge: The Islamic Texts Society.

Llewellyn, O. (2003) 'The Basis for a Discipline of Islamic Environmental Law' in: Foltz, R., Denny, F., Baharuddin, A. (ed) *Islam and Ecology: A Bestowed Trust*, Cambridge, Massachusetts: Harvard University Press, pp. 185-247.

Majeed, A. (2003) 'Islam in Malaysia's Planning and Development Doctrine' in: Foltz, R., Denny, F., Baharuddin, A. (ed) *Islam and Ecology: A Bestowed Trust*, Cambridge, Massachusetts: Harvard University Press, pp.463-465.

Met office (2005) *Climate Change and the Greenhouse Effect*, Exeter: The Met Office.

Monbiot, G. "How Much Energy do We Have?" 2005.
<<http://www.monbiot.com/archives/2005/11/29/how-much-energy-do-we-have>> (29 Aug. 2006)

Muslim (1998) 'Hadith' in: An-Nawawi, A., *Riyadh Us Saliheen: Gardens of the Righteous: Vol. 1*, Karachi: Darul-Ishaat

Nasr, S. (1998) 'Sacred Science and the Environmental Crisis: An Islamic Perspective' in: Haleem, H. (ed) *Islam and the Environment*, London: Ta-Ha Publishers Ltd. pp.118-137.

Nasr, S. (2003) 'Islam, the Contemporary Islamic World, and the Environmental Crisis' in: Foltz, R., Denny, F., Baharuddin, A. (ed) *Islam and Ecology: A Bestowed Trust*, Cambridge, Massachusetts: Harvard University Press, pp 85-105

Nyazee, I. (2000) *Islamic Jurisprudence*, Islamabad: Islamic Research Institute Press.

Ouis, S. "Global Environmental Relations: An Islamic Perspective" No Date. <<http://www.aml.org.uk/journal/4.1/SPO%20-%20Global%20Environment%20Relations.pdf#search=%22soumaya%20pernilla%22>> (8 Aug. 2006).

Parvaiz, M. (2003) 'Scientific Innovation and al-Mizan' in: Foltz, R., Denny, F., Baharuddin, A. (ed) *Islam and Ecology: A Bestowed Trust*, Cambridge, Massachusetts: Harvard University Press, pp. 393-401

Qur'an, The translations used in this paper are from Abdullah Yusuf Ali (2003), *The Meaning of the Holy Qur'an*, Maryland: Amana Publications.

Ramadan, T. (2001) *Islam, the West and the Challenges of Modernity*, Leicester: The Islamic Foundation.

Ramadan, T. "Social Organisation: The Principle of Justice". 2004. <http://www.tariqramadan.com/imprimer.php3?id_article=7> (4 July 2006).

Ramadan, T. (2005) *To be a European Muslim*, Leicester: The Islamic Foundation.

Ramadan, T. "The call to Jihad". 2004. <http://www.tariqramadan.com/imprimer.php3?id_article=65> (4 July 2006).

Siddiqi, M. "Why does Allah allow Suffering and Evil in the World?". *IslamOnline: Ask the Scholar?* 2004. <http://www.islamonline.net/servlet/Satellite?cid=1119503544478&pagename=IslamOnline-English-Ask_Scholar/FatwaE/FatwaEAskTheScholar> (10 Aug. 2006).

Thomas *et al*, "*Extinction Risk from Climate Change*". 2004. <<http://www.nature.com/nature/journal/v427/n6970/abs/nature02121.html#a3>> (9 March 2007).

Webster, P., Holland, G., Curry, J., Chang H. (2005) 'Changes in Tropical Cyclone Number, Duration, and Intensity in a Warming Environment', *Science*, 309: 1844 – 1846.

WHO "Climate Change: Conclusions and Recommendations for Action". *Global Environmental Change*. 2006. <<http://www.who.int/globalchange/climate/summary/en/index12.html>> (31 Aug 2006).

GLOSSARY OF ARABIC TERMS

Aql: Intellect, rational intelligence

Ayat: Signs: Reference to e.g. aspects of the natural world as well as verses in the *Qur'an*

Darurat: necessary interests, the primary purposes of Islamic law

Din: Religion

Fasad: Disasters, Corruption, Mishief

Ihsan: Excellence, complete and permanent submission of the heart and the mind to God's will

Ijtihad: The effort through which Islamic law is derived through the *Qur'an* and *Sunna*

Khilafah: The role of trusteeship or guardianship granted to humans

Mal: Wealth

Maslahah: an instrument of *ijtihad*

Mizan: Balance

Nafs: Life

Nasl: Progeny, lineage, posterity;

Qiyas: Analogy

Qur'an: The primary source of Islamic law for Muslims. It is believed to be the word of God, as revealed to Muhammad

Riba: Usury

Salaat: Ritual prayer performed five times daily

Sunna: The sayings and actions of Muhammad

Tawhid: The concept of one God; symbolising the Unity of creation

Wudu: Ablution, performed in preparation for prayer

Muzammal Hussain has been active with environmental campaigning for more than a decade. Whilst building strong links with the wider environmental movement, he was amongst the first to mobilise the UK Muslim community on climate change and GM foods. In 2002, he initiated Ecobites, an environmental E-newsletter especially for UK Muslims, and in 2004, he established the London Islamic Network for the Environment (LINE), the UK's first local Islamic Environmental Group. Along with outward campaigning he believes in the necessity, for individuals and groups, to integrate in themselves the very values that they wish to see in the world around them. Muzammal is also a medical doctor and has worked in the field of mind-body healing.