http://www.gowerpublishing.com/isbn/9781409429012

Islam and Sustainable Development

New Worldviews

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Sustainable Development Revisited

The carbon cycle and Islam are both vital for life, however, both carbon and Islam are perceived as global threats to humanity and sustainability in the twenty-first century. Both concepts need to be de-constructed and re-constructed.

(The Author)

Overview

This chapter is intended to present some basic definitions and approaches of sustainability. Also, it aims to critique the current economic model which failed people, nature and economy. The argument is that the current market economy is not telling us the ecological truth and that GNP is not the right metrics to measure the heath and wealth of nations. The chapter describes the pitfalls and shortcomings of the prevailing economic model that is based on growth and overconsumption and that is characterised by huge gap between the rich and the poor, overconsumption, pollution and climate risks.

The chapter sets the scene for the need for a new model that promotes prosperity without overconsumption and pollution. It is about living lightly on earth (*zuhd*). This chapter also introduces key Islamic concepts to set the scene for Chapter 2 which outlines the framework of a new model for sustainable development informed by Islamic local knowledge, spirituality and culture.

Objectives

The main objectives of this chapter are outlined below:

1. Review the evolutions and terminology of sustainable development.
2. Critique the current market-based economic model.
3. Discuss the foundations of sustainable development.
4. Assess the adequacy and reasonableness of the conventional model of sustainable development.
5. Introduce the basic concepts of sustainability from an Islamic perspective.

Sustainable Development – Revisited

I started this chapter on 25 September 2010 in Bahrain where I was listening to the UN General Assembly on Millennium Development Goals (MDGs) and the level of meeting the targets. Watching BBC and Al-Jazeera International revealed interesting facts. One BBC commentator was stating that the UN building was so majestic but the actions and results of 192 nations did not meet expectations. Questionable fund effectiveness, lack of incentives for private sector and a limited role for civil society and poor governance are key issues that limit the effective attainment of MDGs targets. There is a lot of concern and scepticism that 2015 will come and still the world will be lagging behind meeting many targets for the MDGs.

The Evolution of the Concept of Sustainable Development

The concept and challenges of sustainability were addressed in many studies like the *World Conservation Strategy* published by IUCN, WWF and UNEP in 1980, and its successor *Caring for the Earth* in 1991, and in the report of the World Commission on Environment and Development (WCED) in 1987. It was discussed at United Nations conferences in Stockholm in 1972, Rio in 1992 and Johannesburg in 2002 (Adams, 2009).

The key question is 'Are we moving towards a sustainable future considering the poverty trap, human dignity deficit, HIV and ecological degradation?' Are we having the right balance between all capitals (natural, social, human, manufactured and financial)? The current global trade suggests that we are outsourcing China to feed and provide goods to billions of people worldwide. The global governance is dysfunctional as was evident in Copenhagen climate talks in 2009. We are using the natural capital of China through the use of virtual energy, water and food, and the question is how much time does it take to maintain the status quo?

Detailed analysis of the ecological, economic and social vital statistics reveals that the current economic development model is failing people, nature and the economy. There are ecological and land-use amnesia and blind spots in the current economic model, a reason it fails to tell us ecological truth.

Specifically, the term 'sustainable development' was used in 1987 by the Brundtland Commission and has become a widely used notion in many disciplines like, transport, water, housing and tourism. The term meant the ability to 'meet the needs of the present without comprising the ability of future generations to meet their own needs'.

In the 1970s, the term sustainability was used to describe an economy in equilibrium with basic ecological support systems. The three key components of sustainable development include environmental, economic and social dimensions as depicted in Figure 1.1. However, other models viewed the environment (natural capital) as the overall foundation of life-support systems that underpin our social capital and financial capital as shown in Figure 1.2.

The following is a review of the basic definitions of sustainable development. Sustainability means different things to different people yet it appears to unite them under a shared target. The purpose of this review is to help identify gaps in these definitions so as to help formulate a new model for sustainability. The concept of sustainable development will be explored below after which key elements of the definitions will be discussed based on the work of Rijsberman (2000):

1. The Brundtland Commission defines sustainable development as 'a development that fulfills the needs of the present generation, without compromising the ability of the future generations to fulfill their need' (WCED, 1987, p. 43). An important element in this definition is the fulfilment of the needs of the present generation on the one hand and of the needs of future generations on the other.

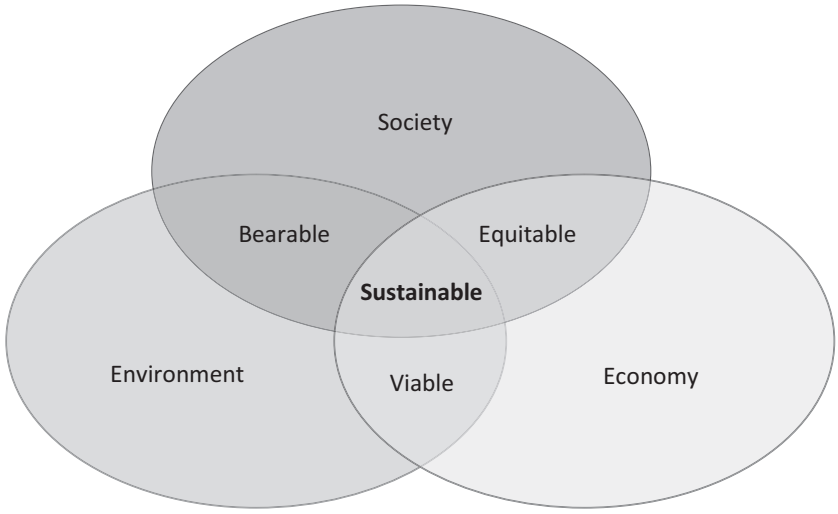

Figure 1.1 Scheme of sustainable development (IUCN, 2006)

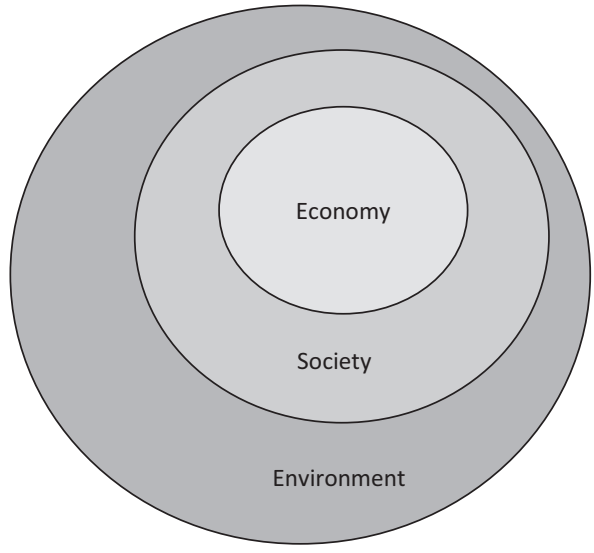

Figure 1.2 A representation of sustainability showing how both economy and society are constrained by environmental limits

2. The International Union for Conservation of Nature (IUCN) defines the term as: 'Sustainable development means improving the quality of life while living within the carrying capacity of supporting ecosystems' (World Conservation Union et al., 1991). This definition is broader than the one of the Brundtland Commission. It is evident that

this definition includes important elements like the improvement of the quality of life and the carrying capacity of supporting ecosystems. The 'improvement of the quality of life' in this definition seems more ambitious than the 'fulfillment of needs' in the Brundtland definition. Improving of the quality of life' can be interpreted as equal to fulfilling needs to a higher degree: the quality of life can be thought of as the amount in which people's needs are fulfilled.

3. According to Mostert (1998), sustainability implies that the supply of 'natural capital' is maintained'. He stated that the sustainable development should meet the following conditions:

   - the use of renewable sources – such as water – should not exceed the rate of renewal;

   - the use of non-renewable resources – such as fossil fuels – should be such that they will not be exhausted before alternative sources are available;

   - fundamental ecological processes and structures should be maintained.

This definition addresses the carrying capacity of supporting systems and the maintenance of the integrity of the system which is referred to as the prevention of system degradation.

Based on the above definitions, we can frame and construct four approaches to sustainable development based on people, environment, norms and values as depicted in Figure 1.3. The combinations and relationships between the four components (people/environment/norms/values) form four approaches for understanding sustainable development. These are as follows:

a) Carrying capacity approach which is based on being aware of the carrying capacity of environment which is referred to in Islam as balance (*Mizan*).

b) Ratio approach which is based on an evaluation of a present situation under certain criteria and objectives including physical and human factors which is referred to from an Islamic perspective as beauty (*Ihsan*).

c) Socio-approach which takes into account people's interests and opinions in policy formulation and decision-making which is referred to as *Arham* which refers to the human social capital and connectivity.

d) Eco-approach which focuses on the intrinsic value of nature and the ecosystem services which is referred to as *Tasbeeh* since all species are in a state of prayers (*Tasbeeh*).

Figure 1.3 outlines key sustainability concepts and the corresponding Islamic concepts associated in the four approaches to sustainable development.

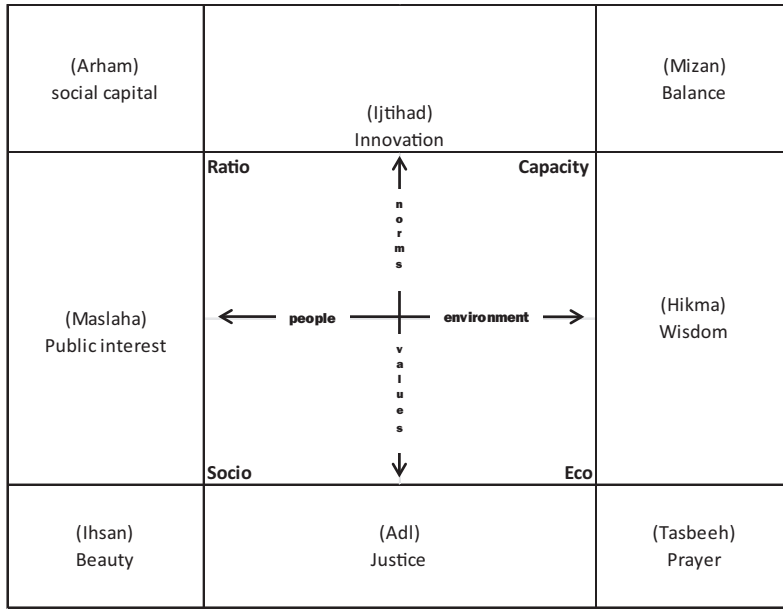

Figure 1.3 Terms associated to the various aspects and approaches of sustainability: Rijsberman (2000) and Al Jayyousi (2008)

It should be mentioned that we need to look at sustainability as a process, not as a project or a product since in the real world we deal with complex problems that need multiple solutions and perspectives and that is why the various approaches and notions of sustainability (*Tayyebah*) may offer multiples views and solutions to the same problem.

The key concepts associated with sustainable development from an Islamic perspective as depicted in Figure 1.4 include:

1. Wisdom (*hikma*): this represents the purposeful pursuit of acquiring and embodying wisdom from all nations. This cross-fertilisation of knowledge is a critical element in transforming societies to value-based eco-communities that embrace sustainability as a way of life.

2. Justice (*adl*): this implies the good governance in its broad sense which is the core of a sustainable rule that is based on rights.

3. Public interest (*maslaha*): this notion refers to a consensus reached by a community on what constitutes 'good' for all. This represents a ruling and a principle for defining collective goods.

4. Innovation (*ijtihad*): this refers to applying diligence and intellectual capital to solve current and emerging problems. It is also about reinventing new tools and methods to make a transition to sustainable development.

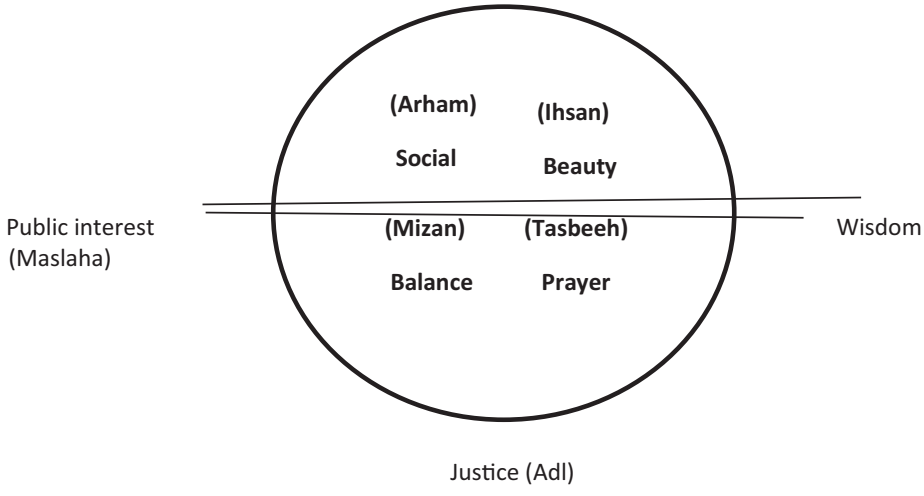

Figure 1.4 Key Islamic terms related to sustainability

Moreover, the combination of each pair of the above concepts yields a set of notions that inform sustainability. Specifically, beauty (*ihsan*) is the trade-off between innovation (*ijtihad*) and wisdom (*hikma*). The other concepts *Tasbeeh,*

Mizan and Arham, are the trade-offs resulting from (wisdom-justice), (justice-public interest) and (public interest-innovation) respectively as illustrated in Figure 1.4. These concepts will be discussed in detail in the following chapters.

Sustainability Principles: Lessons from Ecology and Thermodynamics

In the 1960s and 1970s, the planet was viewed as 'Spaceship Earth', as articulated by Kenneth Boulding and Barbara Ward (Ward, 1966). The challenge we had is that population growth follows geometric series while natural resources follow a mathematical series.

The imagined clash between development and conservation of nature was reconciled by the term 'sustainable development' but this concept meant many things and the concept lacks quantified indicators and metrics. However, the key notion of taking attention of both intra-generational equity (between rich and poor now) and intergenerational equity (between present and future generations) is the cornerstone for a sustainable future.

As argued by Adams (2008), faith in 'business as usual' to deliver the changes needed owes more to the hopes of those with wealth and power than to a coherent analysis of the state of the environment or the needs of the global poor. We face the risks of tipping points and irreversible changes in the environment and in its capacity to support and sustain human life in all its dimensions. This state of imbalance and pollution is referred to as '*fasad*' in Islam which is attributed to human-made actions.

Mainstream sustainable development, according to Adams (2008), encompasses a series of ideas such as ecological modernisation and market environmentalism that promise to steer the world towards sustainability in ways that do not demand too many dramatic changes, and that do not upset the comfortable, the rich or the powerful.

Transforming society and the world's economy to a sustainable basis presents the most significant challenge to the twenty-first century. This challenge is unprecedented in scope. Its context is the planet as a whole. It requires a fundamental shift in consciousness as well as in action. It calls for a fresh vision, a new approach for shaping a new reality. The following principles are based on the work of Ben-Eli (2005).

THE FIRST PRINCIPLE: NATURAL STATE (*FITRA*) PRINCIPLE

> *Contain entropy and ensure that the flow of resources, through and within the economy, is as nearly non-declining (mizan) as is permitted by physical laws.*

This principle implies a number of policy and operational implications which include (a) striving for highest resource productivity, (b) amplifying performance with each cycle of use, (c) employing 'income' rather than 'capital' sources where applicable and continuously recycling non-regenerative resources, (d) affecting an unbroken, closed-loop flow of matter and energy in a planetary productive infrastructure, (e) controlling leakages and avoiding stagnation, misplaced concentrations or random diffusion of chemical elements during cycles of use, and (f) establishing a service, 'performance leasing' orientation for managing durable goods.

THE SECOND PRINCIPLE: ACCOUNT FOR ECOSYSTEM SERVICES (*MIZAN*) PRINCIPLE

> *Adopt an appropriate accounting system, fully aligned with the planet's ecological processes and reflecting true, comprehensive biospheric pricing to guide the economy.*

This principle implies a set of policy options such as (a) employing a comprehensive concept of wealth related to the simultaneous enhancement of five key forms of capital (natural, human, social, manufactured and financial), (b) aligning the world's economy with nature's regeneration capacity and incorporate critical 'externalities' in all cost and benefit accounts, (c) embodying a measure of well-being and human development in economic calculations, (d) designing regulation and taxation policies to accentuate desirable and eliminating adverse outcomes, optimising the whole.

THE THIRD PRINCIPLE: RESPECT ALL COMMUNITIES OF LIFE (*UMAM*) PRINCIPLE

> *Ensure that the essential diversity of all forms of life in the Biosphere is maintained.*

A set of policy and operational implications can be devised which (a) harvest species only to regeneration capacity, (b) assume a responsible stewardship for

our planet's web of biological diversity, (c) shape land-use patterns to reduce human encroachment on other forms of life and enhance biological diversity in areas of human habitat, and (4) conserve the variety of existing gene pool.

THE FOURTH PRINCIPLE: PROMOTE THE ROLE OF A TRUSTEE (*UMMAH WASSAT*) GLOBAL COMMUNITY

> *Maximise degrees of freedom and potential self-realisation of all humans without any individual or group, adversely affecting others.*

Based on the above principle a set of policy and operational implications can be identified. These include (a) fostering tolerance as a cornerstone of social interactions, (b) enshrining human rights within a framework of planetary citizenship like the Earth Charter, (c) providing for good governance, (d) ensuring equitable access to life nurturing support, and (e) establishing cooperation as a basis for managing global issues and planetary resources.

THE FIFTH PRINCIPLE: UNDERSTAND THE SYMPHONY OF LIFE (*TASBEEH* AND *SUJOOD*) PRINCIPLE

> *Recognise the seamless, dynamic continuum of wisdom, love, and energy that links the outer reaches of the cosmos with our solar system, our planet and its biosphere including all humans, with our internal metabolic systems.*

The above principle may inform a number of policy actions. These include (a) acknowledging the transcendent mystery (*ghayb*) that underlies existence, (b) seeking to understand and fulfil humanity's unique function in Universe (*taskheer and istikhlaf*), (c) honouring the Earth with its intricate ecology of which humans are an integral part (*ummam amthalokom*), (d) fostering compassion and an inclusive, comprehensive perspective in the underlying intention, motivation and actual implementation of human endeavours, and (e) linking inner transformation (*dameer*) of individuals to transformations in the social collective (*taghyeer*), laying foundations for emergence of a new planetary consciousness.

THE FIVE PRINCIPLES AS AN INTEGRATED WHOLE: UNITY WITHIN DIVERSITY

Deeper reflection on the concept of sustainability and the five core principles which together prescribe it reveals that the spiritual dimension, the spiritual

principle, is fundamental to the quality and coherence of the whole. As a guiding principle, Islamic values and thought form the foundation and underpins the spiritual dimension. Islam, viewed as a worldview and a way of life, evokes the soul-focused integration of mind and heart in realisation of the essential oneness (*tawhid*) at the centre of being.

By anchoring the essence of human motivation and intention as framed in Islam as 'the construction of Earth' (*Emmarat al ard*) and stewardship (*istikhlaf*), the spiritual principle acts as the causal root which sets the tone for the whole. It drives the integration of the four principles, those related to the material, economic, life and social domains. It integrates in a balanced way to evolve a value-based and objective community (*ummah wasat*); it can infuse a common purpose, provide a common foundation and stimulate common resolve.

A balanced and full integration of all five principles is essential, however, for conceptualising and realising sustainability as a state. The whole set has to be integrated into a single unity in which the five principles come together as one. The five domains underlying the principles interact and co-define one another to contribute to define what constitutes a good life (*Hayat Tayebah*).

Good life (*Hayat Tayebah*) and the pursuit of happiness in Islam have little to do material accumulation and consumption. In a consumer-based credit society the media promotes the illusion that the more one consumes the more he attains happiness. This illusion which the media promotes through the manipulation of minds creates a lot of consumer products and shift 'wants' to 'needs'. The media also helps to promote universally accepted ethos, standards and norms in a globalised world and globalised minds which are risky to cultural and biological diversity.

Good life (*Hayat Tayebah*), from an Islamic perspective, has to do with the positive role of the human to construct and add-value to life (*Emarat al Ard*) and to be a witness and a trustee and to leave a good legacy. Euro-centric or US-centric views of what constitutes a good life differ from the basic Islamic notions of simplicity or sufficiency (*Zuhd*) and using local resources and knowledge to attain a people-centred development as the model developed in Egypt by Ibrahim abu El Aish.

The State of the Environment

This section argues that our economic development model has many blind spots when it comes to nature conservation. Besides, humans suffer from landscape and species amnesia. We tend to worry about our financial capital but are not aware of or less concerned with our social and natural capital.

The notion of *natural state* '*fitra*', or the balance in nature, is a key concept in Islamic worldview. This implies that everything on earth is in balance (*qadar*) and there is sufficient food and resources, if distributional equity and justice exist. Islamic thought states that if conditions of equity are met, no scarcity of resources will exist. Islam views the current global ecological crisis as a problem of ethics and equity.

The current Western development paradigm is founded on consumerism. What makes things worse is that the global media promotes overconsumption as a means to pursue happiness. The scale and speed of consumption was referred to as 'great acceleration' shows increasing trends in water, food, energy use. Reports about the 'state of the world', ecological footprints and the metrics of the World Wide Fund for Nature's 'Living Planet Index' (LPI), show the level of the ecological crisis as estimated in 1998 and 2008 (MEA, 2005). Statistics of global population, urban population and consumption, the level of international telecommunications, motor vehicles all show steep rises in the second half of the twentieth century. As documented by Adams (2008), Table 1.1 shows the salient impacts of the current human development patterns on biosphere.

Statistics show that a 16-fold growth in energy use in the twentieth century was associated with sulphur dioxide emissions twice natural emissions – nitric oxide, carbon, dioxide, methane emissions all far above background levels – and the release of manufactured chemicals such as chlorofluorocarbons (Crutzen, 2002). The Intergovernmental Panel on Climate Change (IPCC) *Fourth Assessment Report* (2007) found that 11 of the 12 years 1996–2006 were among the 10 warmest years in the instrumental record, which began in 1850.

The question remains whether we can attain prosperity without growth and without having an economy based on fossil oil. Transformation to a sustainable future requires reducing consumption (*zuhd*) and redirecting consumption to less destructive forms (*ihsan*) and learning from ecology as detailed by Kiuchi

Table 1.1 Human impacts on the biosphere

- Between 1970 and 2003, the 'Living Planet Index' fell by about 30 per cent. The terrestrial index (695 species) fell by 31 per cent, the marine index (274 species) by 27 per cent and the freshwater index (344 species) by 29 per cent.
- Three-quarters of the habitable surface of the earth has been disturbed by human activity.
- Human activities have increased previous 'background' extinction rates by between 100 and 10,000 times.
- 40 per cent of potential terrestrial net primary production was used directly by human activities, co-opted or forgone as a result of those activities.
- Fertiliser made from industrially produced ammonia sustains roughly 40 per cent of the human population and comprises 40–60 per cent of the nitrogen in the human body.
- Industrial fish-harvesting techniques, such as trawling, and pollution of productive shallow seas and areas of living diversity such as coral reefs and seamounts has led to a transformation of the ecology of the oceans to an extent that even marine scientists have only recently begun to appreciate.
- The population of large predatory fish is now less than 10 per cent of pre-industrial levels.
- More than 2 million people globally die prematurely every year due to outdoor and indoor air pollution.
- Per capita availability of freshwater is declining globally, and contaminated water remains the single greatest environmental cause of human sickness and death.

and Shireman (2002). This implies a transformation towards a low-carbon society or a green economy. The 'Factor 10 Club' founded in France in 1994 by Friedrich Schmidt-Bleek, whose goal is to dematerialise the economies of the industrialised countries tenfold on the average within 30 to 50 years, is an example for a transition to sustainability (Hawken et al., 1999).

There is a growing interest in ideas of 'de-growth' (*zuhd*) or downscaling (Latouche, 2004). De-growth is a term created by radical critics of growth theory. The transformation to clean energy is imperative in light of the fact that the energy peak oil is being reached and the era of cheap hydrocarbons is coming to an end. High energy prices will drive changes in the technology and human behaviour. The WRI estimates that 30 per cent of greenhouse gas emissions come from deforestation, agriculture and forestry. The value of economic services is to be mainstreamed in development thinking. In 2006, $52 billion was invested in renewable energy sources worldwide (WWI, 2008). Investing in ecosystems through natural solutions (*fitra* solutions) provides immense opportunities to secure a sustainable future. In a nutshell, the current global state of environment provides evidence that the current development model is unsustainable. In essence, the climate change risk is an indicator of a market failure. It is imperative to look for an alternative model to ensure a sustainable future for people and nature.

At the social front, according to Sachs (2005), every day about 20,000 people perish because of extreme poverty. Everyday 7,500 young adults die because of AIDS. Since 11 September 2001, the United States has engaged in a war on terror, but neglected the deeper causes of global instability. The $450 billion that the United States spent in 2001 on the military will never buy peace if it continues to spend about one thirtieth of that, just $15 billion, to address the plight of the world poorest of the poor. The $15 billion represents 15 cents on every $100 of US gross national product. The share of US GNP devoted to helping the poor has declined for decades, and is a tiny fraction of what the US has promised.

As argued by Sachs (2005), official development assistance (ODA) is the largest source of external funding and is critical to the achievement of the development goals and targets of the Millennium Declaration. The consensus among the developed world is to devote 0.7 per cent of GDP as ODA. In 2002, aid was $53 billion, just 0.2 per cent of rich-world GNP. If rich countries met the target, aid would reach $175 billion per year, equal to 0.7 per cent of the $25 trillion rich-world GNP in 2002. For the US, foreign aid would rise from around $15 billion per year in 2004 (0.14 per cent of GNP) to around $75 billion (0.7 per cent of US GNP). The poverty trap and the recipe to end poverty were articulated by Sachs (2005). The remedy is about political will and commitment to allocate sufficient (0.5 per cent of global GNP) resources from North to South.

The idea that decades of formal 'development' have created a world where all countries are experiencing economic growth and gains in quality of life (let alone all people in those countries) is an illusion. Less than 10 per cent of the world's gross national product (GNP) stems from low-income countries (World Bank, 2000). Average annual income is less than $300 per head in Burundi, Cambodia, Chad, the Democratic Republic of Congo, the Central African Republic, Eritrea, Ethiopia, Malawi, Mali, Nepal, Niger, Nigeria, Rwanda, Sierra Leone, Tanzania and the Yemen Republic. Many, although not all, of these poorest countries are in Africa, and many are also suffering the destruction brought by civil or international war (for example, Sudan, Sierra Leone, Liberia, Democratic Republic of Congo). The share of global wealth enjoyed by the world's poorest countries, and by the world's poorest people in all countries, is low and falling.

In September 2000, the United Nations Millennium Summit agreed on eight Millennium Development Goals, with 18 targets and 48 indicators as

yardsticks for measuring improvements in people's lives. And the good news is that there has been substantial progress in poverty reduction: the proportion of people subsisting on less than a dollar a day globally halved between 1981 and 2001, and for the first time in human history, the absolute number of people living at this level fell. But that still left 21.3 per cent of the world's population living in extreme poverty, some 1.1 billion people. Poverty gains have been concentrated in Asia, especially China. Indeed, if China is excluded, the number of people living on less than a dollar a day has actually increased, growing from 836 million to 841 million between 1981 and 2004. This increase in the number of the poor was most marked in Africa, where the number living at this level rose from 164 million to 314 million between 1981 and 2001, 46 per cent of the population.

It is argued that the current concern for sustainable development needs to be replaced with a new and broader concern for 'environmental sustainability and justice (*adl*)'. This must embrace both the familiar concerns for intra-generational justice (justice for the poor now) and inter-generational justice (justice for those yet unborn), and also justice with respect to other species. Justice (*Adl*) from an Islamic perspective is the cornerstone for good governance and a sustainable civilisation.

There is a worrying tendency in international debates as argued by Adams (2008) to use arguments about efficiency to pursue policies aimed at sustainability onto the poor. The cost-effectiveness too often trumps justice, whether it is plans to control human use of forests or to promote the growing of biofuels. Thus enthusiasm for REDD (reduced deforestation and degradation) is partly driven by arguments that it is simply cheaper to reduce carbon loss from developing world forests and farmlands than by interfering with the high-value economies (and lifestyles) of developed countries. It is no part of a justice agenda to let the world's poor be paid the low rate for carbon to deal with the consequences of a world economy that so strongly favours the rich. Actions to tackle climate change are unlikely to be uniform and thus responses to climate change have justice implications.

The Need to Rethink Sustainable Development

The following presents a set of arguments pertaining to why we need to rethink development and sustainability based on new metrics of measuring

sustainability, the pitfalls of using GNP as a sole indicator for sustainability and the cost of economic growth on our natural capital:

1. *No metrics to measure sustainability:* One of the challenges of sustainability as revealed in the global statistics is the lack of objective and realistic metrics and indicators to measure sustainability. Besides, the conventional framework or mental model for sustainability where the social, economic and ecological domains are viewed as overlapped circles as shown in Figure 1.1 makes the implicit assumption that we can make trade-offs between the three domains. This perception resulted in irreversible losses in ecosystem services which represents our natural capital. Another conceptual model (as depicted in Figure 1.2) sees the three domains (ecology, society and economics) as three circles which share the same centre with the largest domain as the natural capital and the smallest one is the financial capital. This means that our natural capital underpins our social and financial capitals.

2. *Addressing poverty and natural conservation:* The trickle-down effects of international aid need to be assessed to ensure that the local poor benefits. It is interesting to note that of the $350 billion spent by the US Government in developing countries, 90 per cent goes to people above median incomes – this is essentially a subsidy to the middle class. Public policies and aid need to move beyond cash transfer which often involves a translation to a Western-style modernity, industrial, urban, democratic and capitalist to a context and a culture that is not congruent with local norms and values.

3. *Thinking beyond GNP as a measure of the health and wealth of nations:* The twentieth-century fixation with GNP, as argued by Korten (1995), as a measure of human development is flawed. Developed countries do not provide good models for a transition to sustainability as articulated by Adams (2008): they are the least sustainable on earth. Their levels of consumption are the chief drivers of anthropogenic climate change and biodiversity loss; their economies draw poor communities in the developing world communities into systems of production and exchange, but even where they generate wealth they do not stimulate equity. High quality of life and high scores on measures of human development are not necessarily associated with high GNP per capita: as argued by Fanelli (2007), Cuba offers

an interesting challenge to the notion that rich countries show the way towards sustainability. An analysis of the Global Footprint Network of ecological footprints of 93 nations over the last 30 years shows Cuba alone on the path to sustainability.

Cultural wealth, not least of indigenous peoples, is rarely measured, but is critically important to human welfare. Islam represents the local knowledge and the cultural wealth that needs to harnessed to convey a new model for sustainability and mercy for all humankind (*rahma lel alameen*). As argued by Korten (1995), the major portion of what shows up as growth in GNP is a result of:

a) shifting activities for the non-money social economy of household and community to the money economy with the consequent erosion of social capital;

b) depleting natural resources stocks such as forests, fisheries and oil and mineral reserves at far above their recovery rates;

c) counting as income the costs of defending ourselves against the consequences of growth, such as disposing of waste, cleaning up toxic dumps and oil spills, providing health care for victims of environmentally caused illnesses, rebuilding after floods resulting from human activities such as deforestation, and financing pollution-control devices.

The trade-off between the economic, social and environmental domains often results in sub-optimal solutions that need a negotiated agreement among different stakeholders, as illustrated in the case of managing the Azraq wetland in Jordan.

AZRAQ OASIS IN JORDAN: ALLOCATION OF WATER USES AMONG COMPETING USERS

The Azraq Oasis is a wetland site located in eastern Jordanian desert. It is an outstanding example of an oasis wetland in an arid region with a unique ecosystem wetland and immense biological, cultural and socioeconomic value. It lies on the heart of the Azraq Basin with an area of approximately 12710 km^2; the oasis supports a rich and varied aquatic fauna and flora that are very rare in the region. It is also important for migratory birds, with up to a million birds utilise the area during migration, forming one of the most unique ecosystems in the world.

The oasis is under severe pressure and ecosystems are in the far stage of degradation. The main cause of the destruction of the Azraq Oasis in the last twenty years is the overexploitation of its groundwater for various water uses. During the 1970s and after, agricultural activities began to ignite in the Azraq area, leading to high extraction levels, 3 times more than the safe sustainable yield.

However, the gap between water supply and demand widened, water uses were much exceeding the safe yield, which is currently about 24 MCM, in percentages it's around 260% more than the safe yield, while the over-extraction is -38.5 MCM as documented in the Ministry of Environment; Environmental Profile of Jordan, 2006. This water deficit was due more than one reason; the inter-basin transfer between Azraq and Amman, inappropriate agricultural patterns and illegal wells. As a result for water over-extraction, the Azraq wetland was at risk and it lost its biodiversity and touristic attraction. Many competing users from domestic, farming, environment and industry are competing to secure their fair share but a question was raised; what is the fair and reasonable share, and how can we develop a platform to enable users to see facts and risks and to change their perceptions about how can we achieve sustainable development.

Rethinking Sustainability: An Islamic Worldview

Nomani and Rahnema (1994) and Chapra (2008) outlined a set of concepts for the Islamic economic system and meaning of money from in Islam. This chapter relies on their work.

The cornerstone of Islamic belief is oneness or unity (*tawhid*) of the Creator, oneness of human origin and oneness of human destiny. Since sustainability is guided by norms and values, the following are some basic concepts in Islam that will help define and frame sustainability in a broader sense.

UNITY OF ORIGIN AND DESTINY

According to the Islamic view, God has created the universe for the benefit of all human beings. God has made the resources of this earth available to humans who have the responsibility to conserve and utilise them in a rational manner. God has given humans the necessary abilities to understand the universe, nature and life. Humans are viewed as trustees and stewards who are responsible to respect the natural laws and ensure justice (*adl*) and sustainability (*tayebah*) approaches to harness natural resources. All human endeavours and acts are forms of worship of God. There is no disconnect between the spiritual and the secular or this life and Hereafter. This unity of time and belief inspires the

human to celebrate the diversity of life and to proceed continually in his (her) pursuit to discover, understand, live and enjoy this world.

The Islamic worldview and perspective of the origin and the unity of humanity are simple and clear. Islam views all human beings as children of Adam. As human beings, they are all equal and are part of a global family who should know each other and share knowledge. Thus, the present day situation in which the poor countries are heavily indebted to the rich countries is not in conformity with the Islamic vision. Social, economic and environmental justice are universal human ethics that must be respected by all. The Islamic economic model is based on communal equity and encourages individual innovation (*ijtihad*) but with certain checks and balances to define the limits and degree of government invention that would prevent the building up of concentration of economic power.

Islam teaches that there is a purpose for this creation and humans are accountable. Humans have responsibility and trust (*amanah*) as the vicegerent of God and they are accountable to God for all actions on the Day of Judgement. Thus, Islam prescribes a strong system of accountability at all levels. This is true at the international level as in the case of the climate change debate. The present situation in which certain powerful nations and global corporations are not accountable to anyone in this world is not congruent with the Islamic worldview. Islam envisages a world in which everyone with authority is accountable for his actions. Also, Islam teaches that all species, human and natural resources must be safeguarded against waste, depletion and destruction.

ISLAMIC ECONOMIC MODEL

The basic underlying conventional economic theory is the assumption that humans are rational and are utility maximisers. This implies that human beings are inherently selfish and that their primary concern is to derive maximum utility; this in turn will yield a positive utility for the society as a whole. In other words, in capitalism the individualistic human behaviour of individuals and nations is not only rationalised but also encouraged. Hence, at the individual level, an individualistic attitude that shows little concern for the betterment of people and nature may be seen as acceptable and reasonable. At the national plane, it is considered perfectly legitimate both for individuals and nations to adopt policies which serve self-interest.

Islam, however, recognises the dual nature of human beings. Human beings are selfish as well as altruistic. It does, however, encourage human balance between needs and wants. Also, Islam seeks to control human selfishness and enhance human altruistic motives to help the community of life at large as part of social responsibility.

On the other hand, the capitalist economic model places a very high value on material accumulation and links it as a means to pursue happiness. The capitalist approach to life had accelerated over-consumption, pollution, depletion of non-renewable natural resources, deforestation and ecological imbalances which contribute to climate change as articulated by Hussain (2007).

Islam treats material possessions as means not ends and as secondary to the moral and spiritual development of the human and social capital. It does encourage enterprise and effort to increase one's material well-being within good (*tayebah*) means so as to be rewarded in the Hereafter (Day of Judgement). This change in the focus of human striving introduces a balanced approach to economic development in terms of time and space. The Islamic approach urges to embody and adopt restraints in the human endeavour to manage wealth or material consumption. This is referred to as de-growth (*zuhd*).

The colonial era had resulted in excessive exploitation of many countries and degraded their natural, human and social capital. The governments and private sector in the industrialised West have a responsibility to restore and rehabilitate the damage resulted in degradation of the developing world. The current inequity is a result of decades of colonial use of natural and human capital. In the same context, the environmental justice (*adl*) in the global climate debate should consider the historical and moral responsibility of the industrialised world towards the poor South.

Islam prescribes a free market based on supply and demand. At the same time, it ensures that the economic power is not accumulated with few people. Islam prohibits interest on capital and thus it promotes purposeful investment and ethical work to achieve progress of society. The general rule in Islamic investment is that whoever wants to earn a profit must assume risk as well. Islam views a society where an individual is productive and independent. It recognises the need of each individual to actualise his potential abilities. Thus, it sees a society where a maximum number of people are independent in their earning and living. This is also one of the implications of belief in One God

as the sustainer of the entire universe. The messenger of God indicated codes of conduct to ensure harmony between humans and nature. Traditionally, the Muslim societies have placed a low value on wage-labour. Instead, they have always encouraged forms of self-employment through what is referred to as (*mudarabah*). The Islamic economy would encourage such forms of people-centred development where local people harness their local resources to achieve local benefits.

Islamic ethos encourages the introduction of new technology and innovation (*ijtihad*). Moreover, it urges the industrialists to bear the cost of the dislocation or economic hardship created by the introduction of new technology based on the concept of 'no harm'(*darar* principle). Moreover, once the economy is organised on the principle of worker ownership, the benefits of new technology would automatically spread over to the whole economy.

Since Islamic economy does not allow interest on loan capital, all probability interest-free business credit will not be available on a large scale. Consequently, the question of limited liability of the shareholders in a joint stock company would lose much of its relevance. This in turn will limit market vulnerabilities and failures. Also, the Islamic economy discourages monopoly to ensure genuine competition and fair trade.

In an Islamic economic model, the issue of demand creation through media and advertisement would not take place in a remarkable manner as in the capitalist model. The fact that there is no interest will result in a condition that the constraints on the expansion of investment will be removed. The economy is likely to settle at full employment or near full employment level. The business organisations will have a lesser compulsion to create demand artificially through advertisements. In sum, Islam seems to prefer a society where the ownership of resources is widely dispersed. Islam would also like to maintain a high level of effective demand so that the resources remain fully employed. To achieve that end the Islamic economy has a mechanism of transferring wealth from the rich to the poor. It has made obligatory on everyone who owns a certain minimum of wealth to pay a fixed sum as *zakah* for the expenditure on the welfare of the poor and the needy. Besides, it encourages sharing resources through charity (*infaq*). Besides, the Islamic law of inheritance also contributes to the dispersion of wealth on a wide scale. Thus, Islam visualises transfer of sufficient purchasing power to the poor so as to keep the effective demand high enough for sustaining human dignity and combating poverty of the one

billion poor in the bottom of the economic ladder. Islamic economic model had devised a set of strategies to address poverty. These include:

a) a focus on human development, self-mastery and on quality education and capacity building;

b) promotion of small-scale and people-centred development;

c) sharing of profit and loss in finance and investment;

d) good governance (*adl*) as a key to address the root cause of poverty;

e) cooperation between different countries on the basis of equity participation in joint ventures;

f) establishment of trust or endowment funds (*waqf*) to support community needs in all domains of life;

g) social security at the local level through the collection and distribution of *zakah*.

ISLAMIC CONCEPT OF MONEY

As compared to capitalism, Islam treats money as a medium of exchange but not as a commodity. Money becomes useful only when it is exchanged into a real asset or when it is used to buy a service. Therefore, money cannot be sold or bought on credit. The economic model of Islam, by prohibiting interest, takes care of the problems of unemployment, inflation, foreign exchange volatility, business cycles and excessive depletion of natural resources.

The banking system in an Islamic economy is based on the concept of sharing profit as well as loss. The general principle is that those who want to earn a return on their savings should also be willing to assume a risk. The banks will have to share the loss of the enterprise as well if they wish to obtain a return on their capital.

The consumer behaviour in the capitalist economies is explained in terms of the sovereignty of consumers. It is contended that one is free to buy anything one likes. Consumers are excessively influenced by the credit-card mentality, media and advertisements. The temptation to buy new things is promoted as

a social value which rates the pursuit of novelty very highly. The consumers are persuaded to pursue happiness through accumulation of goods which they may not have sufficient time to utilise.

The effect of such an attitude is that the people living in developed countries, who are barely 25 per cent of the globe's population, consume 15 times as much paper, 10 times as much steel and 12 times as much energy as the remaining 75 per cent of people in the world. It is obvious that the resources of the world are just not sufficient to afford the same lifestyle for everyone on this earth. There is a great need for restraint. But the capitalist system does not have sufficient mechanisms to restrain people from wasteful consumption. Instead, its banks, media, business corporations and governments all have a vested interest in encouraging consumption so that a high level of investment is sustained.

SIMPLE LIVING (*ZUHD*)

The kind of economy that seems to be in harmony with the Islamic ethos is a low-consumption economy. This in turn will minimise the ecological footprints and help to transform societies into a low-carbon economy. The Islamic approach would require individuals to use the resource as intensively as possible and not to replace them until they have truly outlived their utility as outlined by Al-Jayyousi (2009). The prophet (peace be upon him) placed a very high premium on simple living and discouraged people from luxuries. Islam visualises an egalitarian society where relative differences in socio-economic conditions will be a lot less than what we observe in the capitalist societies. The Islamic view of life would require that those who can afford to have a higher material standard should voluntarily forego some of their comforts and help others improve their economic lot so as to enjoy a similar life style. It is only after most of the people have acquired a comparable living standard that the society as a whole should move to a higher socio-economic level.

The value system of Islam supports the above consumption pattern. An Islamic society that is founded and informed by God consciousness (*taqwa*) is considered a good community. *Taqwa* comprises a cluster of values like justice (*adl*), benevolence (*ihsan*) and benevolent spending in the cause of God (*infaq*). *Taqwa* channels the energies of the people away from acquisitiveness to a sustained effort aimed at spiritual self-enrichment and ecological and social awareness. Islam visualises an economy where the resources are conserved rather than depleted and consumed away. In the context of the present time, the Islamic approach would require a close cooperation among all the countries of the world to harness and conserve new renewable resources of the earth.

Despite this, it cannot be denied that a number of countries in the South have made serious efforts to build the economic infrastructure necessary for development. But the essential question remains as to why these efforts have not been able to achieve a breakthrough. The reasons seem to be primarily more social and political rather than economic as outlined below:

a) The roots of this underdevelopment are deeply embedded in the philosophy of development which these countries have pursued. Development, according to the prevalent theories, means increase in the physical stock of capital and infrastructure. The GNP has been the focus of all development effort regardless of the consideration how it is increased and who benefits from such an increase. In the process the Islamic countries and many developing countries have ignored their human, social and natural capitals.

b) The poor people of these countries do not have access to the resources of their country. The number of landless labourers is very high. Even those who happen to have a piece of land do not have access to finance, technology, water supply, market, fertiliser and pesticides. Therefore, they sell off this land and prefer to become labourers again.

c) There is a rampant corruption (*fasad*) in many developing countries. Corruption takes place to keep the people deprived of resources. A favourite class is groomed by means of licences, permits and other privileges at the expense of the poor.

SOCIETAL RESPONSIBILITY

The local community at the neighbourhood level constitutes the core of economic solidarity and social cohesion. *Zakat* and *Infaq* (sharing resources) refer to spending on others and on the social needs of the community merely to seek God's pleasure. The pre-Islamic Arabs were also aware of charity. But Islam has broadened the concept of charity in a number of ways. Firstly, it has made obligatory a bare minimum of social spending (called *zakah*) on all those who have a surplus over and above their needs. Second, in its broader meaning, *infaq* covers expenditure on one's own family as well which is not so in the case of charity. Third, Islam recognises the right of the poor and the needy to receive a share from the wealth of the rich. Forth, *infaq* has to be purely for the sake of God who has promised reward in the hereafter. *Infaq*

in the Islamic sense is a mechanism to nourish one's spirituality. The Quran has laid down *infaq* as a condition to achieve success and prosperity (*falah*). Fulfilling the covenants towards people and nature leads to *falah*. This means to honour personal commitments to the community and nature. This implies that polluting the environment is against achieving *falah* and efforts to harness natural resources are essential conditions to achieve *falah*.

In sum, the Islamic worldview sees the entire world has been created by God for the benefit of all human beings as discussed in Al-Jayyousi (2001). There is, thus, a great need for all the peoples of the world to consult and cooperate with one another while pursuing economic policies which might adversely affect others. Global, regional and local governance need to be mindful of the moral and rational imperatives to achieve world peace and prosperity. The above concepts in the economic and social system in Islam provide the foundations for sustainability and good life (*hayat tayebah*).

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