

Loughborough University  
Institutional Repository

---

*Construction of an  
ethics-augmented human  
development index with a  
particular reference to the  
OIC member countries*

This item was submitted to Loughborough University's Institutional Repository  
by the/an author.

**Additional Information:**

- Economics Research Paper, no. 02-14

**Metadata Record:** <https://dspace.lboro.ac.uk/2134/370>

Please cite the published version.

# **Construction of an Ethics-augmented Human Development Index with a Particular Reference to the OIC Member Countries**

Humayon A. Dar and Saidat F. Oti

**Abstract:** It is widely recognised that the standard measure of human development, the Human Development Index [HDI] does not totally capture the rich content of the human development concept, and, therefore, a more adequate measure of human development is needed. This is what this study sets out to do – to introduce an ethics-augmented human development index [E-HDI] as a new concept representing a new means of conceptualising social change and development for all countries generally and the OIC member countries in particular. It is envisaged to be of practical use to policy-makers in the OIC member countries, as well as the bilateral and international development agencies. Just as the HDI has managed to shift discussions beyond GNP, the E-HDI is expected to inject ethical concerns more explicitly into policy-making in the contexts in which the Human Development Reports are widely used. The E-HDI is expected to serve as an alternative focal point to both the traditional concentration on GNP and other measures of economic development like the HDI.

**JEL Classification:** D6, I3, and O1

**Keywords:** Human Development, Ethics, and Islamic Economics

# 1. Introduction

This study proposes to construct a new measure of human development as an improvement over the Human Development Index [HDI] reported in the annual Human Development Reports, published by the United Nations Human Development Programme [UNDP]. The proposed index, Ethics-augmented HDI [E-HDI henceforth] includes ethics-based constituents to produce country rankings based on each country's level of human development in relation to others. Data limitations have constrained the study to only 127 countries as against the 173 countries of the world considered in the Human Development Report. For the same reasons, only 52 of the 56 OIC<sup>1</sup> member countries are considered in this study.

Seven indicators of human development are included in the E-HDI. Given the multidimensional and complex feature of human development, it is difficult to feature non-quantifiable variables like freedom, faith and family values in a more adequate measure of human development. Nevertheless, the E-HDI combines both quantitative variables and variables expressing perceptions. It mixes different types of indicators: input and output, stock and flow, single and composite. Admittedly difficult, but this is indeed the nature of the phenomenon for which the study is aiming to provide a measurable proxy. After all, human development is a complex phenomenon that should definitely not be limited to the quantifiable.

The rationale for including the seven indicators used in the E-HDI could be extended, perhaps, to several others not included. In other words, though the indicators used are more comprehensive than those used in the current HDI, they are still not all embracing and exhaustive of all dimensions of human development. Furthermore, the indicators included are also amenable to refinements in definitions and measurement.

The next section reviews the transition from growth to social indicators as measures of development. It also reviews the literature on ethics and development with particular reference to Islamic ethics and its relevance to development. Section 3 reviews the underlying concepts and formulation of the existing HDI as presented annually by the UNDP in the Human Development Reports [HDRs]. We also discuss the rationale for the inclusion of various additional ethics-based constituents of human development to arrive at an ethics-augmented human development index. Section 4 describes the methodology of the study, while section 5 presents the data analysis and findings. Final section presents summary, conclusions and recommendations for further research.

## 2. Measures of Development: The Transition from Growth to Social Indicators

There has been a profound transition in the perception of economic development in recent decades. Prior to the 1970's, economic development was by and large

---

<sup>1</sup> The Organisation of the Islamic Conference (OIC) is an inter-governmental organisation with fifty-seven member countries as at 2002 (mostly countries with predominantly Muslim population). The organisation was established in September 1969, amongst other purposes, to strengthen solidarity and cooperation among member countries in the political, economic, cultural, scientific and social fields.

evaluated in terms of the gross national product [GNP] and per capita income, which stood alone as the ultimate standard of national progress and prosperity. According to this approach, development means ‘the capacity of a national economy, to generate and sustain an annual increase in its gross national product [GNP] at rates of perhaps 5% to 7% or more’ [Todaro1997]. Implicit in this analysis is the notion of utility and its positive relationship with income. However, given the difficulty of quantifying utility, expediency and practicality dictated a shift from the foundational concern with utility to a practical involvement with income statistics and evaluations based on it. Hence, the dominance of GNP and per capita-income as indicators of economic development, particularly during 1970s after which some alternative approaches also emerged. Within this period, economic growth became the main focus and the growth rate of per capita GNP became the goal of development. The problems of poverty and inequality were ignored, with a tacit assumption that when per capita GNP rises everyone becomes better off. Evidence to the contrary was dismissed with assurances that the benefits of economic development would, invariably ‘trickle down’ to all. However, in due course, the problems with using income and growth as key measures of success became evident, when many developing countries though realised their economic growth targets but the living conditions of the masses of people remained for the most part unchanged. As such, during the 1970s substantial work appeared on development as ‘growth with equity’ or ‘redistribution from growth’. This differed from the earlier views in significant ways, especially in bringing to the fore the issues of deterioration in the relative income position of the poor, growth of unemployment, and increase in the number of impoverished, etc.<sup>2</sup> Accordingly, various attempts were initiated to correct, supplement, or replace per capita income as a measure of development in the 1970s. Though economic growth remained unarguably an important aspect of the process of economic development, there was a realisation of the fact that growth was not always synonymous with development and the difference between the two were brought out by a number of contributions to development economics.<sup>3</sup> Consequently, a new view of development emerged, which Todaro aptly puts in the following words:

‘Development must therefore be conceived of as a multidimensional process involving major changes in social structures, popular attitudes, and national institutions, as well as the acceleration of economic growth, the reduction of inequality, and the eradication of poverty. Development in its essence, must represent the whole gamut of change by which an entire social system, tuned to the diverse basic needs and desires of individuals and social groups within that system, moves away from a condition of life widely perceived as unsatisfactory toward a situation or condition of life regarded as materially and spiritually better’ [Todaro 1997, p.16].

There have since been numerous efforts to create other composite indicators that could serve as complements or alternatives to the traditional measure. A number of economists expounded the incorporation of social indicators as alternative measures of development<sup>4</sup>. However most of the early studies incorporating social indicators

---

<sup>2</sup> See for instance Weaver and Jameson 1977, and Griffin 1977.

<sup>3</sup> See for example, Streeten 1981; Grant 1978; Morris 1979; and Streeten *et al* 1981.

<sup>4</sup> Adelman and Morris 1967 conducted an early major study that sought to measure development in terms of a pattern of interaction among social, economic, and political factors. Another study, carried out in 1970 by the United Nations Research Institute on Social Development Geneva [UNRISD 1970] was concerned with the selection of the most appropriate indicators of development and an analysis of the relationship between these indicators at different levels of development. The result was a

and dimension were criticised on the grounds that they sought to measure development in terms of structural change rather than in terms of human welfare. Another ground for criticism was the implicit assumption that developing countries must develop along the same lines of the developed countries. Several studies emerged in response to these criticisms, seeking to develop composite indicators that measure development in terms of meeting basic needs of majority of population, or in terms of quality of life.

The concern for general living conditions motivated some in the 1970s to advocate discarding the income-based measures of development altogether in favour of direct measurement of the extent to which the basic needs of the population were being met. A major effort in this direction was the development of a composite 'Physical Quality of Life Index' [PQLI]. This index was based on a country's life expectancy, infant mortality rate, and literacy rate [Morris 1979].

The latest attempt to construct a measure of development that focuses on human development is the development of the HDI undertaken by UNDP in its annual series of HDRs, initiated in 1990. The HDRs have since featured the construction and refinement over time of the HDI.

The new human development approach seeks to 'put people back at the centre of development' [HDR 1995, p.11]. The HDI is basically devised as a way of indicating the degree of achievement of the goals of this approach. It is a summary, not a comprehensive measure of human development and the search for further methodological and data refinements to the HDI continues [HDR 2001].

The human development accounting presents a pluralist conception of progress in the exercise of development evaluation. In defining what the human development accounting does, Sen indicates:

'Rather than concentrating only on some solitary and traditional measure of economic progress (such as the gross national product per head), human development accounting involves a systematic examination of a wealth of information about how human beings in each society live (including their state of education and health care, among other variables)' [Sen 2000, p. 18].

The HDI has, however, not escaped criticism. Streeten 2000 questions not only the arbitrariness of weights of the three components, but also what is included and what is excluded. Others contend that the HDI reflects its aims imperfectly and does not capture the rich content of the human development concept, leaving out other important aspects such as freedom and human rights, autonomy and self reliance, independence and sense of community, environmental concerns, etc. [See, for example, Fergany 2002, and Dasgupta 1995]. Hicks 1997 argues that the HDI in its present form is an average measure, which does not attend to distribution inequalities, masking a series of disparities and inequalities within countries.

---

construction of a composite social development index. Camp and Spiedal 1987 constructed a single index of 'living conditions', the International Human Suffering Index, comprising 10 measures of human welfare including income, infant mortality, nutrition, adult literacy and personal freedom.

To address many of its sharpest criticisms, the HDI has constantly been modified and has thus evolved over the twelve issues of the HDR. However, there remains much room for further improvement of the index. Despite its limitations, the appeal of the HDI is in its bringing people to the fore of economic discussion. It makes the impact of economic policy clear and unavoidable. It highlights efforts to distribute wealth equitably, to improve health and to provide education [Sanchez 2000].

The HDI may not be an adequate measure in the sense that the concept of human development is much deeper and richer than what can be captured in any composite index or even by a detailed set of statistical indicators. However, 'the real merit of the human development approach lies in the plural attention it brings to bear on developmental evaluation, not in the aggregative measures it presents as an aid to digestion of diverse statistics' [Sen 2000, p.22].

## 2.1. Ethics and Development

Following a period of indifference with ethics, a growing number of economists is now working to restore the importance of values and ethics to the economic problem faced by human beings<sup>5</sup>. Development ethics borrows freely from the works of economists, political scientists, and specialists of other disciplines. It presents an eclectic approach to development issues. Goulet 1995 observes:

'Ethics places each discipline's concept of development in a broad framework wherein development ultimately means the quality of life and the progress of societies toward values expressed in various cultures...its ultimate goal is to provide all humans with the opportunity to live full human lives' [p. 7].

Philosophers, economists and political leaders have long emphasised human well-being as the purpose, and the end, of development; and all moral views assign an important place to conceptions of individual good, welfare, or well-being. For example, John Rawl in his *A Theory of Justice* proposes that well being be measured by an index of 'primary social goods' such as education or income, which are basic necessities. Sen<sup>6</sup>, however, criticises the primary-goods approach because it focuses on the external means that permit people to attain various functionings rather than on 'capabilities' or abilities to achieve functionings. Sen's alternative is to define well being in terms of the set of 'functionings' a person achieves. He defines capability as the ability to achieve a certain sort of functioning. For example, literacy is a capability while reading is a 'functioning.' People may view capabilities for their own sake as well as the functioning they permit. Sen maintains that the most important thematic deficiency of traditional development economics is its concentration on national product, aggregate income, and total supply of particular goods rather than on the 'entitlements' of people and the 'capabilities' that these entitlements generate; entitlement referring to the set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she has. The case for a 'capabilities-oriented' rather than a 'goods-oriented' social welfare function is also argued by Griffin and Knight 1989.

---

<sup>5</sup> Sen, Power, Hausman and McPherson lead the way.

<sup>6</sup> See Sen 1985, 1987a, 1987b, 1992.

Anand and Sen 2000 observe that this concern is not, in fact, different from that expressed in Adam Smith 1790. Adam Smith's concern with the ability of people to choose a reasonable life relates closely to the approach of human development, which concentrates on people's capabilities in some fields that are crucial for the quality of life. The approach also has clear Aristotelian connections. In Aristotelian view, there is much focus on 'functionings' that people need for 'flourishing' as human beings.

Thus, development means widening the 'range of human choices' [HDR 1996]. Human development concept, by concentrating on choices, implies that people must influence the processes that shape their lives. They must participate in various decision-making processes, the implementation of those decisions, and their monitoring and adjustment to improve outcomes where necessary.

Goulet 1995 describes participation as an indispensable feature of all forms of development. He indicates that 'participation is best conceptualised as a special kind of moral incentive enabling hitherto excluded the non-elite to negotiate new packages of material incentives benefiting them' [p.97]. He argues that where the populace is actively involved in development decisions and actions, it is most likely that development will attend to basic human needs, job creation, respect for cultural integrity and diversity, etc. He further notes that if equity, respect for human rights and the empowerment of local populations in ways consonant with their values are also taken as development objectives, then a policy bias in favour of authentic participation correlates highly with genuine development. Ultimately, a vital connection exists between democracy and development [p.98]. Sen 1999 views the issue of participation in the context of 'enlarging freedom.' Sen's notion of development comprises a social and political process consisting of the progressive enlargement of human freedom and policies aimed at promoting economic development. Success in achieving this depends very much on the participation of its intended beneficiaries in the choice and execution of the policies by which it is promoted.

In Sen's view the enlargement of human freedom is both the principal end and an essential means of a society's development. He asserts that freedom is both instrumental to and constitutive of development. It is instrumental in the sense that free institutions are more likely than others to accomplish the material goals of development [such as reducing poverty and improving health care]. It is constitutive in the sense that development conceived as a progressive enlargement in the range of effective choice cannot succeed unless people are given opportunities to develop and exercise the capacity to choose. He further argues that the importance of establishing democratic institutions is enhanced by the urgency of meeting economic needs. This is because democracy empowers people to defend their most important interests, provides information to those in authority about the needs of the people, and influences the public understanding of development itself. He asserts that the solution of the problem of population growth lies in expanding the freedom of the people whose interest are most directly affected by over-frequent childbearing and child rearing. This calls for more freedom, not less. Famines, he argues, are not a product of absolute food shortages; rather, inequality has an important role in the development of famines. Nothing, he believes, is 'as important today as an adequate recognition of political, economic and social participation and leadership of women. This is indeed a crucial aspect of "development as freedom".' His concern is about human potential,

and how it can be liberated, both as a means for improved economic performance, and as the very purpose of economic and social activities.

## 2.2. Important Ethical Values

### *Equality*

Increasing per capita income, as an objective of development, may widen income inequalities and even may decrease the incomes of the poorest. This is against the idea of human equality, which has existed in a variety of moral and religious traditions and is still considered an integral part of any moral system [see, for example, Sen 1992]. Most, if not all, constructive moral theories are based on, or depend upon, some operative notion of equality. Rawls 1971 defends an equal basket of basic liberties for all, before moving to a just distribution of other primary goods. Dworkin 1981 argues for equality of resources; and Nozick 1974 defends an equal endowment of rights for all.

### *Liberty and Freedom*

Liberty is another important ethical value. Berlin 1969 distinguishes between negative and positive liberty, the former being liberty from interference and the freedom to act without deliberate negative social sanctions, and the latter being autonomy or self-determination. Sen's 'capabilities' provide a construal of a sort of positive freedom. Others have thought of positive liberty more in terms of the range and quality of alternatives open to an individual. Stigler 1978 argues on this basis that 'liberty' and 'wealth' are really synonymous, as both index the quality of options assessed in welfarist terms. According to Hausman and McPherson 1993, 'negative liberties are important because they help people get what they want. They promote welfare but also integrity, dignity and autonomy itself' [p. 694].

### *Justice*

Justice permeates aspects of discussion on aforementioned issues of equality, rights and liberty. It can be taken as an umbrella term incorporating all dimensions of evaluation of economic arrangements besides efficiency. There are a large number of principles of justice with which economic institutions and outcome are evaluated, for example, equality of opportunity, provision of basic needs and 'safety net' arrangements, etc.

### *Environmental Concern and Sustainable Development*

There can be no sound development ethics without environmental concern. Goulet 1995 affirms that the task of eliminating underdevelopment on the one hand and the concern for safeguarding nature on the other hand have spawned two ethical streams of protest. One is concerned with promoting economic justice and the other with protecting nature. He identifies pseudo development as the root of both problems with the only antidote being sustainable development. Sustainable development is accordingly seen as a 'working ethic' linking the concern for environmental responsibility with the diverse universal economic justice.



Contemporary concern for sustainable development is an authentic moral concern to the degree that it poses an alternative to the dominant model of modern development. Economic growth fuelled by an excessive exploitation of nature would necessarily lead to environmental degradation. Kothari 1998 argues that the current model of development destroys nature's wealth, and hence is non-sustainable. He identifies certain primary criteria based on a holistic view of development, with an emphasis on the struggle against injustice and apartheid, and on the importance of local conditions and the value of diversity.

Thus, development is at present widely employed as a multi-dimensional, normative concept. It typically represents a vision of societal progress, with emphasis on comfort, peace, environmental balance, and other major parts of a good life. In other words, development relates to general human flourishing in conditions of peace, justice and care for the environment, and not merely economic growth.

### 2.3. Islamic Ethics

Development from a human-development perspective is hardly new. The idea of better human lives as the real end of all human activities was a recurring theme in the writings of most of the early Muslim philosophers, e.g., Ibn Khaldun and Ghazali.

The Islamic holistic concept of development adopts a more inclusive approach to life than merely focusing on its material aspects. Islam views life as an organic whole in which the temporal and the eternal, material and spiritual behaviour are not separated from each other but treated as aspects of the same human behaviour. Development in Islam involves the optimisation of human well being in all these aspects.

The emergence of a consensus on the holistic nature of development, embracing market and non-market, physical and non-physical, material and non-material elements draws ever closer to the Islamic multidimensional approach. It does appear as if a more comprehensive concept of development is gaining ground among development theorists as well as policy-makers. Indeed, there seem to be developing a convergence of thoughts between the multidimensional Islamic concepts of development that have been put forward by Islamic economists in recent years and contemporary development economics.

The Islamic concept of human development is no different from that adopted in the HDRs where human development is seen as encompassing several dimensions. Further, an analogy could be drawn between the Islamic multidimensional development approach and Sen's conception of development, in which the well being of humans is also placed at the centre stage. In his critique of the orthodox view that the only reliable measure of the success of development policies is the rate of growth of per capita real income, he maintains that it is not income *per se*, but what matters most is what people can accomplish with their incomes. The focus should be increasing people's abilities to achieve the objectives that give meaning to their lives. He stresses particularly the accessibility of social goods, and argues that the focus should be on the factors that influence the scope of people's capabilities to function effectively.

Sen's 'capability approach' can very well fit into the Islamic framework. He sees development as improvement in the range of effective human choices, and the success of the development process depends on the participation of its intended beneficiaries in the choice and execution of the policies by which it is promoted. In another perspective, this is what Sen views as the enlargement of human freedom, which he affirms, is both the principal end and an essential means of a society's development [Sen 1999].

### 2.3.1. Maqasid al-Shariah - The Objectives of Shariah

The concept of well being in Islam can be captured and discussed within the framework of Maqasid al-Shariah [the Objectives of the Shariah]. In defining Maqasid al-Shariah, Chapra 2000 quotes the medieval Islamic philosopher, Ghazali (d.505/111) as follows:

‘The objective of the Shariah is to promote the well-being of all mankind, which lies in safeguarding their faith, their human self, their intellect, their posterity and their wealth. Whatever ensures the safeguard of these five serves public interest and is desirable’ [p.118].

In keeping with the goal of a Muslim society to strive to reach the ideal, the enrichment of faith, self, intellect, posterity and wealth becomes the focus of all human endeavours. The human being itself becomes the end as well as the means. In aiming to preserve these goals, it is possible to create the balanced satisfaction of all the various needs of human life. These goals cover the physical as well as the moral, psychological and intellectual needs of present and future generations. Thus, keeping the Maqasid in view helps provide a more meaningful framework to economic analysis.

#### *The Role of Faith*

Faith provides the worldview, which tends to influence the whole human personality – his behaviour, life-style, tastes and preferences, and attitude towards other human beings, resources and the environment. Chapra 2000 points out that the essence of faith in economic analysis is not so much its transcendental aspects, but rather the impact of its worldview, values and institutions on individuals and society and through them on economic variables. Faith induces individuals to pursue their self-interest within the bounds of social interest in situation where there is a conflict between self-interest and social interest. Faith accomplishes this task by giving self-interest a longer-term perspective- stretching it beyond the span of this world to the Hereafter. Faith also aims at creating an enabling environment that is conducive to the strengthening of family and social solidarity, and the promotion of mutual care and cooperation among individuals.

Recognition of the role of faith can be glimpsed in Wilber and Jameson 1980. They observe that ‘...there is no substitute for an internalised moral law that directs persons to seek their self-interests only in ‘fair’ ways.’ [p.473]. They argue that the assumption that self-interest in a competitive environment is sufficient to yield the common good is an illusion. Individual aggrandisement, they observe, is inhibited by a deeply ingrained moral sense, one often based on religious convictions.

### *Self, Intellect, Posterity and Wealth*

Enrichment of the human self involves fostering inner happiness and contentment among individuals and harmony in society and a consideration of all that affect the development of total human potential and enrichment of life on earth, not only of the present generation but also the future. In safeguarding the intellect, there is a consideration of the kind of mental and material states that contribute to intellectual, educational, and technological advance and to family and social harmony in conformity with the Maqasid. Preservation and enrichment of posterity involve an examination of those aspects of the behaviour of the present generation that affect the health and well being of future generations. This can be achieved through institution of family, social harmony, savings and investment, borrowing and debt-servicing, stopping the depletion of non-renewable natural resources, environmental pollution and by creating overall ecological balance [Chapra 2000, p.125].

Thus, there is no inherent conflict between Islamic values and values required for development. Islam advocates justice and fairness, fulfilment of basic needs, promotion of knowledge and understanding, protection of human rights and family values. All these are, in fact, embedded in the Islamic notion of development.

### 3. Introduction of Ethics into the HDI

The HDI monitors progress in human development. By focusing on areas beyond income and treating income as a proxy for a decent standard of living, it provides a more comprehensive picture of human life than income does [UNDP 1999]. It conceptualises human development as the expansion of people's choices, which is critically linked to two issues: capabilities and functionings on the one hand, and opportunities on the other hand. As mentioned above, the functionings of a person refer to the valuable things the person can do or be [such as being well nourished, living a long time and taking part in the community]. The capability of a person stands for the different combinations of functionings the person can achieve; it reflects the freedom to achieve functionings [Sen 1983, 1992].

Enlarging choices for a person implies formation or enhancement of capabilities, which can be done through the development of human resources: good health and nutrition, education and skill training, etc. However, capabilities cannot be used unless opportunities exist to use them. In other words, human choices are enlarged when people acquire more capabilities and enjoy more opportunities to use those capabilities [HDR 1990].

Given this underlying notion of expansion of choices, the HDI is designed to indicate the level of attainment of some of those choices. In principle, human choices and their outcomes can be infinite and change over time, however, the three essential ones at all levels of development are for people to lead a long and healthy life, to acquire knowledge and to have access to resources needed for a decent standard of living. It is argued that if these essentials are not available, many other opportunities remain inaccessible.

Seen in this light, the HDI encompasses the three important spheres of socio-economic life, each of which captures a different dimension of economic choices for well being.

These are longevity/health [reflected by life expectancy at birth], education [reflected by literacy], and command over resources [reflected by GDP per capita in PPP US\$].

### *Longevity/Health*

Life expectancy at birth, which is the variable chosen to represent longevity and health, indicates the extent to which persons of a country are able to live a long and healthy life. Presumably persons living in societies with higher life expectancies tend to be in better health. To live a significant and healthy life span is seen as both a necessary means to other ends and as a good in itself. This indicator points to the more essential element of this dimension - the expansion of 'life opportunity.'

### *Education*

The education variable is designed to indicate people's choices to acquire knowledge. It includes adult literacy rates [weighted two-thirds] and the combined enrolment ratios for students at all levels of education [weighted one-third]. Adult literacy is a 'stock' concept, indicating what percentage of adults has acquired some minimal educational functioning [whether or not acquired from formal schooling]. In contrast, school enrolment is technically a 'flow' concept, reflecting what proportion of the [school age] population is currently in school. Together the two measures are intended to point to the more essential aspect of the dimension of education - to expand 'knowledge opportunity'. This knowledge opportunity can be seen as both a good in itself and as an instrument toward other meaningful ends. That is, knowledge attained in schooling is part of a well-lived life and in itself is a crucial form of social participation. At the same time, it also expands choices of vocation and community involvement.

### *Command over Resources*

The use of 'command over resources' in the HDI is strictly to reflect something of other basic capabilities not already incorporated in the measures of longevity and education. Both longevity and education are clearly valuable as aspects of a good life, and also valued as constituents of the capability to do other things. In contrast, command over resources is only an instrument for other ends. Though income is just one way of viewing this command, the realisation that there are many important capabilities that are critically dependent on one's economic circumstances justifies its inclusion in the HDI.

Indeed command over resources needed for a decent living poses the most difficulty to measure [out of the three dimensions incorporated in the HDI] and invariably GDP per capita in PPP US\$ was chosen as the income indicator to represent this dimension.

The reasoning behind the choice is summarised in the HDR 1990 in the following words:

'The third key component of human development – command over resources needed for a decent living – is perhaps the most difficult to measure simply. It requires data on access to land, credit, income and other resources. But given the scarce data on many of these variables, we must for the time being make the best use of an income indicator. The most readily available income indicator - per capita income - has wide national coverage. But the presence

of non-tradable goods and services and the distortion from exchange rate anomalies, tariffs and taxes make per capita income data in nominal prices not very useful for international comparisons. Such data can, however, be improved by using purchasing-power-adjusted real GDP per capita figures, which provide better approximations of the relative power to buy commodities and to gain command over resources for a decent living standard' [p. 12].

Furthermore, in calculating the HDI, the income indicator is adjusted to reflect the diminishing returns to transforming income into human capabilities. This is because achieving a respectable level of human development does not require unlimited income. Accordingly, this aspect was taken into account by using the logarithm of real GDP per capita for the income indicator. This discounting of income beyond the poverty line [i.e. world average per capita income] was designed to place emphasis on the basic income needed to acquire the goods and services required to meet a decent living standard including things such as food, clothing and shelter. In the light of this adjustment to the income variable, this indicator of the HDI can be seen to reflect 'basic-commodity opportunity.'

Human development is inextricably linked with freedom. It emphasises on enhancement of human capabilities, which reflects the freedom to achieve different things that people value. In this sense, human development can be viewed as freedom. In line with what Sen 1992 termed 'effective freedoms', the HDI while measuring achievements in basic commodity, knowledge and life opportunities reflects a freedom from illiteracy and freedom from material deprivation.

The HDI as it is currently constructed is determined for each country by combining these variables from each of the three dimensions as discussed above.

The HDI has been evolving, and its methodology has been refined over time. For instance, until 1999, in calculating the HDI, income above the cut-off point of world average per capita income was discounted using a drastic discounting formula. In the current methodology this discounting has been made more gradual by taking the logarithm of income throughout. This review of the treatment of income in the HDI was done, based on the work of Anand and Sen 1999.

The 1999 HDR acknowledges the fact that the composite indices of human development do not by themselves provide a comprehensive profile of human development in a country. To gain a complete picture, these indices must be supplemented with an array of other indicators of human development, also reported in the HDRs.

### 3.1. Human Development Index - Introducing Ethics.

We propose five more dimensions to the three-pronged HDI. These include gender empowerment [as calculated in HDRs], environmental degradation [reflected by the carbon dioxide emissions per capita], civil and political liberties [as reflected by the freedom index], family values [reflected by the family value index] and religious influence [reflected by the faith index].

The proposed indicators are universally valued functions as well as developmental outcomes. Structurally, the E-HDI consists of the three fundamental human capabilities: Living a long and healthy life, knowledge acquisition through education and having a decent standard of living. This is the irreducible core of human development. The E-HDI divides it into two categories. First is the materialistic one relating to satisfaction of human needs as reflected in the HDI's quantitative measures of income, education and health, and the second is a qualitative one in the sense of influence of religion, family values, participation, democracy, freedom and environmental concerns. The rationale for inclusion of each new dimension/indicator is reviewed hereunder.

A freedom index is incorporated to express enjoyment of civil and political liberties, a universally sought objective. The indicator is culled from the normalised Freedom indices of each country indicated in the UNDP Arab Human Development Report [AHDR] 2002 in the construction of an Alternative Human Development Index [AHDHI]. This was derived from the Freedom House assessment of the state of freedoms in countries and regions of the world.<sup>7</sup> The assessment takes the form of a numerical scale measuring the extent of availability of a broad range of political and civil rights and freedoms enjoyed in reality.

Carbon dioxide emissions per-capita [metric tons], defined as a penalty is used as an indicator of damage to the environment. There are other indicators of environmental degradation that might have been considered, for example, the average annual rate of deforestation. However since this may not apply to all regions of the world [e.g., the desert area] and for ease of a world wide comparison, the carbon dioxide emissions per capita is considered singly as a measure of environmental degradation.

Considering the importance of a stable family to the well being of an individual and society at large, the divorce rate and average age at first marriage is considered as indicators of the importance of the institution of marriage in a given society. The divorce rate being a negative indicator while average age of marriage is a positive indicator. The basic premise is that the higher the divorce rate in a given society the less stable is the family institution in that society; and the earlier people get married in a given society, the more the importance of the institution of marriage to that society.

As already discussed, religious morals play an important role in the moulding of human beings within a society. The impact of a religious worldview, values and institutions on individuals and society and invariably on the developmental process

---

<sup>7</sup> Freedom House is an American non-profit organisation, which publishes annual assessment of the state of freedoms in countries and regions of the world since 1972/73.

cannot be overemphasised. It forms the bedrock and creates an enabling environment that is conducive to human well being in particular, and development in general. This study looks at the influence of religion in each country as it impacts on the government, judicial and legal system, political parties and constitution of each country.

In conclusion, the variables proposed for consideration in the E-HDI is considered within the Maqasid al-Shariah framework; keeping the five fundamentals of the Maqasid al-Shariah in view, are as follows:

<b>Maqasid al-Shariah</b>	<b>Indicator Proposed</b>
Preservation of life	Life expectancy index
Preservation of intellect	Education index
Preservation of wealth	Income index [adjusted for distribution inequality]
Preservation of posterity	[a] Family value index [b] Carbon dioxide emission, a measure of environmental degradation
Preservation of faith	Faith index

## 4. Methodology

We propose to include the following indicators in the construction of the E-HDI:

Life expectancy Index  
 Education Index  
 GDP Index  
 GEM Index  
 Carbon Dioxide emissions  
 Freedom Index  
 Family value Index  
 Faith Index

Data limitations force us to exclude GEM index for which no reliable data is available. In the absence of data on the Gini index for 57 countries, 22 of which being the OIC member countries, we are unable to adjust the GDP index for inequality distribution. In the absence of sufficient data on divorce rate and the singulate mean age at marriage<sup>8</sup>, fertility rate should serve as proxy for family value. While not being exactly the most appropriate measure, it gives some form of an indication of family value - the premise being, the higher a society's fertility rate [births per woman] the more the importance of family value in that society.

<sup>8</sup> There are no data on the divorce rate for 85 countries [inclusive of 20 OIC member countries], similarly there is a dearth of data on the singulate mean age at marriage [female and male] for 79 [inclusive of 21 OIC member] and 85 [inclusive of 28 OIC member] countries respectively.

Data on freedom score is also missing for some countries for which we use estimates of freedom score of a country with similar civil and political condition as proxy [see details in Appendix 2].

In total 46 of the 173 countries have had to be excluded for non-availability of data in one or more of the seven considered indicators [see details of countries excluded in Appendix 1]. In other words, the E-HDI is based on 127 countries in the first instance with a focus on 52 OIC countries.

#### 4.1. Calculating the Life Expectancy and Education Indices

The indices of life expectancy and education as calculated in the HDR 2002 are adopted. To calculate these dimension indices, minimum and maximum values are chosen for each underlying indicator. Performance in each dimension is expressed as a value between 0 and 1 by applying the following formula:

$$\text{Dimension Index} = \frac{\text{Actual value} - \text{Minimum value}}{\text{Maximum value} - \text{Minimum value}}$$

The life expectancy index measures the relative achievement of a country in life expectancy while the education index measures a country's relative achievement in both adult literacy and combined primary, secondary and tertiary gross enrolment.

For the education index, first an index for adult literacy and one for combined gross enrolment are calculated. Then these two indices are combined to create the education index, with two-thirds weight given to adult literacy and one-third weight to combined gross enrolment.

We adopt the GDP index as calculated in the HDR 2002. The GDP index is calculated using adjusted GDP per capita [PPP US\$], with income serving as a surrogate for all the dimensions of human development not reflected in a long and healthy life and in knowledge. Income is adjusted because achieving a respectable level of human development does not require unlimited income.

The carbon dioxide emissions per capita data are culled from the HDR 2002. This is a negative measure. The higher the value, the worse the environmental degradation for a given country.

The freedom index as used in the AHDR 2002 is adopted for use in the E-HDI. Maximum potential for each country is standardised, as was the minimum potential. Consequently each country's achievement on the freedom score is normalised on a scale of 0 to 1, expressing absence of freedoms and complete enjoyment of freedom, respectively.

As discussed above, this study considers the fertility rate [births per woman] as a proxy indicator of family value. For some form of consistency with the method adopted by the HDI, these values are normalised and performance in this dimension is expressed as a value between 0 and 1. The index is calculated for each country based on the following formula:



$$\text{Family Value Index} = \frac{\text{Actual fertility rate} - \text{Minimum value}}{\text{Maximum value} - \text{Minimum value}}$$

High family value is expressed as 1, while the other end of the spectrum is low family value expressed as 0.

The religious influence on a country is gauged using a simple scoring system. The influence of religion on each of the following three factors are scored on a scale of 0-4:

1. **Visibility of religion/s:** Presence of a religion or religions in the country; the presence of a dominant religion, which influences the creation of the country and forms the *raison d'être* of the country.
2. **Legal system:** the influence of religion in the judiciary - the civil, criminal and high courts.
3. **Government:** Influence of religion in government; presence of religiously motivated political parties and/or pressure groups and the influence of religion in the country's constitution.

The minimum possible combined scores for a country is 0 while the maximum possible combined score is 12. A simple average is found for each country's total score, which places its final score between 0 and 4. Interpretation of scores is as follows:

Scores	Religious Influence
Between 0 and 1	Low - Secular state
Between 1+ and 3	Moderate
Between 3+ and 4	High

The seven indicators are composed into the E-HDI using a flexible yet robust method. The method used is the Borda rule.<sup>9</sup> This rule provides a method of rank-order scoring. The procedure awards each alternatives [countries in this case] a point equal to its rank in each criterion of ranking. The criteria used here are: life expectancy index, education index, GDP index, carbon dioxide emission, freedom index, family value index and faith index. We then add each alternative's scores to obtain its aggregate score, before ranking alternative's score on the basis of their aggregate scores [i.e. the rank sum]. This produces a complete ordering of alternatives on the indicators used and, hence, is a valid social welfare functions [Dasgupta, 1993].

<sup>9</sup> A technique for which there are precedence; see AHDR 2002; see Dasgupta (1993).

## 5. Data Analysis and Findings

Given that only 127 countries are considered in the construction of the E-HDI as against the 173 ranked by the HDI, each country's rank on the HDI had to be reshuffled accordingly but in the same progression relative to others. In other words, the HDI rank of an individual country in this study does not have to tally with its rank in the HDR. An individual country's E-HDI rank is based on the Borda ranking rule. For both the HDI and the E-HDI rank, a higher value in rank represents a worse human development position.

As mentioned earlier, apart from the faith index [which we have constructed using methodology stated above], we have relied on the data given in the HDRs and some other sources. The constructed E-HDI is reported in Table 2. The first column presents the ranking of countries on the basis of the E-HDI rank while the next column list the countries on the basis of their HDI rank. The remaining seven columns present country listing on the basis of their ranks in each of the seven constituents of the E-HDI.

The E-HDI rank is sum of the scores for each of the seven constituents, assigned from the best score of 127 to the worse score of 1 in each of the indicators. With a sample of 127 countries [and 7 indicators], the maximum possible score for the best-performing country is 887 [refer to Table 3].

Sweden comes first by the E-HDI rank [as against Norway in the HDI rank], followed closely by Canada, Ireland and Austria. Tables 2, 3, 4A and 4B reveal that a large proportion of countries ranked in the first quartile of the E-HDI, rank and score highly in the freedom scores<sup>10</sup>. They also rank and score highly in the life expectancy index, education index and GDP index, but are penalised for high carbon dioxide emission per capita and low fertility rate [births per woman]. Table 4B shows that this observation holds true in the HDI rank as well<sup>11</sup>.

A number of countries witness an improved rank in the E-HDI compared to their HDI rank. For instance, Portugal, Malta and Morocco rank 23, 24 and 30 on the HDI, respectively, as compared to their respective ranks of 11, 7 and 19 in the E-HDI rank. On the other hand, others witness a marked deterioration in rank from the HDI to the E-HDI. Japan for example, deteriorates in rank from 7 in the HDI to 31 in the E-HDI. This is attributable to its low rankings in the carbon dioxide emission, family value index and the faith index.

Another case in point is the United Kingdom, which ranks 11 in the HDI with a deterioration in rank to 20 in the E-HDI. It is observed that the UK, though highly ranked in the life expectancy index, education index and GDP index, is penalised for its high carbon dioxide emission of 9.2 metric tons per capita, its low family value index [derived from its low fertility rate of 1.6 births per woman] and its comparatively low faith index of 1.17. Similarly, the Netherlands, which ranks 6 in the HDI, ranks 28 in the E-HDI. Its high carbon dioxide emission of 10.5 metric ton per capita, low fertility rate of 1.5 births per woman, and very low faith index of 0.63, affect its E-HDI rank.

---

<sup>10</sup> With the notable exception of Maldives which has a low freedom score index of 0.18.

<sup>11</sup> Except for Singapore, Brunei Darussalam and Bahrain, with low freedom scores of 0.33, 0.30 and 0.35 respectively.

Incidentally, the countries ranked at the low rung in the HDI rank, also rank quite low in the E-HDI. These include countries like Gambia, Cote d'Ivoire, Sierra Leone, Guinea Bissau, Burkina Faso and Chad. China whose rank is 71 in HDI, ranks 126 [i.e. last but one] in the E-HDI. This marked deterioration in rank is traceable to its poor rank in the faith index. In fact, it ranks last in this index as the Chinese population is officially atheist. Also, China's freedom score is quite low ranking 122 on the freedom score rank.

It is useful to get a feel for the relationship between the HDI rank, the E-HDI rank and rankings based on each of its seven constituents. In order to examine their underlying statistical relationship, we look at rank correlation co-efficients. The table below presents the rank correlation coefficient for each of the indicators.

**Rank Correlation Matrix of Constituents of E-HDI**

	E-HDI	HDI	LE	EDU	GDP	CO <sub>2</sub>	FREE	FAMI
HDI	.7841							
LE	.7878	.9431						
EDU	.6966	.8981	.7976					
GDP	.7281	.9335	.8459	.7721				
CO <sub>2</sub>	-.5485	-.8392	-.7800	-.7059	-.8423			
FREE	.7183	.5927	.5475	.5895	.5466	-.3976		
FAMI	-.5736	-.8415	-.8220	-.8377	-.7294	.6736	-.5843	
FAITH	.3912	.0938	.1788	-.0133	.0783	-.1608	-.1154	-.0188

- E-HDI Ethics-augmented HDI rank
- HDI HDI rank
- LE Life expectancy index rank
- EDU Education index rank
- GDP GDP index rank
- CO<sub>2</sub> Carbon dioxide emission (per metric tons) rank
- FREE Freedom score rank
- FAMI Family index rank
- FAITH Faith index rank

We observe a high positive relationship of 0.78 between the HDI and the E-HDI, and between the E-HDI and the core development constituents of LE (0.79), EDU (0.70) and GDP (0.73). There is also a high positive relationship of 0.72 between E-HDI and FREE. Surprisingly, however, there are low, negative relationship between E-HDI and its other constituents of CO<sub>2</sub> and FAMI Of – 0.55 and – 0.57 respectively and no significant relationship with the FAITH.

### 5.1. The OIC Member Countries

Table 5A and 5B rank the OIC countries on the E-HDI scale. Of the 52 OIC member countries, Maldives tops the list by the E-HDI rank, followed by Jordan, Brunei Darussalam, Algeria and Oman, while Kuwait and Saudi Arabia came 6 and 7 on the list respectively. Going by the HDI, Brunei-Darussalam, Bahrain, Kuwait, United Arab Emirates and Qatar rank 1 to 5 respectively. It is observed that Saudi Arabia and Brunei Darussalam do not witness a significant change in rank between the HDI and E-HDI ranks. This is not the case for a couple of other countries whose ranks either improve or worsen from the HDI to the E-HDI. For instance, Maldives, which tops the list by the E-HDI rank, is 13 by the HDI rank. Similarly, Jordan, which is second on the

E-HDI rank, is 21 on the HDI rank. For both countries, this improved ranking in the E-HDI is attributable not only to their high ranks in the life expectancy, education and GDP indices but also their equally high ranks in the family index and low carbon dioxide emission per capita.

Algeria's position in the E-HDI of 4 as against its HDI position of 24 can be directly traceable to its high family index [given a very high fertility rate of 7.2 per woman]. Comoros' rank improves from an HDI rank of 32 to an E-HDI rank of 8 [which incidentally ties with United Arab Emirates]. We observe here that though Comoros has an average ranking in the life expectancy, education and GDP indices, its bare minimum carbon dioxide emission of 0.1 metric tons per capita and its high fertility rate of 5 births per woman places it in an improved ranking in the E-HDI. Similarly Pakistan's improved rank in the E-HDI of 13 [as against its HDI rank of 33] is traceable to its low carbon dioxide emission [0.7 metric tons per capita], high faith index [2.5] and high fertility rate [5.1 births per woman].

On the contrary, other countries witnessing a worsening in rank from the HDI to the E-HDI include Bahrain, Qatar and United Arab Emirates with HDI ranks of 2, 5 and 4, worsening to E-HDI ranks of 11, 10 and 8, respectively. In spite of these countries' high ranks in the life expectancy, education and GDP indices, they are penalised for extremely high carbon dioxide emission. In fact, Qatar's carbon dioxide emission of 80.9 metric ton per capita is the highest in the world, followed by United Arab Emirates' and Bahrain's of 37.5 and 31.5 metric tons per capita respectively. The three countries' low freedom scores, average performances in the family value index [2.3 to 3.3 births per woman] and average performances in the faith index, go to depress their rankings in the E-HDI.

Libya, Malaysia, Lebanon and Azerbaijan suffer the same fate, i.e., deterioration in their HDI ranks of 7, 6, 10 and 16 to E-HDI ranks of 15, 14, 25 and 34, respectively. These countries are characterised by low freedom scores, [Libya has zero freedom score], comparatively low faith index [all have less than 2] and low fertility rate [between 1.5 to 3.3 births per women].

Other countries maintaining just about the same rank in the HDI and E-HDI include Iran, Brunei Darussalam, Tunisia, Saudi Arabia and Turkey.

Gambia is at the bottom of the rung, with other last ten including Cote d'Ivoire, Sierra Leone, Guinea-Bissau, Burkina Faso, Togo, Chad, Cameroon, Niger and Uganda. Common characteristics of all of these countries are their low ranks in all but the family value index and Carbon dioxide emission. These countries rank highly in the family value index given their very high fertility rate [amongst the highest in the world - between 4.5 to 8 births per woman] and have very minimal carbon dioxide emission.

A closer scrutiny of the OIC member countries' rank in each of the four indicators used in augmenting the HDI [apart from HDI constituent indicators of life expectancy, education and GDP indices], would aid a further understanding of each country's position in the E-HDI rank. Country rankings in each of the indicators of carbon dioxide emission, freedom scores, family value and faith indices are therefore presented in tables 6A to 6D.

As indicated in table 6A, six OIC member countries record high levels of carbon dioxide emission. In fact, Qatar, United Arab Emirates, Bahrain and Kuwait rank the highest world wide in that order. Brunei Darussalam and Saudi Arabia also rank in the high echelon. On the other hand, other OIC member countries rank amongst the countries with the barest minimum carbon dioxide emission in the world, for example, Chad emits none and tops the world list in this indicator, Sierra Leone, Mozambique, Sudan, Cameroon, and Niger all barely emit any carbon dioxide. We also observe that almost all the OIC member countries with less than 1 carbon dioxide emission per metric ton have low HDI and E-HDI ranks and are mostly African countries with the exception of Albania and Comoros. Whereas, the OIC countries with the highest carbon dioxide emission [above 5 metric tons per capita] have comparatively higher HDI and E-HDI rank and are mostly Arab states [with the exception of Turkmenistan, Azerbaijan and Malaysia]. Indeed the first five countries with the highest emissions are Arab states.

As indicated in Table 6B, we observe that no OIC country has an index of 1 in the freedom score. In fact, only 10 countries of the 52 [19%] have a freedom score index above 0.48. All the other 42 countries [81%] have low freedom score index ranging from 0 to 0.35.

From Table 6C, we observe that the OIC member countries include countries with the highest fertility rates in the world. Niger, Yemen, Algeria, Uganda, Burkina Faso, Sierra Leone and Chad top the world list in fertility rate in that order. Overall, 22 of the 52 countries have fertility rates of 5 to 8 births per woman [42%], 11 have fertility rates of 3 to 5 births per woman [21%] and 18 countries have fertility rates of 2 to 3 births per woman [35%]. Only one country, Azerbaijan, has fertility below 2 births per woman.

Table 6D indicates that only 2 countries can be considered as highly religiously influenced - Saudi Arabia and Iran, both with a faith index of 3.67. Most of the other OIC member countries [39] fall under the 'moderate religious influence' category. 11 of them fall under the 'low religious influence' category. These are: Guinea Bissau, Togo, Mozambique, Benin, Cote d'Ivoire, Suriname, Sierra Leone, Chad, Cameroon, Uganda and Burkina Faso.

From the above analysis, we conclude that the OIC member countries do not really present an overly impressive performance in the ethics-based indicators added to the constituents of the HDI. Though the countries with the lowest environmental degradation are to be found amongst the OIC member countries, the first five countries with the highest carbon dioxide emission also feature prominently amongst the OIC member countries. The freedom scores rating for OIC member countries is generally low, with only 19% having an average score above 0.48 indicating the largely strained level of civil and political rights in most of these countries. Just as the countries with the highest fertility rates in the world are present amongst the OIC member countries, so also are the countries with the lowest fertility rates. Lastly, only 2 of the OIC member countries can be categorised as highly religiously influenced. The majority of the others fall under moderate to low religious influence with only 20 of the 52 countries having a faith index above 2.

## 6. Summary, Conclusions and Recommendations

This study has explored the contours of a new approach that could lead to a better measurement of human development, an approach that factors-in the importance of ethics in development. An E-HDI was considered within the framework of the Maqasid al-Shariah, which is basically concerned, with the promotion of human well being through the preservation of self, wealth, posterity intellect and faith.

Though the study set out to incorporate a number of ethics-based indicators in the index, data constraints compel the exclusion of some of the proposed indicators, namely, the measure of gender inequality, distribution inequality and family value were affected. We believe the inclusion of these would have made for a more useful and revealing index. Nevertheless, the constructed E-HDI is a step in the right direction. Significant differences in the HDI and the E-HDI rankings suggest that the E-HDI is an improvement over the existing measures of human welfare. Particularly, countries with high carbon dioxide emission, a measure of environmental degradation, fall in rank, so also countries with low fertility rate and low freedom and faith indices.

The E-HDI reveals that most countries of the world are secular countries with religion or faith playing a minimal role in the affairs of the state. The OIC member countries are no exception, majority of which are low to moderate religiously influenced countries.

Fertility rate [our proxy for family value in this study] correlates highly and negatively with the GDP index. The implication of this to human well being is open to further discussion. As earlier discussed, the study would rather incorporate the divorce rate and the singulate mean age at first marriage as determinants of family value in a society.

The absence of civil and political liberties feature very prominently amongst the OIC member countries. In a number of these countries, the absence of democracy based on participation, pluralism, separation between authorities, independence of the judiciary system, and free and honest periodic elections have formed an obstacle to the development process. This is not to deny achievements attained in the social, economic, productive, political and cultural spheres. Nevertheless, giving the democracy low priority has not helped to reinforce the necessary participation and unity needed between civic and political circles in these countries.

### 6.1. Recommendations for Further Research

A task for further research would be to improve quality of the existing data to make them internationally comparable, and to stimulate gathering of the relevant statistics. We have, for instance, used carbon dioxide emission in this study as a measure of environmental degradation, but that is not the only measure of environmental degradation. Deforestation, desertification, soil erosion, salination, silting and depletion of water supplies are other forms of environmental degradation on which adequate data do not exist.

If the objective of constructing an ethics-augmented human development index is to measure the level of human choices or assess opportunities, then it is desirable to

incorporate measures of distributional inequality not only in the income index but also in the other two core development dimensions of life expectancy and education indices. Inequality is an issue not just in income where it is arguably most severe but also in education and health, where inequalities are perhaps seen as more troubling.

This study has not relied on the cardinal magnitude of the data but has opted for an ordinal measure using an ordinal aggregator - the Borda Rule, hence it will be observed, that the study present only E-HDI ranking of countries. A further step is to actually calculate an Ethics-augmented Human Development Index for each country. This will make more sense, when data are available, reliable and comparable. In that case, it will also make sense and be possible to delineate categories for each dimension i.e. what constitute high, medium or low values for each dimension. In that instance, not only will country ranking relative to others be available, but also country's absolute index on the E-HDI.

Another area for further research is the exploration of the precise meaning of some of these indicators. For instance, the family value indicator we are constrained to use in this study [i.e. fertility rate] is admittedly mostly imperfect as a universally valid proxy for family value. Similarly, for environmental concerns, it may apply in different ways for the rich and poor countries. For the former it arises from wealth and from the latter from poverty. While the advanced countries may degrade the environment by ever-higher resource-intensive production, the poor country's demand for food and fuel of rapidly growing and poor populations leads to deforestation, desertification, soil erosion, salination, silting and depletion of water supplies. This leaves a dilemma of which measure of environment degradation to include in the E-HDI that will be all inclusive of the different forms of environmental degradation in the rich and poor countries. The measures for faith and family values present no less a dilemma.

## Appendix 1: List of Countries Excluded from the Study

1	Antigua and Barbuda	24	Lithuania
2	Belarus	25	Macedonia, TFYR
3	Belgium	26	Madagascar
4	Bhutan	27	Mali
5	Burundi	28	Moldova, Rep. of
6	Cambodia	29	Mongolia
7	Congo, Dem. Rep. Of the	30	Myanmar
8	Croatia	31	Namibia
9	Czech Republic	32	Papua New Guinea
10	Dominica	33	Russian Federation
11	Eritrea	34	Rwanda
12	Estonia	35	Saint Lucia
13	Ethiopia	36	São Tomé and Príncipe
14	Georgia	37	Seychelles
15	Germany	38	Slovakia
16	Grenada	39	Slovenia
17	Hong Kong, China (SAR)	40	South Africa
18	Iceland	41	ST. Kitts and Nevis
19	Israel	42	St. Vincent & the Grenadines
20	Jamaica	43	Tanzania, U. Rep. Of
21	Lao People's Dem. Rep.	44	Ukraine
22	Latvia	45	Vanuatu
23	Lesotho	46	Viet Nam



## Appendix 2: Estimated Freedom Scores

	<b>Countries without available data on freedom</b>	<b>Freedom score assigned</b>	<b>Country used as proxy</b>	<b>Proxy freedom score</b>	<b>Remarks / rationale</b>
1	Gabon	0.03	Cameroon	0.03	All are former French colonies with similar civil and political liberties; all recently embraced democracy in the early to late 1990s.
2	Chad	0.03	Cameroon	0.03	
3	Niger	0.03	Cameroon	0.03	
4	Guinea	0.03	Cameroon	0.03	
5	Sierra Leone	0.03	Gambia	0.03	Both Gambia and Sierra Leone are Anglophone countries with similar civil and political liberties Bahrain, Qatar and Kuwait are Arab states with monarchy type of government and similar civil and political liberties
6	Bahrain	0.35	Kuwait	0.35	
7	Qatar	0.35	Kuwait	0.35	
8	Brunei Darrusalam	0.03	Malaysia	0.33	Malaysia's civil and political condition is slightly better than Brunei Darrusalam's.
9	Libya	0	Syria	0	Both Libya and Syria have been under military regime since the 1960s.
10	Saudi Arabia	0.05			Monarchy type of government
11	Oman	0.25	Kuwait	0.35	Oman has less civil and political liberty compared to Kuwait
12	Kazakhstan	0.2	Algeria/Tunisia	0.18	These Central Asian countries, which were former Soviet Socialist countries have slightly better civil and political liberties than Algeria and Tunisia which have scores of 0.18
13	Uzbekistan	0.2	„		
14	Krygystan	0.2	„		
15	Turkmenistan	0.2	„		
16	Azerbaijan	0.2	„		
17	Albania	0.1			These countries have emerging democracy with restricted freedom
18	Uganda	0.1			
19	Yemen	0.05			Yemen only recently embraced democracy

### Appendix 3: Indicators Proposed But Excluded Due to Inadequacy of Data

	Country	Gini index <sup>a</sup>	GEM 1995 <sup>b</sup>	World Divorce rate <sup>c</sup>	Singulate Mean age at Marriage female <sup>d</sup>	Singulate Mean age at Marriage male <sup>d</sup>
1	Norway	25.80	0.75	2.20	N/A	N/A
2	Sweden	25.00	0.76	2.40	N/A	N/A
3	Canada	31.50	0.66	2.28	23	27
4	Belgium	28.70	0.48	2.60	25	28
5	Australia	35.20	0.57	2.60	27	29
6	United States	40.80	0.62	4.10	25	26
7	Iceland	N/A	N/A	1.90	30	32
8	Netherlands	32.60	0.63	2.10	28	31
9	Japan	24.80	0.44	1.92	27	30
10	Finland	25.60	0.72	2.70	24	26
11	Switzerland	33.10	0.51	2.80	27	30
12	France	32.70	0.43	2.00	28	30
13	United Kingdom	36.80	0.48	2.60	26	28
14	Denmark	24.70	0.68	2.70	30	32
15	Austria	31.00	0.61	2.40	26	29
16	Luxembourg	26.90	0.54	2.30	26	28
17	Germany	30.00	N/A	2.30	28	30
18	Ireland	35.90	0.47	N/A	28	29
19	New Zealand	N/A	0.64	2.65	27	29
20	Italy	27.30	0.59	0.60	27	30
21	Spain	32.50	0.45	0.90	26	28
22	Israel	38.10	N/A	1.56	N/A	N/A
23	Hong Kong, China (SAR)	N/A	N/A	1.96	N/A	N/A
24	Greece	32.70	0.34	0.90	25	29
25	Singapore	N/A	0.42	1.31	N/A	N/A
26	Cyprus	N/A	0.39	1.70	N/A	N/A
27	Korea, Rep. of	31.60	0.26	N/A	N/A	N/A
28	Portugal	35.60	0.44	1.90	23	26
29	Slovenia	28.40	N/A	1.10	26	29
30	Malta	N/A	0.33	N/A	22	26
31	Barbados	N/A	0.55	1.21	N/A	N/A
32	Brunei Darussalam	N/A	N/A	N/A	N/A	N/A
33	Czech Republic	25.40	N/A	0.72	23	26
34	Argentina	N/A	0.42	N/A	23	26
35	Hungary	24.40	0.51	2.40	24	27
36	Slovakia	19.50	N/A	1.70	21	24
37	Poland	31.60	0.43	1.10	23	26
38	Chile	56.60	0.40	0.42	23	26
39	Bahrain	N/A	N/A	1.31	26	28
40	Uruguay	42.30	0.36	2.01	23	25
41	Bahamas	N/A	0.53	1.37	27	29
42	Estonia	37.60	N/A	3.10	24	26
43	Costa Rica	45.90	0.47	2.04	N/A	N/A
44	Saint Kitts and Nevis	N/A	N/A	N/A	N/A	N/A
45	Kuwait	N/A	0.24	1.58	N/A	N/A
46	United Arab Emirates	N/A	0.24	0.87	N/A	N/A

47	Seychelles	29.00	N/A	N/A	N/A	N/A
48	Croatia	32.40	N/A	0.80	25	28
49	Lithuania	40.30	N/A	2.90	23	25
50	Trinidad and Tobago	N/A	0.53	1.00	N/A	N/A
51	Qatar	N/A	N/A	0.97	23	27
52	Antigua and Barbuda	N/A	N/A	N/A	N/A	N/A
53	Latvia	32.40	N/A	2.60	N/A	N/A
54	Mexico	53.10	0.40	0.48	N/A	N/A
55	Cuba	N/A	0.52	3.54	N/A	N/A
56	Belarus	21.70	N/A	4.30	N/A	N/A
57	Panama	48.50	0.43	0.65	N/A	N/A
58	Belize	N/A	0.37	0.58	N/A	N/A
59	Malaysia	49.20	0.38	N/A	N/A	N/A
60	Russian Federation	48.70	N/A	4.30	23	25
61	Dominica	N/A	N/A	1.17	N/A	N/A
62	Bulgaria	26.40	0.48	1.30	23	27
63	Romania	31.10	0.35	1.40	23	27
64	Libyan Arab Jamahiriya	N/A	N/A	0.24	N/A	N/A
65	Macedonia, TFYR	N/A	N/A	0.70	N/A	N/A
66	Saint Lucia	42.60	N/A	N/A	N/A	N/A
67	Mauritius	N/A	0.35	0.87	N/A	N/A
68	Colombia	57.10	0.44	N/A	23	26
69	Venezuela	49.50	0.39	0.79	N/A	N/A
70	Thailand	41.40	0.37	0.90	24	26
71	Saudi Arabia	N/A	N/A	N/A	22	26
72	Fiji	N/A	0.31	N/A	23	26
73	Brazil	60.70	0.36	0.60	N/A	N/A
74	Suriname	N/A	0.35	1.23	N/A	N/A
75	Lebanon	N/A	0.21	N/A	N/A	N/A
76	Armenia	44.40	N/A	0.30	23	27
77	Philippines	46.20	0.44	N/A	24	26
78	Oman	N/A	N/A	N/A	19	26
79	Kazakhstan	35.40	N/A	2.35	22	25
80	Ukraine	29.00	N/A	4.00	21	24
81	Georgia	37.10	N/A	0.40	N/A	N/A
82	Peru	46.20	0.40	N/A	N/A	N/A
83	Grenada	N/A	N/A	N/A	N/A	N/A
84	Maldives	N/A	0.29	10.97	N/A	N/A
85	Turkey	41.50	0.23	0.50	22	25
86	Jamaica	37.90	N/A	0.55	N/A	N/A
87	Turkmenistan	40.80	N/A	1.10	24	N/A
88	Azerbaijan	36.00	N/A	0.70	23	27
89	Sri Lanka	34.40	0.29	0.15	N/A	N/A
90	Paraguay	57.70	0.34	N/A	22	26
91	St. Vincent & the Grenadines	N/A	N/A	N/A	N/A	N/A
92	Albania	N/A	N/A	0.60	N/A	N/A
93	Ecuador	43.70	0.38	0.73	22	25
94	Dominican Republic	47.40	0.41	1.17	N/A	N/A
95	Uzbekistan	44.60	N/A	0.61	20	N/A
96	China	40.30	0.47	0.79	22	26
97	Tunisia	41.70	0.25	1.04	25	N/A
98	Iran, Islamic Rep. of	N/A	0.24	0.69	21	25
99	Jordan	36.40	0.23	1.22	25	28
100	Cape Verde	N/A	0.38	N/A	26	28
101	Samoa (Western)	N/A	0.31	N/A	N/A	N/A

102	Kyrgyzstan	34.60	N/A	1.30	22	25
103	Guyana	40.20	0.46	N/A	N/A	N/A
104	El Salvador	52.20	0.40	0.49	22	25
105	Moldova, Rep. of	40.60	N/A	2.70	22	24
106	Algeria	35.30	0.27	N/A	24	28
107	South Africa	59.30	N/A	0.81	27	29
108	Syrian Arab Republic	N/A	0.29	0.73	N/A	N/A
109	Viet Nam	36.10	N/A	N/A	23	24
110	Indonesia	31.70	0.36	N/A	N/A	N/A
111	Equatorial Guinea	N/A	0.25	N/A	N/A	N/A
112	Tajikistan	34.70	N/A	N/A	21	23
113	Mongolia	33.20	N/A	0.38	N/A	N/A
114	Bolivia	44.70	0.34	N/A	N/A	N/A
115	Egypt	28.90	0.24	1.18	22	26
116	Honduras	56.30	0.41	N/A	N/A	N/A
117	Gabon	N/A	N/A	N/A	N/A	N/A
118	Nicaragua	60.30	0.43	N/A	N/A	N/A
119	São Tomé and Príncipe	N/A	N/A	N/A	N/A	N/A
120	Guatemala	55.80	0.39	0.13	21	24
121	Solomon Islands	N/A	0.20	N/A	N/A	N/A
122	Namibia	N/A	N/A	N/A	N/A	N/A
123	Morocco	39.50	0.27	22.00	N/A	N/A
124	India	37.80	0.23	N/A	N/A	N/A
125	Swaziland	60.90	0.36	N/A	26	29
126	Botswana	N/A	0.41	N/A	27	31
127	Myanmar	N/A	N/A	N/A	N/A	N/A
128	Zimbabwe	50.10	0.40	N/A	21	26
129	Ghana	40.70	0.31	N/A	21	N/A
130	Cambodia	40.40	N/A	N/A	N/A	N/A
131	Vanuatu	N/A	N/A	N/A	N/A	N/A
132	Lesotho	56.00	N/A	N/A	N/A	N/A
133	Papua New Guinea	50.90	0.23	N/A	N/A	N/A
134	Kenya	44.90	N/A	N/A	21	N/A
135	Cameroon	47.70	0.34	N/A	20	N/A
136	Congo	N/A	0.21	N/A	N/A	N/A
137	Comoros	N/A	0.16	N/A	22	29
138	Pakistan	31.20	0.15	N/A	22	27
139	Sudan	N/A	0.22	N/A	24	N/A
140	Bhutan	N/A	N/A	N/A	N/A	N/A
141	Togo	N/A	0.18	N/A	20	N/A
142	Nepal	36.70	0.32	N/A	N/A	N/A
143	Lao People's Dem. Rep.	37.00	N/A	N/A	N/A	N/A
144	Yemen	33.40	N/A	N/A	19	23
145	Bangladesh	33.60	0.29	N/A	18	26
146	Haiti	N/A	0.35	N/A	24	27
147	Madagascar	38.10	N/A	N/A	N/A	N/A
148	Nigeria	50.60	0.20	N/A	N/A	N/A
149	Djibouti	N/A	0.13	N/A	19	27
150	Uganda	37.40	N/A	N/A	19	24
151	Tanzania, U. Rep. Of	38.20	N/A	N/A	N/A	N/A
152	Mauritania	37.30	0.16	N/A	23	30
153	Zambia	52.60	0.27	N/A	21	26
154	Senegal	41.30	0.27	N/A	20	29
155	Congo, Dem. Rep. Of the	N/A	N/A	N/A	N/A	N/A
156	Côte d'Ivoire	36.70	0.16	N/A	20	28
157	Eritrea	N/A	N/A	N/A	N/A	N/A

158	Benin	N/A	0.27	N/A	N/A	N/A
159	Guinea	40.30	N/A	N/A	N/A	N/A
160	Gambia	50.20	0.32	N/A	N/A	N/A
161	Angola	N/A	0.28	N/A	N/A	N/A
162	Rwanda	28.90	N/A	N/A	N/A	N/A
163	Malawi	N/A	0.26	N/A	N/A	24
164	Mali	50.50	0.24	N/A	19	28
165	Central African Republic	61.30	0.21	N/A	19	24
166	Chad	N/A	N/A	N/A	N/A	N/A
167	Guinea-Bissau	56.20	0.33	N/A	N/A	N/A
168	Ethiopia	40.00	0.21	N/A	N/A	N/A
169	Burkina Faso	55.10	0.28	N/A	19	28
170	Mozambique	39.60	0.35	N/A	N/A	N/A
171	Burundi	42.50	0.34	N/A	23	26
172	Niger	50.50	N/A	N/A	17	23
173	Sierra Leone	62.90	N/A	N/A	18	27
N/A :	Data not available	57	62	85	79	85
	OIC Member countries affected (out of 53)	22	20	33	21	28
a) Source: UNDP HDR 2002						
b) Source: UNDP HDR 1995						
c) Source: The Heritage Foundation report - <a href="http://www.divorceform.org/gul.html">http://www.divorceform.org/gul.html</a>						
d) Source: United Nations - The World's Women 2000: Trends and Statistics- <a href="http://unstats.un.org/unsd/demographic/ww2000/table2a.htm">http://unstats.un.org/unsd/demographic/ww2000/table2a.htm</a>						

## Table 1 - Faith Index

Influence of Religion on							
		Visibility of Religion	Legal System	Government/ Political Parties Pressure Group/ Constitution	Total Score	Faith index	Faith index rank
<b>High religious influence</b>							
1	Saudi Arabia	4.00	4.00	3.00	11.00	3.67	1
2	Iran, Islamic Rep. of	4.00	4.00	3.00	11.00	3.67	1
<b>Medium religious influence</b>							
3	Syrian Arab Republic	3.75	3.00	1.50	8.25	2.75	3
4	Sudan	3.85	2.85	1.50	8.20	2.73	4
5	Maldives	3.75	3.00	0.75	7.50	2.50	5
6	Pakistan	4.00	2.50	1.00	7.50	2.50	5
7	United Arab Emirates	3.85	2.75	0.75	7.35	2.45	7
8	Egypt	3.80	2.00	1.50	7.30	2.43	8
9	Jordan	3.75	2.75	0.75	7.25	2.42	9
10	Algeria	3.75	2.75	0.75	7.25	2.42	9
11	Comoros	3.75	2.75	0.75	7.25	2.42	9
12	Mauritania	3.75	2.00	1.50	7.25	2.42	9
13	Tunisia	3.80	2.50	0.75	7.05	2.35	13
14	Kuwait	3.75	2.50	0.75	7.00	2.33	14
15	Sri Lanka	3.75	1.75	1.50	7.00	2.33	14
16	Djibouti	3.75	2.00	0.75	6.50	2.17	16
17	Qatar	3.85	2.50	0.00	6.35	2.12	17
18	Morocco	3.85	2.50	0.00	6.35	2.12	17
19	Oman	3.75	2.50	0.00	6.25	2.08	19
20	Yemen	3.50	2.00	0.75	6.25	2.08	19
21	Gambia	3.50	2.00	0.75	6.25	2.08	19
22	Libyan Arab Jamahiriya	3.85	2.00	0.00	5.85	1.95	22
23	Brunei Darussalam	2.70	2.00	0.75	5.45	1.82	23
24	Nepal	3.00	2.00	0.40	5.40	1.80	24
25	Italy	3.85	0.00	1.50	5.35	1.78	25
27	Senegal	3.80	0.00	1.50	5.30	1.77	26
28	Luxembourg	3.75	0.00	1.50	5.25	1.75	27
29	Poland	3.75	0.00	1.50	5.25	1.75	27
30	Chile	3.75	0.00	1.50	5.25	1.75	27
31	Paraguay	3.75	0.00	1.50	5.25	1.75	27
32	Nigeria	2.75	1.75	0.75	5.25	1.75	27
33	Austria	3.50	0.00	1.50	5.00	1.67	32
34	Lebanon	3.50	0.00	1.50	5.00	1.67	32
35	Bangladesh	3.50	0.00	1.50	5.00	1.67	32
26	Bahrain	3.85	0.00	0.75	4.60	1.53	35
36	Turkey	3.85	0.00	0.75	4.60	1.53	35
37	Denmark	3.75	0.00	0.75	4.50	1.50	37
38	Canada	2.75	0.00	1.75	4.50	1.50	37
39	Ireland	3.75	0.00	0.75	4.50	1.50	37
40	Spain	3.75	0.00	0.75	4.50	1.50	37
41	Greece	3.75	0.00	0.75	4.50	1.50	37

42	Portugal	3.75	0.00	0.75	4.50	1.50	37
43	Malta	3.75	0.00	0.75	4.50	1.50	37
44	Panama	3.75	0.00	0.75	4.50	1.50	37
45	Venezuela	3.75	0.00	0.75	4.50	1.50	37
46	Armenia	3.00	0.00	1.50	4.50	1.50	37
47	Philippines	3.75	0.00	0.75	4.50	1.50	37
48	Peru	3.75	0.00	0.75	4.50	1.50	37
49	Azerbaijan	3.75	0.00	0.75	4.50	1.50	37
50	Ecuador	3.75	0.00	0.75	4.50	1.50	37
51	Dominican Republic	3.75	0.00	0.75	4.50	1.50	37
52	Uzbekistan	3.75	0.00	0.75	4.50	1.50	37
53	Samoa (Western)	3.75	0.00	0.75	4.50	1.50	37
54	Indonesia	3.75	0.00	0.75	4.50	1.50	37
55	Tajikistan	3.75	0.00	0.75	4.50	1.50	37
56	Bolivia	3.00	0.00	1.50	4.50	1.50	37
57	Solomon Islands	3.75	0.00	0.75	4.50	1.50	37
58	Sweden	3.75	0.75	0.00	4.50	1.50	37
59	Kenya	2.75	0.00	1.50	4.25	1.42	59
60	Australia	3.50	0.00	0.75	4.25	1.42	59
61	Mexico	3.50	0.00	0.75	4.25	1.42	59
62	Kyrgyzstan	3.50	0.00	0.75	4.25	1.42	59
63	El Salvador	2.75	0.00	1.50	4.25	1.42	59
64	India	2.75	0.00	1.50	4.25	1.42	59
65	Haiti	2.75	0.00	1.50	4.25	1.42	59
66	Finland	3.00	0.00	0.75	3.75	1.25	66
67	France	3.00	0.00	0.75	3.75	1.25	66
68	Costa Rica	3.00	0.00	0.75	3.75	1.25	66
69	Malaysia	3.00	0.00	0.75	3.75	1.25	66
70	Colombia	3.00	0.00	0.75	3.75	1.25	66
71	Thailand	3.75	0.00	0.00	3.75	1.25	66
72	Turkmenistan	3.75	0.00	0.00	3.75	1.25	66
73	Nicaragua	3.00	0.00	0.75	3.75	1.25	66
74	Guinea	3.00	0.00	0.75	3.75	1.25	66
75	Malawi	3.00	0.00	0.75	3.75	1.25	66
76	Niger	3.00	0.00	0.75	3.75	1.25	66
77	Bulgaria	3.75	0.00	0.00	3.75	1.25	66
78	Romania	3.50	0.00	0.00	3.50	1.17	78
79	Norway	3.50	0.00	0.00	3.50	1.17	78
80	United States	3.50	0.00	0.00	3.50	1.17	78
81	United Kingdom	2.00	0.00	1.50	3.50	1.17	78
82	Cyprus	2.75	0.00	0.75	3.50	1.17	78
83	Trinidad and Tobago	2.00	0.00	1.50	3.50	1.17	78
84	Fiji	2.75	0.00	0.75	3.50	1.17	78
85	Brazil	2.00	0.00	1.50	3.50	1.17	78
86	Kazakhstan	2.75	0.00	0.75	3.50	1.17	78
87	Albania	3.50	0.00	0.00	3.50	1.17	78
88	Cape Verde	2.75	0.00	0.75	3.50	1.17	78
89	Guyana	2.75	0.00	0.75	3.50	1.17	78
90	Honduras	2.75	0.00	0.75	3.50	1.17	78
91	Gabon	2.75	0.00	0.75	3.50	1.17	78
92	Zambia	2.75	0.00	0.75	3.50	1.17	78
93	Switzerland	2.75	0.00	0.75	3.50	1.17	78
94	Japan	3.00	0.00	0.40	3.40	1.13	94
95	New Zealand	2.50	0.00	0.75	3.25	1.08	95
96	Hungary	2.50	0.00	0.75	3.25	1.08	95
97	Mauritius	2.50	0.00	0.75	3.25	1.08	95
<b>Low religious influence</b>							
98	Singapore	2.00	0.00	0.75	2.75	0.92	98
99	Barbados	2.75	0.00	0.00	2.75	0.92	98
100	Bahamas	2.75	0.00	0.00	2.75	0.92	98
101	Belize	2.75	0.00	0.00	2.75	0.92	98
102	Guatemala	2.75	0.00	0.00	2.75	0.92	98

103	Zimbabwe	1.00	0.00	1.75	2.75	0.92	98
104	Cameroon	2.00	0.00	0.75	2.75	0.92	98
105	Uganda	2.00	0.00	0.75	2.75	0.92	98
106	Chad	2.00	0.00	0.75	2.75	0.92	98
107	Burkina Faso	2.00	0.00	0.75	2.75	0.92	98
108	Sierra Leone	2.00	0.00	0.75	2.75	0.92	98
109	Cuba	1.95	0.00	0.75	2.70	0.90	109
110	Congo	1.80	0.00	0.75	2.55	0.85	110
111	Korea, Rep. of	2.50	0.00	0.00	2.50	0.83	111
112	Uruguay	1.75	0.00	0.75	2.50	0.83	111
113	Suriname	1.75	0.00	0.75	2.50	0.83	111
114	Botswana	1.75	0.00	0.75	2.50	0.83	111
115	Ghana	1.75	0.00	0.75	2.50	0.83	111
116	Central African Republic	1.75	0.00	0.75	2.50	0.83	111
117	Equatorial Guinea	1.75	0.00	0.75	2.50	0.83	111
118	Côte d'Ivoire	1.70	0.00	0.75	2.45	0.82	118
119	Benin	1.50	0.00	0.75	2.25	0.75	119
120	Angola	1.50	0.00	0.75	2.25	0.75	119
121	Mozambique	1.50	0.00	0.75	2.25	0.75	119
122	Swaziland	2.00	0.00	0.00	2.00	0.67	122
123	Netherlands	1.90	0.00	0.00	1.90	0.63	123
124	Togo	1.00	0.00	0.75	1.75	0.58	124
125	Guinea-Bissau	1.75	0.00	0.00	1.75	0.58	124
126	Argentina	0.50	0.00	0.75	1.25	0.42	126
127	China	0.00	0.00	0.75	0.75	0.25	127



**Table 2: Constituents of E-HDI**

Countries	Ethics- aug. HDI rank	HDI rank	Life expectancy index rank	Education index rank	GDP index rank	Carbon Dioxide Emission Per capita (metric tons) rank	Freedom scores, (1998) rank	Family value Index rank	Faith Index rank
Sweden	1	2	2	1	12	87	1	116	37
Canada	2	3	3	7	5	117	1	104	37
Ireland	3	15	21	13	3	114	1	90	37
Austria	4	13	6	13	8	104	1	121	32
Denmark	5	12	24	7	5	112	1	102	37
Australia	6	4	3	1	8	120	1	97	59
Malta	7	24	13	38	23	83	1	97	37
Luxembourg	8	14	19	31	1	121	1	97	27
Norway	9	1	6	7	3	101	1	102	78
Italy	10	17	6	16	15	100	17	121	25
Portugal	11	23	28	16	23	87	1	108	37
France	12	10	6	11	12	96	17	97	66
Switzerland	13	9	3	16	5	89	1	115	78
Spain	14	18	6	11	19	95	17	125	37
Finland	15	8	13	1	12	113	1	104	66
Costa Rica	16	34	21	49	44	54	17	64	66
United States	17	5	19	7	2	122	1	94	78
New Zealand	17	16	13	1	19	104	1	90	95
Chile	18	30	28	31	38	79	57	64	27
Philippines	19	57	66	27	72	44	41	50	37
United Kingdom	20	11	13	1	15	111	17	104	78
Panama	21	41	30	49	54	64	41	73	37
Greece	22	19	6	22	28	107	32	121	37
Uruguay	24	32	30	22	40	61	17	76	111
Samoa (Western)	24	76	66	78	62	36	41	38	37
Poland	26	29	36	16	39	108	17	116	27
Maldives	26	61	83	31	69	51	100	21	5
Netherlands	28	6	6	1	8	115	1	108	123
Sri Lanka	29	65	43	53	82	24	60	87	14
Cape Verde	29	75	58	78	62	22	17	50	78
Japan	31	7	1	20	8	110	17	116	94
Solomon Islands	32	91	75	92	101	24	17	25	37
Belize	33	42	30	49	60	59	17	56	98
Barbados	34	25	21	27	29	93	1	108	98
Jordan	35	74	53	72	72	65	73	37	9
Ecuador	36	68	58	45	84	65	41	62	37
Venezuela	37	49	39	60	54	98	41	64	37
Armenia	38	56	39	22	89	44	41	125	37
Brunei Darussalam	39	26	24	49	23	118	89	71	23
Paraguay	39	66	58	60	69	40	70	73	27
Cyprus	41	21	13	38	18	103	56	94	78
Colombia	42	48	48	53	49	59	60	69	66
Mexico	43	39	43	53	40	78	60	71	59
Algeria	43	80	66	91	61	76	100	3	9
Dominican Republic	45	69	81	65	54	71	34	64	37
El Salvador	45	79	58	83	65	44	41	56	59
Fiji	47	52	71	31	65	40	70	53	78
Peru	47	60	71	45	62	47	77	69	37
Oman	49	58	48	94	33	109	90	19	19
Bahamas	50	33	66	38	23	94	17	76	98
Bolivia	51	85	91	65	90	56	32	42	37
Kuwait	52	35	24	83	29	124	77	64	14
Saudi Arabia	53	51	46	88	36	116	112	19	1
Mauritius	54	47	48	73	37	56	17	94	95

United Arab Emirates	55	36	30	83	21	126	100	56	7
Comoros	55	101	93	109	105	2	77	28	9
Korea, Rep. of	57	22	30	15	23	104	34	108	111
Argentina	58	27	36	22	34	77	58	73	126
Hungary	58	28	48	20	34	92	17	121	95
Qatar	58	38	66	70	21	127	77	48	17
Bahrain	61	31	36	53	29	125	77	76	35
Thailand	62	50	58	53	49	73	41	90	66
Turkey	63	62	58	73	47	73	73	76	35
Nepal	63	106	96	110	110	2	60	32	24
Pakistan	65	102	93	113	99	32	73	26	5
Nicaragua	66	89	75	95	90	32	41	44	66
Malaysia	67	43	43	65	40	89	86	56	66
Libyan Arab Jamahiriya	68	46	53	53	45	99	123	48	22
Trinidad and Tobago	69	37	30	53	40	118	17	108	78
Tajikistan	70	84	77	38	112	36	91	56	37
Guyana	71	78	90	38	72	63	34	76	78
Romania	72	45	58	38	49	79	34	116	78
Iran, Islamic Rep. of	73	73	71	78	54	81	107	62	1
Bulgaria	74	44	53	31	54	89	41	125	66
Morocco	75	92	77	105	79	51	77	53	17
Tunisia	76	72	58	86	49	68	100	87	13
Syrian Arab Republic	77	81	48	88	79	75	123	45	3
Djibouti	77	111	121	105	90	30	86	15	16
Malawi	77	121	124	95	126	2	41	9	66
Bangladesh	80	108	95	114	105	15	55	47	32
Sudan	81	103	98	105	100	2	123	33	4
Brazil	82	53	77	60	45	61	60	85	78
Honduras	82	87	86	90	90	36	41	45	78
Kenya	84	98	107	86	114	22	41	38	59
Lebanon	85	55	39	60	69	84	100	85	32
Swaziland	86	94	117	73	65	24	34	35	122
Uzbekistan	87	70	71	27	90	82	91	76	37
Senegal	88	115	100	121	107	24	72	26	26
Albania	89	67	39	65	82	28	110	76	78
Turkmenistan	90	63	83	22	72	97	91	50	66
India	91	93	89	104	90	47	41	53	59
Mauritania	92	113	104	114	101	47	100	11	9
Equatorial Guinea	93	83	107	73	29	30	123	13	111
Egypt	94	86	81	98	79	58	107	56	8
Singapore	95	20	13	45	15	123	86	108	98
Yemen	95	107	92	110	117	36	112	2	19
Indonesia	97	82	83	70	85	47	91	76	37
Haiti	97	109	101	105	107	2	73	41	59
Azerbaijan	99	64	46	38	86	84	91	108	37
Kyrgyzstan	99	77	77	45	87	55	91	76	59
Guatemala	99	90	87	98	72	40	60	36	98
Nigeria	102	110	104	103	117	32	91	21	27
Suriname	103	54	53	31	72	86	60	87	111
Benin	103	117	99	114	115	116	34	17	119
Botswana	105	95	124	78	47	68	34	42	111
Gabon	106	88	101	77	49	68	114	21	78
Ghana	107	97	97	98	97	15	58	38	111
Mozambique	108	125	126	121	120	2	77	13	119
Cuba	109	40	24	31	65	67	123	104	109
Zambia	109	114	123	92	123	15	77	17	78
Kazakhstan	111	59	87	27	54	101	91	90	78
Zimbabwe	112	96	121	64	87	51	77	33	98
Guinea	113	118	110	121	97	2	114	15	66
Uganda	114	112	117	101	111	2	110	5	98
Niger	115	126	114	127	123	2	114	1	66
Cameroon	116	99	109	95	101	2	114	30	98
Central African Republic	116	122	117	117	112	2	60	29	111
Congo	118	100	104	82	122	32	114	7	110

Chad	119	123	113	117	120	1	114	9	98
Togo	120	105	103	102	107	15	100	21	124
Burkina Faso	121	125	112	126	115	2	60	6	98
Guinea-Bissau	122	124	116	120	123	15	69	11	124
Angola	123	120	117	124	96	15	107	3	119
Sierra Leone	124	127	127	125	127	2	114	8	98
Côte d'Ivoire	125	116	110	112	101	40	91	31	118
China	126	71	53	65	72	71	122	97	127
Gambia	127	119	114	119	117	15	114	116	19

**Table 3: E-HDI - Indicator Scores**

HDI rank	Life expectancy index score	Education index score	GDP index score	Carbon Dioxide Emission Per capita (metric tons) score	Freedom scores, (1998)	Family value Index score	Faith Index score	Total score	E-HDI rank	
2	Sweden	126	127	116	41	127	11	91	639	1
3	Canada	125	121	123	11	127	23	91	621	2
15	Ireland	107	115	125	14	127	37	91	616	3
13	Austria	122	115	120	24	127	7	96	611	4
12	Denmark	104	121	123	16	127	25	91	607	5
4	Australia	125	127	120	8	127	30	69	606	6
24	Malta	115	90	105	45	127	30	91	603	7
14	Luxembourg	109	97	127	7	127	30	101	598	8
1	Norway	122	121	125	27	127	25	50	597	9
17	Italy	122	112	113	28	111	7	103	596	10
23	Portugal	100	112	105	41	127	19	91	595	11
10	France	122	117	116	32	111	30	62	590	12
9	Switzerland	125	112	123	39	127	12	50	588	13
18	Spain	122	117	109	33	111	3	91	586	14
8	Finland	115	127	116	15	127	23	62	585	15
34	Costa Rica	107	79	84	74	111	63	62	580	16
5	United States	109	121	126	6	127	33	50	572	17
16	New Zealand	115	127	109	24	127	37	33	572	17
30	Chile	100	97	90	49	71	63	101	571	18
57	Philippines	62	101	56	84	87	77	91	558	19
11	United Kingdom	115	127	113	17	111	23	50	556	20
41	Panama	96	79	74	64	87	54	91	545	21
19	Greece	122	106	100	21	96	7	91	543	22
32	Uruguay	96	106	89	67	111	51	17	537	24
76	Samoa (Western)	62	50	66	92	87	89	91	537	24
29	Poland	92	112	89	20	111	11	101	536	26
61	Maldives	45	97	59	77	28	107	123	536	26
6	Netherlands	122	127	120	13	127	19	5	533	28
65	Sri Lanka	85	73	46	104	68	40	114	530	29
75	Cape Verde	70	50	66	106	111	77	50	530	29
7	Japan	127	108	120	18	111	11	34	529	31
91	Solomon Islands	53	36	27	104	111	103	91	525	32
42	Belize	96	79	68	69	111	71	30	524	33
25	Barbados	107	101	99	35	127	19	30	518	34
74	Jordan	75	56	56	63	55	90	119	514	35
68	Ecuador	70	83	44	63	87	65	91	503	36
49	Venezuela	89	68	74	30	87	63	91	502	37
56	Armenia	89	106	39	84	87	3	91	499	38
26	Brunei Darussalam	104	79	105	10	39	56	105	498	39
66	Paraguay	70	68	59	88	58	54	101	498	39
21	Cyprus	115	90	110	25	72	33	50	495	41
48	Colombia	80	75	79	69	68	58	62	491	42
39	Mexico	85	73	89	50	68	56	69	490	43
80	Algeria	62	37	67	52	28	125	119	490	43
69	Dominican Republic	47	63	74	57	94	63	91	489	45
79	El Salvador	70	45	63	84	87	71	69	489	45
52	Fiji	57	97	63	88	58	74	50	487	47
60	Peru	57	83	66	81	51	58	91	487	47
58	Oman	80	34	95	19	38	109	109	484	49
33	Bahamas	62	90	105	34	111	51	30	483	50
85	Bolivia	37	63	38	72	96	85	91	482	51
35	Kuwait	104	45	99	4	51	63	114	480	52

51	Saudi Arabia	82	40	92	12	16	109	127	478	53
47	Mauritius	80	55	91	72	111	33	33	475	54
36	United Arab Emirates	98	45	107	2	28	71	121	472	55
101	Comoros	35	19	22	126	51	100	119	472	55
22	Korea, Rep. of	98	113	105	24	94	19	17	470	57
27	Argentina	92	106	94	51	70	54	2	469	58
28	Hungary	80	108	94	36	111	7	33	469	58
38	Qatar	62	58	107	1	51	79	111	469	58
31	Bahrain	92	75	99	3	51	51	93	464	61
50	Thailand	70	73	79	55	87	37	62	463	62
62	Turkey	70	55	81	55	55	51	93	460	63
106	Nepal	32	18	17	126	68	95	104	460	63
102	Pakistan	35	15	29	96	55	102	123	455	65
89	Nicaragua	53	33	38	96	87	83	62	452	66
43	Malaysia	85	63	89	39	42	71	62	451	67
46	Libyan Arab Jamahiriya	75	73	83	29	4	79	106	449	68
37	Trinidad and Tobago	96	73	89	10	111	19	50	448	69
84	Tajikistan	51	90	15	92	37	71	91	447	70
78	Guyana	38	90	56	65	94	51	50	444	71
45	Romania	70	90	79	49	94	11	50	443	72
73	Iran, Islamic Rep. of	57	50	74	47	21	65	127	441	73
44	Bulgaria	75	97	74	39	87	3	62	437	74
92	Morocco	51	23	49	77	51	74	111	436	75
72	Tunisia	70	42	79	60	28	40	115	434	76
81	Syrian Arab Republic	80	40	49	53	4	82	125	433	77
111	Djibouti	7	23	38	98	42	113	112	433	77
121	Malawi	4	33	2	126	87	119	62	433	77
108	Bangladesh	33	14	22	113	73	80	96	431	80
103	Sudan	30	23	28	126	4	95	124	430	81
53	Brazil	51	68	83	67	68	42	50	429	82
87	Honduras	42	38	38	92	87	82	50	429	82
98	Kenya	21	42	13	106	87	89	69	427	84
55	Lebanon	89	68	59	44	28	42	96	426	85
94	Swaziland	10	55	63	104	94	92	6	424	86
70	Uzbekistan	57	101	38	46	37	51	91	421	87
115	Senegal	28	7	20	104	56	102	102	419	88
67	Albania	89	63	46	100	18	51	50	417	89
63	Turkmenistan	45	106	56	31	37	77	62	414	90
93	India	39	24	38	81	87	74	69	412	91
113	Mauritania	24	14	27	81	28	117	119	410	92
83	Equatorial Guinea	21	55	99	98	4	115	17	409	93
86	Egypt	47	30	49	70	21	71	120	408	94
20	Singapore	115	83	113	5	42	19	30	407	95
107	Yemen	36	18	10	92	16	126	109	407	95
82	Indonesia	45	58	43	81	37	51	91	406	97
109	Haiti	27	23	20	126	55	86	69	406	97
64	Azerbaijan	82	90	42	44	37	19	91	405	99
77	Kyrgyzstan	51	83	41	73	37	51	69	405	99
90	Guatemala	41	30	56	88	68	92	30	405	99
110	Nigeria	24	25	10	96	37	107	101	400	102
54	Suriname	75	97	56	42	68	40	17	395	103
117	Benin	29	14	12	126	94	111	9	395	103
95	Botswana	4	50	81	60	94	85	17	391	105
88	Gabon	27	51	79	60	14	107	50	388	106
97	Ghana	31	30	31	113	70	89	17	381	107
125	Burkina Faso	16	2	12	126	68	122	30	376	108
40	Cuba	104	97	63	61	4	23	19	371	109
114	Zambia	5	36	5	113	51	111	50	371	109
59	Kazakhstan	41	101	74	27	37	37	50	367	111
96	Zimbabwe	7	64	41	77	51	95	30	365	112
118	Guinea	18	7	31	113	14	113	62	358	113
112	Uganda	10	27	16	126	18	123	30	350	114
126	Niger	13	1	5	126	14	127	62	348	115

99	Cameroon	19	33	27	126	14	97	30	346	116
122	Central African Republic	10	11	15	126	68	99	17	346	116
100	Congo	24	46	6	96	14	121	18	325	118
123	Chad	15	11	8	127	14	119	30	324	119
105	Togo	25	26	20	113	28	107	4	323	120
125	Mozambique	2	7	8	126	51	115	9	318	121
124	Guinea-Bissau	11	8	5	113	59	117	4	317	122
120	Angola	10	4	32	100	21	125	9	301	123
127	Sierra Leone	1	3	1	126	14	120	30	295	124
116	Côte d'Ivoire	18	16	27	88	37	96	10	292	125
71	China	75	63	56	57	5	30	1	287	126
119	Gambia	13	10	10	113	14	11	109	280	127

**Table 4A: E-HDI**

Countries	E- HDI rank	HDI rank <sup>a</sup>	Life expectancy index <sup>a</sup>	Education index <sup>a</sup>	GDP index <sup>a</sup>	Carbon Dioxide Emission Per capita (metric tons) <sup>a</sup>	Freedom scores, 1998 <sup>b</sup>	Fertility Rate (Birth / Woman) <sup>c</sup>	Family value Index <sup>d</sup>	Faith Index <sup>e</sup>
Sweden	1	2	0.91	0.99	0.92	5.5	1.00	1.3	0.03	1.50
Canada	2	3	0.90	0.98	0.94	15.3	1.00	1.6	0.07	1.50
Ireland	3	15	0.86	0.96	0.95	10.4	1.00	2.0	0.13	1.50
Austria	4	13	0.89	0.96	0.93	7.9	1.00	1.2	0.01	1.67
Denmark	5	12	0.85	0.98	0.94	10.1	1.00	1.7	0.09	1.50
Australia	6	4	0.90	0.99	0.93	17.9	1.00	1.8	0.10	1.42
Malta	7	24	0.88	0.88	0.86	4.7	1.00	1.8	0.10	1.50
Luxembourg	8	14	0.87	0.90	1.00	18.2	1.00	1.8	0.10	1.75
Norway	9	1	0.89	0.98	0.95	7.6	1.00	1.7	0.09	1.17
Italy	10	17	0.89	0.94	0.91	7.2	0.98	1.2	0.01	1.78
Portugal	11	23	0.84	0.94	0.86	5.5	1.00	1.5	0.06	1.50
France	12	10	0.89	0.97	0.92	6.3	0.98	1.8	0.10	1.25
Switzerland	13	9	0.90	0.94	0.94	5.7	1.00	1.4	0.04	1.17
Spain	14	18	0.89	0.97	0.88	6.2	0.98	1.1	0.00	1.50
Finland	15	8	0.88	0.99	0.92	10.3	1.00	1.6	0.07	1.25
Costa Rica	16	34	0.86	0.86	0.74	1.3	0.98	2.7	0.23	1.25
United States	17	5	0.87	0.98	0.97	19.9	1.00	1.9	0.12	1.17
New Zealand	17	16	0.88	0.99	0.88	7.9	1.00	2.0	0.13	1.08
Chile	18	30	0.84	0.90	0.76	4.1	0.68	2.7	0.23	1.75
Philippines	19	57	0.74	0.91	0.61	1.0	0.82	3.2	0.30	1.50
United Kingdom	20	11	0.88	0.99	0.91	9.2	0.98	1.6	0.07	1.17
Panama	21	41	0.82	0.86	0.68	2.1	0.82	2.4	0.19	1.50
Greece	22	19	0.89	0.92	0.85	8.0	0.97	1.2	0.01	1.50
Uruguay	24	32	0.82	0.92	0.75	1.8	0.98	2.3	0.17	0.83
Samoa (Western)	24	76	0.74	0.75	0.65	0.8	0.82	4.2	0.45	1.50
Poland	26	29	0.81	0.94	0.75	8.3	0.98	1.3	0.03	1.75
Maldives	26	61	0.69	0.90	0.63	1.2	0.18	5.4	0.62	2.50
Netherlands	28	6	0.89	0.99	0.93	10.5	1.00	1.5	0.06	0.63
Sri Lanka	29	65	0.79	0.84	0.59	0.4	0.65	2.1	0.14	2.33
Cape Verde	29	75	0.75	0.75	0.65	0.3	0.98	3.2	0.30	1.17
Japan	31	7	0.93	0.93	0.93	9.0	0.98	1.3	0.03	1.13
Solomon Islands	32	91	0.72	0.68	0.47	0.4	0.98	5.3	0.61	1.50
Belize	33	42	0.82	0.86	0.67	1.7	0.98	2.9	0.26	0.92
Barbados	34	25	0.86	0.91	0.84	5.9	1.00	1.5	0.06	0.92
Jordan	35	74	0.76	0.78	0.61	2.2	0.48	4.3	0.46	2.42
Ecuador	36	68	0.75	0.87	0.58	2.2	0.82	2.8	0.25	1.50
Venezuela	37	49	0.80	0.83	0.68	6.7	0.82	2.7	0.23	1.50
Armenia	38	56	0.80	0.92	0.54	1.0	0.82	1.1	0.00	1.50
Brunei	39	26	0.85	0.86	0.86	17.5	0.30	2.5	0.20	1.82
Darussalam										
Paraguay	39	66	0.75	0.83	0.63	0.9	0.52	2.4	0.19	1.75
Cyprus	41	21	0.88	0.88	0.89	7.7	0.75	1.9	0.12	1.17
Colombia	42	48	0.77	0.85	0.69	1.7	0.65	2.6	0.22	1.25
Mexico	43	39	0.79	0.84	0.75	3.9	0.65	2.5	0.20	1.42
Algeria	43	80	0.74	0.69	0.66	3.6	0.18	7.2	0.88	2.42
Dominican Republic	45	69	0.70	0.80	0.68	2.5	0.83	2.7	0.23	1.50
El Salvador	45	79	0.75	0.74	0.64	1.0	0.82	2.9	0.26	1.42
Fiji	47	52	0.73	0.90	0.64	0.9	0.52	3.0	0.28	1.17
Peru	47	60	0.73	0.87	0.65	1.1	0.35	2.6	0.22	1.50
Oman	49	58	0.77	0.67	0.82	8.5	0.25	5.5	0.64	2.08
Bahamas	50	33	0.74	0.88	0.86	6.1	0.98	2.3	0.17	0.92
Bolivia	51	85	0.62	0.80	0.53	1.5	0.97	3.9	0.41	1.50

Kuwait	52	35	0.85	0.74	0.84	27.2	0.35	2.7	0.23	2.33
Saudi Arabia	53	51	0.78	0.71	0.79	14.1	0.05	5.5	0.64	3.67
Mauritius	54	47	0.77	0.77	0.77	1.5	0.98	1.9	0.12	1.08
United Arab Emirates	55	36	0.83	0.74	0.87	37.5	0.18	2.9	0.26	2.45
Comoros	55	101	0.58	0.49	0.46	0.1	0.35	5.0	0.57	2.42
Korea, Rep. of	57	22	0.83	0.95	0.86	7.9	0.83	1.5	0.06	0.83
Argentina	58	27	0.81	0.92	0.80	3.8	0.67	2.4	0.19	0.42
Hungary	58	28	0.77	0.93	0.80	5.8	0.98	1.2	0.01	1.08
Qatar	58	38	0.74	0.79	0.87	80.9	0.35	3.3	0.32	2.12
Bahrain	61	31	0.81	0.85	0.84	31.5	0.35	2.3	0.17	1.53
Thailand	62	50	0.75	0.84	0.69	3.2	0.82	2.0	0.13	1.25
Turkey	63	62	0.75	0.77	0.71	3.2	0.48	2.3	0.17	1.53
Nepal	63	105	0.56	0.48	0.43	0.1	0.65	4.5	0.49	1.80
Pakistan	65	102	0.58	0.42	0.49	0.7	0.48	5.1	0.58	2.50
Nicaragua	66	89	0.72	0.65	0.53	0.7	0.82	3.8	0.39	1.25
Malaysia	67	43	0.79	0.80	0.75	5.7	0.33	2.9	0.26	1.25
Libyan Arab Jamahiriya	68	46	0.76	0.84	0.72	6.8	0.00	3.3	0.32	1.95
Trinidad and Tobago	69	37	0.82	0.84	0.75	17.5	0.98	1.5	0.06	1.17
Tajikistan	70	84	0.71	0.88	0.41	0.8	0.20	2.9	0.26	1.50
Guyana	71	78	0.63	0.88	0.61	1.9	0.83	2.3	0.17	1.17
Romania	72	45	0.75	0.88	0.69	4.1	0.83	1.3	0.03	1.17
Iran, Islamic Rep. of	73	73	0.73	0.75	0.68	4.4	0.17	2.8	0.25	3.67
Bulgaria	74	44	0.76	0.90	0.68	5.7	0.82	1.1	0.00	1.25
Morocco	75	92	0.71	0.50	0.60	1.2	0.35	3.0	0.28	2.12
Tunisia	76	72	0.75	0.72	0.69	2.4	0.18	2.1	0.14	2.35
Syrian Arab Republic	77	81	0.77	0.71	0.60	3.3	0.00	3.7	0.38	2.75
Djibouti	77	110	0.30	0.50	0.53	0.6	0.33	5.8	0.68	2.17
Malawi	77	120	0.25	0.65	0.30	0.1	0.82	6.3	0.75	1.25
Bangladesh	80	107	0.57	0.40	0.46	0.2	0.80	3.6	0.36	1.67
Sudan	81	103	0.52	0.50	0.48	0.1	0.00	4.5	0.49	2.73
Brazil	82	53	0.71	0.83	0.72	1.8	0.65	2.2	0.16	1.17
Honduras	82	87	0.68	0.70	0.53	0.8	0.82	3.7	0.38	1.17
Kenya	84	98	0.43	0.72	0.39	0.3	0.82	4.2	0.45	1.42
Lebanon	85	55	0.80	0.83	0.63	5.1	0.18	2.2	0.16	1.67
Swaziland	86	94	0.32	0.77	0.64	0.4	0.83	4.4	0.48	0.67
Uzbekistan	87	70	0.73	0.91	0.53	4.6	0.20	2.3	0.17	1.50
Senegal	88	114	0.47	0.37	0.45	0.4	0.50	5.1	0.58	1.77
Albania	89	67	0.80	0.80	0.59	0.5	0.10	2.3	0.17	1.17
Turkmenistan	90	63	0.69	0.92	0.61	6.5	0.20	3.2	0.30	1.25
India	91	93	0.64	0.57	0.53	1.1	0.82	3.0	0.28	1.42
Mauritania	92	112	0.44	0.40	0.47	1.1	0.18	6.0	0.71	2.42
Equatorial Guinea	93	83	0.43	0.77	0.84	0.6	0.00	5.9	0.70	0.83
Egypt	94	86	0.70	0.62	0.60	1.6	0.17	2.9	0.26	2.43
Singapore	95	20	0.88	0.87	0.91	23.7	0.33	1.5	0.06	0.92
Yemen	95	106	0.59	0.48	0.37	0.8	0.05	7.6	0.94	2.08
Indonesia	97	82	0.69	0.79	0.57	1.1	0.20	2.3	0.17	1.50
Haiti	97	108	0.46	0.50	0.45	0.1	0.48	4.0	0.42	1.42
Azerbaijan	99	64	0.78	0.88	0.56	5.1	0.20	1.5	0.06	1.50
Kyrgyzstan	99	77	0.71	0.87	0.55	1.4	0.20	2.3	0.17	1.42
Guatemala	99	90	0.66	0.62	0.61	0.9	0.65	4.4	0.48	0.92
Nigeria	102	109	0.44	0.58	0.37	0.7	0.20	5.4	0.62	1.75
Suriname	103	54	0.76	0.90	0.61	5.2	0.65	2.1	0.14	0.83
Benin	103	116	0.48	0.40	0.38	0.1	0.83	5.7	0.67	0.75
Botswana	105	95	0.25	0.75	0.71	2.4	0.83	3.9	0.41	0.83
Gabon	106	88	0.46	0.76	0.69	2.4	0.03	5.4	0.62	1.17
Ghana	107	97	0.53	0.62	0.50	0.2	0.67	4.2	0.45	0.83
Burkina Faso	108	124	0.36	0.23	0.38	0.1	0.35	6.8	0.83	0.92
Cuba	109	40	0.85	0.90	0.64	2.3	0.00	1.6	0.07	0.90
Zambia	109	113	0.27	0.68	0.34	0.2	0.35	5.7	0.67	1.17
Kazakhstan	111	59	0.66	0.91	0.68	7.6	0.20	2.0	0.13	1.17



Zimbabwe	112	96	0.30	0.81	0.55	1.2	0.35	4.5	0.49	0.92
Guinea	113	117	0.38	0.37	0.50	0.2	0.03	5.8	0.68	1.25
Uganda	114	111	0.32	0.60	0.42	0.1	0.10	7.1	0.87	0.92
Niger	115	126	0.34	0.16	0.34	0.1	0.03	8.0	1.00	1.25
Cameroon	116	99	0.42	0.65	0.47	0.1	0.03	4.7	0.52	0.92
Central African Republic	116	121	0.32	0.39	0.41	0.1	0.65	4.9	0.55	0.83
Congo	118	100	0.44	0.75	0.35	0.7	0.03	6.7	0.81	0.85
Chad	119	122	0.35	0.39	0.36	0.0	0.03	6.3	0.75	0.92
Togo	120	104	0.45	0.59	0.45	0.2	0.18	5.4	0.62	0.58
Mozambique	121	125	0.24	0.37	0.36	0.1	0.65	5.9	0.70	0.75
Guinea-Bissau	122	123	0.33	0.38	0.34	0.2	0.64	6.0	0.71	0.58
Angola	123	119	0.34	0.36	0.51	0.5	0.17	7.2	0.88	0.75
Sierra Leone	124	127	0.23	0.33	0.27	0.1	0.03	6.5	0.78	0.92
Côte d'Ivoire	125	115	0.38	0.44	0.47	0.9	0.20	4.6	0.51	0.82
China	126	71	0.76	0.80	0.61	2.5	0.02	1.8	0.10	0.25
Gambia	127	118	0.35	0.39	0.47	0.2	0.03	4.8	0.54	2.08

**Table 4B: HDI and E-HDI Ranks Compared**

	HDI rank	E-HDI rank	Life expectancy index	Education index	GDP index	Carbon Dioxide Emission Per capita (metric tons)	Freedom scores, 1998	Fertility Rate (Birth / Woman)	Family value Index	Faith Index
<b>High human development</b>										
1	Norway	9	0.89	0.98	0.95	7.60	1.00	1.70	0.09	1.17
2	Sweden	1	0.91	0.99	0.92	5.50	1.00	1.30	0.03	1.50
3	Canada	2	0.90	0.98	0.94	15.30	1.00	1.60	0.07	1.50
4	Australia	6	0.90	0.99	0.93	17.90	1.00	1.80	0.10	1.42
5	United States	17	0.87	0.98	0.97	19.90	1.00	1.90	0.12	1.17
6	Netherlands	28	0.89	0.99	0.93	10.50	1.00	1.50	0.06	0.63
7	Japan	31	0.93	0.93	0.93	9.00	0.98	1.30	0.03	1.13
8	Finland	15	0.88	0.99	0.92	10.30	1.00	1.60	0.07	1.25
9	Switzerland	13	0.90	0.94	0.94	5.70	1.00	1.40	0.04	1.17
10	France	12	0.89	0.97	0.92	6.30	0.98	1.80	0.10	1.25
11	United Kingdom	20	0.88	0.99	0.91	9.20	0.98	1.60	0.07	1.17
12	Denmark	5	0.85	0.98	0.94	10.10	1.00	1.70	0.09	1.50
13	Austria	4	0.89	0.96	0.93	7.90	1.00	1.20	0.01	1.67
14	Luxembourg	8	0.87	0.90	1.00	18.20	1.00	1.80	0.10	1.75
15	Ireland	3	0.86	0.96	0.95	10.40	1.00	2.00	0.13	1.50
16	New Zealand	17	0.88	0.99	0.88	7.90	1.00	2.00	0.13	1.08
17	Italy	10	0.89	0.94	0.91	7.20	0.98	1.20	0.01	1.78
18	Spain	14	0.89	0.97	0.88	6.20	0.98	1.10	0.00	1.50
19	Greece	22	0.89	0.92	0.85	8.00	0.97	1.20	0.01	1.50
20	Singapore	95	0.88	0.87	0.91	23.70	0.33	1.50	0.06	0.92
21	Cyprus	41	0.88	0.88	0.89	7.70	0.75	1.90	0.12	1.17
22	Korea, Rep. of	57	0.83	0.95	0.86	7.90	0.83	1.50	0.06	0.83
23	Portugal	11	0.84	0.94	0.86	5.50	1.00	1.50	0.06	1.50
24	Malta	7	0.88	0.88	0.86	4.70	1.00	1.80	0.10	1.50
25	Barbados	34	0.86	0.91	0.84	5.90	1.00	1.50	0.06	0.92
26	Brunei Darussalam	39	0.85	0.86	0.86	17.50	0.30	2.50	0.20	1.82
27	Argentina	58	0.81	0.92	0.80	3.80	0.67	2.40	0.19	0.17
28	Hungary	58	0.77	0.93	0.80	5.80	0.98	1.20	0.01	1.08
29	Poland	26	0.81	0.94	0.75	8.30	0.98	1.30	0.03	1.75
30	Chile	18	0.84	0.90	0.76	4.10	0.68	2.70	0.23	1.75
31	Bahrain	61	0.81	0.85	0.84	31.50	0.35	2.30	0.17	1.53
32	Uruguay	24	0.82	0.92	0.75	1.80	0.98	2.30	0.17	0.83
33	Bahamas	50	0.74	0.88	0.86	6.10	0.98	2.30	0.17	0.02
34	Costa Rica	16	0.86	0.86	0.74	1.30	0.98	2.70	0.23	1.25
35	Kuwait	52	0.85	0.74	0.84	27.20	0.35	2.70	0.23	2.33
36	United Arab Emirates	55	0.83	0.74	0.87	37.50	0.18	2.90	0.26	2.45
37	Trinidad and Tobago	69	0.82	0.84	0.75	17.50	0.98	1.50	0.06	1.17
38	Qatar	58	0.74	0.79	0.87	80.90	0.35	3.30	0.32	2.12
<b>Medium human development</b>										
39	Mexico	43	0.79	0.84	0.75	3.90	0.65	2.50	0.20	1.42
40	Cuba	109	0.85	0.90	0.64	2.30	0.00	1.60	0.07	0.90
41	Panama	21	0.82	0.86	0.68	2.10	0.82	2.40	0.19	1.50
42	Belize	33	0.82	0.86	0.67	1.70	0.98	2.90	0.26	0.92
43	Malaysia	67	0.79	0.80	0.75	5.70	0.33	2.90	0.26	1.25
44	Bulgaria	74	0.76	0.90	0.68	5.70	0.82	1.10	0.00	1.25
45	Romania	72	0.75	0.88	0.69	4.10	0.83	1.30	0.03	1.17
46	Libyan Arab Jamahiriya	68	0.76	0.84	0.72	6.80	0.00	3.30	0.32	1.95
47	Mauritius	54	0.77	0.77	0.77	1.50	0.98	1.90	0.12	1.08
48	Colombia	42	0.77	0.85	0.69	1.70	0.65	2.60	0.22	1.25
49	Venezuela	37	0.80	0.83	0.68	6.70	0.82	2.70	0.23	1.50

50	Thailand	62	0.75	0.84	0.69	3.20	0.82	2.00	0.13	1.25
51	Saudi Arabia	53	0.78	0.71	0.79	14.10	0.05	5.50	0.64	3.67
52	Fiji	47	0.73	0.90	0.64	0.90	0.52	3.00	0.28	1.17
53	Brazil	82	0.71	0.83	0.72	1.80	0.65	2.20	0.16	1.17
54	Suriname	103	0.76	0.90	0.61	5.20	0.65	2.10	0.14	0.83
55	Lebanon	85	0.80	0.83	0.63	5.10	0.18	2.20	0.16	1.67
56	Armenia	38	0.80	0.92	0.54	1.00	0.82	1.10	0.00	1.50
57	Philippines	19	0.74	0.91	0.61	1.00	0.82	3.20	0.30	1.50
58	Oman	49	0.77	0.67	0.82	8.50	0.25	5.50	0.64	2.08
59	Kazakhstan	111	0.66	0.91	0.68	7.60	0.20	2.00	0.13	1.17
60	Peru	47	0.73	0.87	0.65	1.10	0.35	2.60	0.22	1.50
61	Maldives	26	0.69	0.90	0.63	1.20	0.18	5.40	0.62	2.50
62	Turkey	63	0.75	0.77	0.71	3.20	0.48	2.30	0.17	1.53
63	Turkmenistan	90	0.69	0.92	0.61	6.50	0.20	3.20	0.30	1.25
64	Azerbaijan	99	0.78	0.88	0.56	5.10	0.20	1.50	0.06	1.50
65	Sri Lanka	29	0.79	0.84	0.59	0.40	0.65	2.10	0.14	2.33
66	Paraguay	39	0.75	0.83	0.63	0.90	0.52	2.40	0.19	1.75
67	Albania	89	0.80	0.80	0.59	0.50	0.10	2.30	0.17	1.17
68	Ecuador	36	0.75	0.87	0.58	2.20	0.82	2.80	0.25	1.50
69	Dominican Republic	45	0.70	0.80	0.68	2.50	0.83	2.70	0.23	1.50
70	Uzbekistan	87	0.73	0.91	0.53	4.60	0.20	2.30	0.17	1.50
71	China	126	0.76	0.80	0.61	2.50	0.02	1.80	0.10	0.25
72	Tunisia	76	0.75	0.72	0.69	2.40	0.18	2.10	0.14	2.35
73	Iran, Islamic Rep. of	73	0.73	0.75	0.68	4.40	0.17	2.80	0.25	3.67
74	Jordan	35	0.76	0.78	0.61	2.20	0.48	4.30	0.46	2.42
75	Cape Verde	29	0.75	0.75	0.65	0.30	0.98	3.20	0.30	1.17
76	Samoa (Western)	24	0.74	0.75	0.65	0.80	0.82	4.20	0.45	1.50
77	Kyrgyzstan	99	0.71	0.87	0.55	1.40	0.20	2.30	0.17	1.42
78	Guyana	71	0.63	0.88	0.61	1.90	0.83	2.30	0.17	1.17
79	El Salvador	45	0.75	0.74	0.64	1.00	0.82	2.90	0.26	1.42
80	Algeria	43	0.74	0.69	0.66	3.60	0.18	7.20	0.88	2.42
81	Syrian Arab Republic	77	0.77	0.71	0.60	3.30	0.00	3.70	0.38	2.75
82	Indonesia	97	0.69	0.79	0.57	1.10	0.20	2.30	0.17	1.50
83	Equatorial Guinea	93	0.43	0.77	0.84	0.60	0.00	5.90	0.70	0.83
84	Tajikistan	70	0.71	0.88	0.41	0.80	0.20	2.90	0.26	1.50
85	Bolivia	51	0.62	0.80	0.53	1.50	0.97	3.90	0.41	1.50
86	Egypt	94	0.70	0.62	0.60	1.60	0.17	2.90	0.26	2.43
87	Honduras	82	0.68	0.70	0.53	0.80	0.82	3.70	0.38	1.17
88	Gabon	106	0.46	0.76	0.69	2.40	0.03	5.40	0.62	1.17
89	Nicaragua	66	0.72	0.65	0.53	0.70	0.82	3.80	0.39	1.25
90	Guatemala	99	0.66	0.62	0.61	0.90	0.65	4.40	0.48	0.92
91	Solomon Islands	32	0.72	0.68	0.47	0.40	0.98	5.30	0.61	1.50
92	Morocco	75	0.71	0.50	0.60	1.20	0.35	3.00	0.28	2.12
93	India	91	0.64	0.57	0.53	1.10	0.82	3.00	0.28	1.42
94	Swaziland	86	0.32	0.77	0.64	0.40	0.83	4.40	0.48	0.67
95	Botswana	105	0.25	0.75	0.71	2.40	0.83	3.90	0.41	0.83
96	Zimbabwe	112	0.30	0.81	0.55	1.20	0.35	4.50	0.49	0.92
97	Ghana	107	0.53	0.62	0.50	0.20	0.67	4.20	0.45	0.83
98	Kenya	84	0.43	0.72	0.39	0.30	0.82	4.20	0.45	1.42
99	Cameroon	116	0.42	0.65	0.47	0.10	0.03	4.70	0.52	0.92
100	Congo	118	0.44	0.75	0.35	0.70	0.03	6.70	0.81	0.85
101	Comoros	55	0.58	0.49	0.46	0.10	0.35	5.00	0.57	2.42
<b>Low human development</b>										
102	Pakistan	65	0.58	0.42	0.49	0.70	0.48	5.10	0.58	2.50
103	Sudan	81	0.52	0.50	0.48	0.10	0.00	4.50	0.49	2.73
104	Togo	120	0.45	0.59	0.45	0.20	0.18	5.40	0.62	0.58
105	Nepal	63	0.56	0.48	0.43	0.10	0.65	4.50	0.49	1.80
106	Yemen	95	0.59	0.48	0.37	0.80	0.05	7.60	0.94	2.08
107	Bangladesh	80	0.57	0.40	0.46	0.20	0.80	3.60	0.36	1.67
108	Haiti	97	0.46	0.50	0.45	0.10	0.48	4.00	0.42	1.42
109	Nigeria	102	0.44	0.58	0.37	0.70	0.20	5.40	0.62	1.75
110	Djibouti	77	0.30	0.50	0.53	0.60	0.33	5.80	0.68	2.17

111	Uganda	114	0.32	0.60	0.42	0.10	0.10	7.10	0.87	0.92
112	Mauritania	92	0.44	0.40	0.47	1.10	0.18	6.00	0.71	2.42
113	Zambia	109	0.27	0.68	0.34	0.20	0.35	5.70	0.67	1.17
114	Senegal	88	0.47	0.37	0.45	0.40	0.50	5.10	0.58	1.77
115	Côte d'Ivoire	103	0.38	0.44	0.47	0.90	0.20	4.60	0.51	0.82
116	Benin	113	0.48	0.40	0.38	0.10	0.83	5.70	0.67	0.75
117	Guinea	113	0.38	0.37	0.50	0.20	0.03	5.80	0.68	1.25
118	Gambia	127	0.35	0.39	0.47	0.20	0.03	4.80	0.54	2.08
119	Angola	123	0.34	0.36	0.51	0.50	0.17	7.20	0.88	0.75
120	Malawi	77	0.25	0.65	0.30	0.10	0.82	6.30	0.75	1.25
121	Central African Republic	116	0.32	0.39	0.41	0.10	0.65	4.90	0.55	0.83
122	Chad	119	0.35	0.39	0.36	0.00	0.03	6.30	0.75	0.92
123	Guinea-Bissau	122	0.33	0.38	0.34	0.20	0.64	6.00	0.71	0.58
124	Burkina Faso	108	0.36	0.23	0.38	0.10	0.35	6.80	0.83	0.92
125	Mozambique	121	0.24	0.37	0.36	0.10	0.65	5.90	0.70	0.75
126	Niger	115	0.34	0.16	0.34	0.10	0.03	8.00	1.00	1.25
127	Sierra Leone	124	0.23	0.33	0.27	0.10	0.03	6.50	0.78	0.92

**Table 5A: The OIC Member Countries - E-HDI Ranks**

Countries	E-HDI rank	HDI Rank	Life expectancy index	Education index	GDP index	Carbon Dioxide Emission Per capita (metric tons)	Freedom scores, 1998	Fertility Rate (Birth / Woman)	Family value Index	Faith Index
Maldives	1	13	0.69	0.90	0.63	1.2	0.18	5.4	0.62	2.50
Jordan	2	21	0.76	0.78	0.61	2.2	0.48	4.3	0.46	2.75
Brunei Darussalam	3	1	0.85	0.86	0.86	17.5	0.30 <sup>a</sup>	2.5	0.20	2.50
Algeria	4	24	0.74	0.69	0.66	3.6	0.18	7.2	0.88	2.73
Oman	5	11	0.77	0.67	0.82	8.5	0.25 <sup>a</sup>	5.5	0.64	2.12
Kuwait	6	3	0.85	0.74	0.84	27.2	0.35	2.7	0.23	1.82
Saudi Arabia	7	8	0.78	0.71	0.79	14.1	0.05 <sup>a</sup>	5.5	0.64	1.53
United Arab Emirates	8	4	0.83	0.74	0.87	37.5	0.18	2.9	0.26	2.42
Comoros	8	32	0.58	0.49	0.46	0.1	0.35	5.0	0.57	2.08
Qatar	10	5	0.74	0.79	0.87	80.9	0.35 <sup>a</sup>	3.3	0.32	2.08
Bahrain	11	2	0.81	0.85	0.84	31.5	0.35 <sup>a</sup>	2.3	0.17	2.42
Turkey	12	14	0.75	0.77	0.71	3.2	0.48	2.3	0.17	1.25
Pakistan	13	33	0.58	0.42	0.49	0.7	0.48	5.1	0.58	1.50
Malaysia	14	6	0.79	0.80	0.75	5.7	0.33 <sup>a</sup>	2.9	0.26	2.33
Libyan Arab Jamahiriya	15	7	0.76	0.84	0.72	6.8	0.00 <sup>a</sup>	3.3	0.32	3.67
Tajikistan	16	27	0.71	0.88	0.41	0.8	0.20	2.9	0.26	1.77
Guyana	17	23	0.63	0.88	0.61	1.9	0.83	2.3	0.17	1.67
Iran, Islamic Rep. of	18	20	0.73	0.75	0.68	4.4	0.17	2.8	0.25	2.35
Morocco	19	30	0.71	0.50	0.60	1.2	0.35	3.0	0.28	2.42
Tunisia	20	19	0.75	0.72	0.69	2.4	0.18	2.1	0.14	2.12
Syrian Arab Republic	21	25	0.77	0.71	0.60	3.3	0.00	3.7	0.38	1.67
Djibouti	21	39	0.30	0.50	0.53	0.6	0.33	5.8	0.68	1.17
Bangladesh	23	37	0.57	0.40	0.46	0.2	0.80	3.6	0.36	0.83
Sudan	24	34	0.52	0.50	0.48	0.1	0.00	4.5	0.49	1.50
Lebanon	25	10	0.80	0.83	0.63	5.1	0.18	2.2	0.16	2.42
Uzbekistan	26	18	0.73	0.91	0.53	4.6	0.20 <sup>a</sup>	2.3	0.17	3.67
Senegal	27	42	0.47	0.37	0.45	0.4	0.50	5.1	0.58	1.25
Albania	28	17	0.80	0.80	0.59	0.5	0.10 <sup>a</sup>	2.3	0.17	1.17
Turkmenistan	29	15	0.69	0.92	0.61	6.5	0.20 <sup>a</sup>	3.2	0.30	1.95
Mauritania	30	41	0.44	0.40	0.47	1.1	0.18	6.0	0.71	1.17
Egypt	31	28	0.70	0.62	0.60	1.6	0.17	2.9	0.26	1.17
Yemen	32	36	0.59	0.48	0.37	0.8	0.05 <sup>a</sup>	7.6	0.94	1.75
Indonesia	33	26	0.69	0.79	0.57	1.1	0.20	2.3	0.17	1.50
Azerbaijan	34	16	0.78	0.88	0.56	5.1	0.20 <sup>a</sup>	1.5	0.06	1.50
Kyrgyzstan	34	22	0.71	0.87	0.55	1.4	0.20 <sup>a</sup>	2.3	0.17	2.17
Nigeria	36	38	0.44	0.58	0.37	0.7	0.20	5.4	0.62	0.75
Suriname	37	9	0.76	0.90	0.61	5.2	0.65	2.1	0.14	2.45
Benin	37	44	0.48	0.40	0.38	0.1	0.83	5.7	0.67	1.25
Gabon	39	29	0.46	0.76	0.69	2.4	0.03 <sup>a</sup>	5.4	0.62	1.25
Mozambique	40	50	0.24	0.37	0.36	0.1	0.65	5.9	0.70	0.92
Kazakhstan	41	12	0.66	0.91	0.68	7.6	0.20 <sup>a</sup>	2.0	0.13	1.53
Guinea	42	45	0.38	0.37	0.50	0.2	0.03 <sup>a</sup>	5.8	0.68	0.92
Uganda	43	40	0.32	0.60	0.42	0.1	0.10 <sup>a</sup>	7.1	0.87	0.75
Niger	44	51	0.34	0.16	0.34	0.1	0.03 <sup>a</sup>	8.0	1.00	0.82
Cameroon	45	31	0.42	0.65	0.47	0.1	0.03	4.7	0.52	2.43
Chad	46	47	0.35	0.39	0.36	0.0	0.03 <sup>a</sup>	6.3	0.75	0.92
Togo	47	35	0.45	0.59	0.45	0.2	0.18	5.4	0.62	1.42
Burkina Faso	48	49	0.36	0.23	0.38	0.1	0.35	6.8	0.83	0.58
Guinea-Bissau	49	48	0.33	0.38	0.34	0.2	0.64	6.0	0.71	0.92
Sierra Leone	50	52	0.23	0.33	0.27	0.1	0.03 <sup>a</sup>	6.5	0.78	2.08
Côte d'Ivoire	51	43	0.38	0.44	0.47	0.9	0.20	4.6	0.51	0.92

Gambia	52	46	0.35	0.39	0.47	0.2	0.03	4.8	0.54	0.58	
--------	----	----	------	------	------	-----	------	-----	------	------	--

**TABLE 5B - OIC MEMBER COUNTRIES - HDI RANK**

Countries	HDI rank	E-HDI rank	Life expectancy index	Education index	GDP index	Carbon Dioxide Emission Per capita (metric tons)	Freedom scores, 1998	Fertility Rate (Birth / Woman)	Family value Index	Faith Index
<b>High human development</b>										
Brunei Darussalam	1	3	0.85	0.86	0.86	17.5	0.30 <sup>a</sup>	2.5	0.20	1.82
Bahrain	2	11	0.81	0.85	0.84	31.5	0.35 <sup>a</sup>	2.3	0.17	1.53
Kuwait	3	6	0.85	0.74	0.84	27.2	0.35	2.7	0.23	2.33
United Arab Emirates	4	8	0.83	0.74	0.87	37.5	0.18	2.9	0.26	2.45
Qatar	5	10	0.74	0.79	0.87	80.9	0.35 <sup>a</sup>	3.3	0.32	2.12
<b>Medium human development</b>										
Malaysia	6	14	0.79	0.8	0.75	5.7	0.33 <sup>a</sup>	2.9	0.26	1.25
Libyan Arab Jamahiriya	7	15	0.76	0.84	0.72	6.8	0.00 <sup>a</sup>	3.3	0.32	1.95
Saudi Arabia	8	7	0.78	0.71	0.79	14.1	0.05 <sup>a</sup>	5.5	0.64	3.67
Suriname	9	37	0.76	0.9	0.61	5.2	0.65	2.1	0.14	0.83
Lebanon	10	25	0.8	0.83	0.63	5.1	0.18	2.2	0.16	1.67
Oman	11	5	0.77	0.67	0.82	8.5	0.25 <sup>a</sup>	5.5	0.64	2.08
Kazakhstan	12	41	0.66	0.91	0.68	7.6	0.20 <sup>a</sup>	2.0	0.13	1.17
Maldives	13	1	0.69	0.9	0.63	1.2	0.18	5.4	0.62	2.50
Turkey	14	12	0.75	0.77	0.71	3.2	0.48	2.3	0.17	1.53
Turkmenistan	15	29	0.69	0.92	0.61	6.5	0.20 <sup>a</sup>	3.2	0.30	1.25
Azerbaijan	16	34	0.78	0.88	0.56	5.1	0.20 <sup>a</sup>	1.5	0.06	1.50
Albania	17	28	0.8	0.8	0.59	0.5	0.10 <sup>a</sup>	2.3	0.17	1.17
Uzbekistan	18	26	0.73	0.91	0.53	4.6	0.20 <sup>a</sup>	2.3	0.17	1.50
Tunisia	19	20	0.75	0.72	0.69	2.4	0.18	2.1	0.14	2.35
Iran, Islamic Rep. of	20	18	0.73	0.75	0.68	4.4	0.17	2.8	0.25	3.67
Jordan	21	2	0.76	0.78	0.61	2.2	0.48	4.3	0.46	2.42
Kyrgyzstan	22	34	0.71	0.87	0.55	1.4	0.20 <sup>a</sup>	2.3	0.17	1.42
Guyana	23	17	0.63	0.88	0.61	1.9	0.83	2.3	0.17	1.17
Algeria	24	4	0.74	0.69	0.66	3.6	0.18	7.2	0.88	2.42
Syrian Arab Republic	25	21	0.77	0.71	0.6	3.3	0.00	3.7	0.38	2.75
Indonesia	26	33	0.69	0.79	0.57	1.1	0.20	2.3	0.17	1.50
Tajikistan	27	16	0.71	0.88	0.41	0.8	0.20	2.9	0.26	1.50
Egypt	28	31	0.7	0.62	0.6	1.6	0.17	2.9	0.26	2.43
Gabon	29	39	0.46	0.76	0.69	2.4	0.03 <sup>a</sup>	5.4	0.62	1.17
Morocco	30	19	0.71	0.5	0.6	1.2	0.35	3.0	0.28	2.12
Cameroon	31	45	0.42	0.65	0.47	0.1	0.03	4.7	0.52	0.92
Comoros	32	8	0.58	0.49	0.46	0.1	0.35	5.0	0.57	2.42
<b>Low human development</b>										
Pakistan	33	13	0.58	0.42	0.49	0.7	0.48	5.1	0.58	2.50
Sudan	34	24	0.52	0.5	0.48	0.1	0.00	4.5	0.49	2.73
Togo	35	47	0.45	0.59	0.45	0.2	0.18	5.4	0.62	0.58
Yemen	36	32	0.59	0.48	0.37	0.8	0.05 <sup>a</sup>	7.6	0.94	2.08
Bangladesh	37	23	0.57	0.4	0.46	0.2	0.80	3.6	0.36	1.67
Nigeria	38	36	0.44	0.58	0.37	0.7	0.20	5.4	0.62	1.75
Djibouti	39	21	0.3	0.5	0.53	0.6	0.33	5.8	0.68	2.17
Uganda	40	43	0.32	0.6	0.42	0.1	0.10 <sup>a</sup>	7.1	0.87	0.92
Mauritania	41	30	0.44	0.4	0.47	1.1	0.18	6.0	0.71	2.42
Senegal	42	27	0.47	0.37	0.45	0.4	0.50	5.1	0.58	1.77
Côte d'Ivoire	43	51	0.38	0.44	0.47	0.9	0.20	4.6	0.51	0.82
Benin	44	37	0.48	0.4	0.38	0.1	0.83	5.7	0.67	0.75
Guinea	45	42	0.38	0.37	0.5	0.2	0.03 <sup>a</sup>	5.8	0.68	1.25
Gambia	46	52	0.35	0.39	0.47	0.2	0.03	4.8	0.54	2.08

Chad	47	46	0.35	0.39	0.36	0	0.03 <sup>a</sup>	6.3	0.75	0.92
Guinea-Bissau	48	49	0.33	0.38	0.34	0.2	0.64	6.0	0.71	0.58
Burkina Faso	49	48	0.36	0.23	0.38	0.1	0.35	6.8	0.83	0.92
Mozambique	50	40	0.24	0.37	0.36	0.1	0.65	5.9	0.70	0.75
Niger	51	44	0.34	0.16	0.34	0.1	0.03 <sup>a</sup>	8.0	1.00	1.25
Sierra Leone	52	50	0.23	0.33	0.27	0.1	0.03 <sup>a</sup>	6.5	0.78	0.92



## Bibliography

1. **Adelman, I and Morris, C.T. (1967)**, Society, Politics and Economic Development (Baltimore): Jolins Hopkins University Press, 1967.
2. **Ahluwalia M.S. (1976)**, 'Inequality, Poverty and Development'. Journal of Development Economics, 3.
3. **Ahmad, A. (2000)**, 'Economic Development in Islamic Perspective Revisited'. Review of Islam Economics. Journal of the International Association for Islamic Economics and The Islamic Foundation.
4. **Ahmad Khurshid (2000)**, Studies in Islamic Economics. The Islamic Foundation.
5. **Ahmad Khurshid (2001)**, Family life in Islam. The Islamic Foundation, Leicester.
6. **Ahmad, Ziaddin (1987)**, ' Islam and fulfilment of Basic Needs'. Islamic order 9, no.2.
7. **Anand Sudhir (1983)**, Inequality and Poverty in Malaysia. Measurement and Decomposition. World Bank Research Publications.
8. **Anand and Ravallion (1993)**, 'Human development in poor countries: on the role of private incomes and public countries'. Journal of economic perspective Vol. 7 no. 1 (1993) pp. 133-150.
9. **Anand, Sudhur and Sen, Amartya (1993)**, 'Human Development Index: methodology and measurement' .Human development Report Office Occasional Paper 19, United Nations Development Programme, New York, August.
10. **Anand, Sudhur, and Sen, Amartya (1999)**, 'The Income component in the HDI – Alternative Formulations'. Occasional Paper, United Nations Development Program, Human Development Report office, New York.
11. **Anand, Sudhir and Sen, Amartya (2000)**, " The Income component of the Human Development Index". Journal of Human Development, vol. 1, No. 1, 2000.
12. **Atkinson, A.B (1970)**, 'On the Measurement of Inequality'. Journal of Economic Theory, 2.
13. **Atkinson A.B. (1975)**, The Economics of Inequality. (Oxford: Clarendon Press).
14. **Baster Nancy (1972)**, Measuring Development. The Role and Adequacy of Development Indicators. Frank Cass. London.
15. **Berlin, Isaiah (1969)**, 'Two Concepts of Liberty' in Four essays on Liberty . Oxford University Press 1969, pp118 – 172.
16. **Camp, Sharon and Spiedel, Joseph (1987)**, The International Human Suffering Index. Washington D.C.: Population Crisis Committee.
17. **Chapra, M.U. (1992)**, Islam and the Economic Challenge. The Islamic Foundation and the International Institute of Islamic Thought.
18. **Chapra, M.U. (1993)**, Islam and Economic Development. The International Institute of Islamic Thought and Islamic Research Institute.

19. **Chapra, M.U. (2000)**, The future of Economics-An Islamic perspective. The Islamic Foundation.
20. **Chapra, M.U. (2000a)**, 'Why has Islam Prohibited Interest? Rationale behind the Prohibition of Interest'. Review of Islamic Economics. Journal of the International association for Islamic Economics and The Islamic Foundation. Number 9, 2000/1421H.
21. **Chenery, H. & Srinivasan, T.N. (1988)**, Handbook of Development Economics Volume 1. Elsevier Science Publishing company Inc.
22. **Choudhury, M. A. (1995)**, 'International Journal of Social Economics.' Vol. 22, No.3 1995. Pp 61-80. MCB University Press.
23. **Dasgupta, P (1995)**, An Inquiry into Well-being and Destitution. Clarendon Press. London.
24. **Dower, N (1999)**, 'Development, Peace and Violence: A Conceptual Exploration'. European Journal of Development Research 1999, Volume 2, No2.
25. **Dworkin, R (1981)**, What is equality? Part II: Equity of Resources, Philosophy and Public Affairs 10.
26. **Fergany, N (2002)**, 'In search of an adequate measure of Human Development, an Alternative Human Development Index, AHDI'. Arab Human Development Report 2002.
27. **Gaede Des (1983)**, Politics and Ethics: Machievelli to Niebuhr, Lanham, M.D: University of America Press.
28. **Gasper, Des (1999)**, 'Violence and Suffering, Responsibility and choice: Issues in Ethics and Development. European Journal of development Research, Dec 1999, Vol.11, No.2, pp 1-22
29. **Gasper, Des (2000)**, 'Development as freedom: taking economics beyond commodities- the cautious boldness of Amartya Sen'. Journal of International Development, Oct. 2000, Vol. 12, No.7, pp 989-1002
30. **Ghazali, Abu Hamid al- (1937)**, (505/1111), Al-Mustafa (Cairo: al Maktabah al -Tijariyyah al-Kuba, 1937).
31. **Goulet, Denis (1995)**, Development Ethics. A guide to theory and practice. The Apex Press, New York.
32. **Grant, J. (1978)**, Disparity Reduction Rates in Social Indicators. Washington, D.C.: Overseas Development Council.
33. **Griffin, K. (1977)**, 'Increasing poverty and changing ideas about development strategies'. Development and Change, Vol. 8 (1977), pp 491-508.
34. **Griffin, K. and Knight, J. (1989)**, 'Human Development: The Case for Renewed Emphasis'. Journal of Development Planning.
35. **Hausman, D.M and McPherson, M.S (1993)**, 'Taking Ethics Seriously: Economics and Contemporary Moral Philosophy'. Journal of Economic Literature Vol. XXXI, June 1993, pp 671-731.
36. **Hicks, D.A (1997)**, 'The Inequality Adjusted Human Development Index: A Constructive Proposal. World Development Report. Vol.25, no.8 pp1283-1298.
37. **Kothari, Rajni (1998)**, 'Sustainable Development. An Ethical Utopia for the 21<sup>st</sup> century'. Economies et Societes, Development, Croissance et Progres, vol xxxii, Jan 1998, pp.279-286.

38. **Kuznet, Simon (1955)**, 'Economic Growth and Income Inequality', American Economic Review 45, no.1, (March 1955).
39. **Kuznets, Simon (1966)**, Modern Economic Growth: Rate, Structure and Spread (New Haven, Conn: Yale University Press).
40. **Lichtenstadter, I (1958)**, Islam and the Modern Age (New York: Bookman Associates).
41. **Lux, A. (1990)**, Adam Smith's Mistake: How a Moral Philosopher Invented Economics and Ended Morality. Boston; Shambhala Publishers Inc.
42. **Mannan, M.A. (1989)**, Economic Development and Social Peace in Islam. Taha Publishers Ltd.
43. **Meier, G.M. and Rauch, J.E. (2000)**, Leading Issues in Economic Development (7<sup>th</sup> Ed.) Oxford University Press New York.
44. **Morris, M.D. (1979)**, Measuring the Condition of the World's Poor: The Physical Quantity of Life Index (New York: Pergamon Press).
45. **Morris, C.T. and Adelman, I (1980)**, 'The religious factor in Economic Development'. World Development Vol. 8, pp491-501 Pergamon Press. 1980
46. **Nozick, Robert (1974)**, Anarchy, State and Utopia. Blackwell, Oxford.
47. **Parkinson, B.K. (1967)**, 'Non- Economic factors in the economic retardation of the rural Malays.' Moslem Asian Studies, Vol.1, No. 1, (1967), pp31-46
48. **Perkins, D.H, Radet, S, Snodgrass, D.R, Gillis M, Roemer, M (2001)**, Economics of Development (5<sup>th</sup> Edition). W.W. Norton & Company, London.
49. **Raiser, Martin (1997)**, 'Destruction, Diversity, Dialogue: Notes on the Ethics of Development'. Journal of International Development: Vol. 9, No. 1, pp 39 –57 (1997)
50. **Rawls, John (1971)**, A Theory of Justice. Harvard University Press, Cambridge, M.A.
51. **Sanchez, O.A. (2000)**, 'The Legacy of Human Development: a tribute to Mahbub ul Haq'. Journal of Human Development Vol. 1, No. 1, 2000.
52. **Sen, Amartya (1972)**, On Economic Inequality. Clarendon Press Oxford.
53. **Sen, Amartya (1976)**, Poverty: An Ordinal approach to measurement. Econometrica 44, pp 219 – 231.
54. **Sen, Amartya (1982)**, Choice, Welfare and Measurement. Basil Blackwell. Oxford.
55. **Sen, Amartya (1983)**, 'Development : which may now?'. The Economic Journal, 93 (Dec 1983) pg. 745 –762
56. **Sen, Amartya (1984)**, 'Human Development: Means and Ends'. American Economic Review Vol. 84, No.2, May 1994
57. **Sen, Amartya (1985)**, 'Well-being, Agency and Freedom: The Dewey Lectures 1984'. Journal of Philosophy, April. 1985, 82(4) pp.169-203.
58. **Sen, Amartya, (1987)**, On Ethics and Economics. Basil Blackwell, New York.

59. **Sen, Amartya (1987a)**, 'The Standard of living: Lecture 1, Concepts and Critiques' in Sen et al., *The standard of living*. Ed. Geoffrey Hawthorn. Cambridge: Cambridge University Press 1987. Pp. 1 – 19.
60. **Sen, Amartya (1987b)**, 'The Standard of Living: Lecture II, Lives and Capabilities,' in Sen et al (1987), *The Standard of Living* Ed: Geoffrey Hawthorn. Cambridge University Press 1987.
61. **Sen, Amartya (1992)**, *Inequality Re-examined*. Clarendon Press: Oxford.
62. **Sen, Amartya (1999)**, *Development as Freedom*. Oxford University Press, New York.
63. **Sen Amartya (2000)**, 'A decade of Human Development'. *Journal of Human Development*. Vol 1 no.1, Feb. 2000.
64. **Sen, Amartya (2000a)**, 'Development as freedom (Review)'. *Ethics and International Affairs*, 2000, Vol.14 pp.149-151.
65. **Sen, Amartya (2000b)**, 'Development as freedom (Review)'. *Development in Practice*. Vol. 10, No. 2, May 2000.
66. **Siddiqi, M.N ( 1988)**, 'Guarantee of a minimum Level of living in Islamic State'. in Munawar Iqbal. Ed. *Distributive Justice and Need fulfilment in an Islamic Economy*. Leicester, London: The Islamic Foundation 1988.
67. **Smith, Admin (1790)**, *The Theory of Moral Sentiments*.(revised edition) section iv. 2.4 in D.D. Raphael and A.L. Macfie (Eds.), Clarendon Press, Oxford, 1975.
68. **Streeten, Paul (1979)**, 'Basic Needs : Premises and Promises'. *Journal of Policy Modelling* Volume 1, pp136 –48 (1979)
69. **Streeten, Paul (1980)**, 'From Growth to Basic Needs' in *Poverty and Basic Needs* p.8, The World Bank, Sept. 1980.
70. **Streeten, Paul (1981)**, *Development Perspectives*. London: Macmillan.
71. **Streeten, Paul; Burki, S; Mahhub ul Haq; Hicks; and Stewart, F (1981)**, *First Things First: Meeting Basic Needs in Developing Countries*. World Bank, Oxford University Press.
72. **Streeten, Paul (1994)**, 'Human Development: Means and Ends.' *American Economic Review* vol. 84, no. 2, May 1994.
73. **Streeten, Paul (2000)**, 'Looking Ahead: Areas of Future Research in Human development'. *Journal of Human Development* Vol. 1 No. 1 Feb. 2000.
74. **Stigler George (1978)**, 'Wealth and Possibly Liberty'. *Journal of Legal Studies*. June 1978
75. **Strinivasan, T.N. (1994)**, 'Human Development; A New Paradigun or Reinvention of the Wheel?'. *Human Development* Vol. 84, No.2 pp. 238-243
76. **Sugden, Robert (1993)**, 'Welfare, Resources and Capabilities: A review of Inequality Re-Examined by Amartya Sen'. *Journal of Economic Literature*. Dec.1993, 31(4), pp. 1947 – 62.
77. **Sutchiffe, C.R. (1975)**, 'Is Islam an obstacle to development? Ideal patterns of belief versus actual patterns of behaviour.' *The Journal of Developing Areas*, Vol. 10 (Oct. 1975), pp. 77 – 82.
78. **United Nations Development Program (UNDP), Arab Human Development Report (AHDR 2002)**, New York, Oxford University Press

79. **United Nations Development Program (UNDP 1990)**, Human Development Report (HDR), New York, Oxford University Press.
80. **UNDP (1991)**, Human Development Report. New York, Oxford University Press
81. **UNDP (1992)**, Human Development Report. New York, Oxford University Press
82. **UNDP (1993)**, Human Development Report. New York, Oxford University Press.
83. **UNDP (1994)**, Human Development Report. New York, Oxford University Press.
84. **UNDP (1995)**, Human Development Report. New York, Oxford University Press.
85. **UNDP (1996)**, Human Development Report. New York, Oxford University Press.
86. **UNDP (1997)**, Human Development Report. New York, Oxford University Press.
87. **UNDP (1998)**, Human Development Report. New York, Oxford University Press.
88. **UNDP (1999)**, Human Development Report. New York, Oxford University Press.
89. **UNDP (2000)**, Human Development Report. New York, Oxford University Press.
90. **UNDP (2001)**, Human Development Report. New York, Oxford University Press.
91. **UNDP (2002)**, Human Development Report. New York, Oxford University Press.
92. **United Nations Research Institute on Social Development, (UNRISD, 1970)**, Contents and Measurements of Socio-economic Development. United Nations.
93. **Watt, W.M. (1972)**, The Influence of Islam on Medieval Europe (Edinburgh University Press, 1972).
94. **Weaver, J & Jameson, K. (1977)**, Economic Development: Competing Paradigms – Competing Parables (Washington: AID/DSP).
95. **Wilber C.K. and Jameson, K.P. (1980)**, ‘Religious Values and Social Limits to Development’ World Development Vol. 8, pp. 467 – 479. Pergamon Press Ltd. 1980.
96. **Wilson Rodney (1997)**, Economics, Ethics and Religion: Jewish, Christian and Muslim Thought. Macmillan Press Ltd. London.
97. **Yotopoulos, P. (1988)**, ‘Distributions of Real income: Within Countries and by World Income Classes’. Occasional Paper no. 23, Development Research Institute, Tilburg University.
98. **Zubair Hasan (1997)**, ‘Fulfilment of Basic Needs: Concepts, Measurement, and Muslim Countries Performance’. IIUM Journal of Economics & Management 5, No.2 (1977) : 1-38. International Islamic University, Malaysia Press.

## Web Sties:

1. <http://www.cia.gov/cia/publications/factbook/>
2. <http://hdr.undp.org/hdr2002/hdi.pdf>
3. <http://www.undp.org/rbas/ahdr/CompleteEnglish.pdf>

4. <http://unstats.un.org/unsd/demographic/ww2000/table2a.htm>
5. <http://www.divorceform.org/gul.html>
6. <http://hdr.undp.org/reports/global/1995/en/default.cfm>
7. <http://www.oic-oci.org>
8. <http://www.sesrtcic.org>
9. <http://freedomhouse.org/ratings/>