

**The Basis for a Discipline  
of  
ISLAMIC ENVIRONMENTAL LAW**

Othman Abd-ar-Rahman Llewellyn

This paper was originally presented at the conference on Islam and ecology held at the Center for the Study of World Religions, Harvard Divinity School, in 1998, and published in *Islam and Ecology: A Bestowed Trust*, edited by Richard C. Foltz et al. (Cambridge, Mass.: Center for the Study of World Religions, Harvard Divinity School, 2003). Grateful acknowledgment is made for permission to print this revised version.

**Table of Contents**

Introduction: Why a Discipline of Islamic Environmental Law?.....	1
Legal and Ethical Philosophy.....	2
<i>Usūl al-Fiqh</i> : Islamic Jurisprudence.....	6
<i>Fiqh</i> : Substantive Law.....	11
Allocation and Accountability in the Use of Natural Resources.....	14
Legal Instruments.....	18
Legal Sanctions.....	28
<i>As-Siyāsah ash-Shar‘īyah</i> : <i>Sharī‘ah</i> -based Policies.....	30
Establishment of the Discipline.....	41
Notes.....	44

**Introduction: Why a Discipline of Islamic Environmental Law?**

Imagine the planet Earth as a ship, an ark of Noah sailing round the sun with its precious cargo, the species of life, all interlinked and united in destiny. The prophet Muhammad, upon him be peace and the blessing of God, used the parable of a ship to illustrate the responsibilities arising from interdependence. The passengers in their various positions on deck and below required each other’s services, as in the distribution of drinking water. In his impatience to obtain water, one of the passengers below deck began to chop a hole in the hull with an ax, claiming his right to drink. “Now, if they were to hold back his hands,” said the Prophet, “they would save both him and themselves. But if they were to leave him alone, they would cause both him and themselves to perish.”<sup>1</sup> The passenger exemplifies the behavior and attitude of contemporary human beings, who in their impatience to extract from nature the goods that they desire, have significantly diminished the capacity of the earth to support life. Environmental law is the means by which their hands may be restrained.

In recent decades, environmental crises of unprecedented magnitude have spurred the development of the new and growing discipline of environmental law. Although the profession of environmental law as such is only a few decades old, it is now firmly established, and a substantial body of literature has already been written.

Like all the countries of the earth, the Islamic lands are afflicted by intensifying environmental problems: desertification, extinction of species and varieties, destruction of the forests, contamination of the water, soil, and air,

depletion of atmospheric ozone, climate change, and the degradation of farmlands, rangelands, and fisheries. Yet even though Islamic law is one of the most widespread legal and ethical systems on earth, adhered to by nearly a fifth of humankind, in modern times Muslim jurists have lagged far behind in contributing solutions.

Virtually all environmental legislation in Muslim countries is borrowed from the industrialized West, in spite of the many principles, policies, and precedents of Islamic law governing the protection and conservation of the environment and the use of natural resources. Much of this legislation remains inadequate and unenforced. One reason is that many people in the Muslim world have little sympathy with laws that are derived from alien beliefs and values and have no legitimacy in their eyes. A number of *sharī'ah* practices do continue to govern or influence the ways in which people use their natural resources, particularly in rural areas. In most Muslim countries, however, these practices do not receive official recognition, and even where Islamic legislation is constitutionally recognized, it is seldom applied effectively or creatively. The exceedingly rich contributions that Islamic law and ethics have to offer remain largely unarticulated and unrealized.

Although environmental law is not yet recognized as an independent discipline within Islamic law, ample bases do exist for its development. Much as the discipline of Islamic economics has been formulated and developed in recent decades, that of environmental law can be derived from the objectives, principles, precepts, and instruments of Islamic jurisprudence, as well as the myriad substantive rulings of the *sharī'ah* that pertain to the environment. The purpose of this paper is to examine some of the essential elements that should be considered in the course of formulating the discipline of Islamic environmental law, including issues that pertain to environmental policy and planning in Islamic society, and practicalities involved in establishment of the discipline.

## **Legal and Ethical Philosophy**

### *Law and Ethics: Their Fundamental Unity in Islam*

Islam, it is often said, is in its essence a religion of law. In the context of Western civilization, however, the very term “Islamic law” may be misleading. At worst, the idea of religious law may conjure an image of unreasonable restrictions and harsh punishments. At best, law in the West is considered rather dry and somewhat distasteful, even if it is essential for the functioning of civilized society and the defense of individual freedoms. It is viewed almost as a necessary evil. After all, why does a person seek a lawyer? In order to press a lawsuit, perhaps, or to defend oneself against one; to find out how to pay the minimum amount in taxes; or to secure the most advantageous terms in a business contract, a divorce, or the like. How far from the spiritual and ethical values of religion! Despite the history of canon law in the West, the idea of religious law seems almost self-contradictory.

In the context of Islamic civilization, however, the Law, or *sharī'ah*, is perceived altogether differently. The *sharī'ah* is, literally, the Way, the path to water, the source of life. *Fiqh*, the science of law, means understanding; understanding how to do the will of the Merciful, Compassionate Lord of all beings; to live life – individually and collectively – in the most moral and ethical way. Indeed, the science of ethics and that of law are essentially one and the same. The most common reason that one seeks out a *muftī*, or expert in Islamic law, is to ask what is the most ethical, moral course of action in a given situation, the act most pleasing to the Lord of all beings, and leading most surely to eternal spiritual bliss.

The *sharī'ah* embraces in its scope every human act, including religious devotions and purely ethical issues, as well as the various fields of law known to the modern world, such as constitutional and international law, family law, penal law, law of contracts, property law, and indeed, environmental law. Each act is examined to determine how much good and harm it may lead to, not only in the material realm of the present world, but also in the spiritual realm of the hereafter.

Acts are evaluated according to a five-tiered scale; an act may be obligatory, recommended, permitted, reprehended, or prohibited. The law is thus not only prohibitive and injunctive, but also prescriptive, charting the ethical course of what “ought” to be, setting forth ideal standards of behavior that can only be enforced by individual and social conscience, in addition to the essential imperatives enforced by the jurisdiction of the courts. Even when the courts fail, or where Islamic courts do not exist, the *sharī'ah* remains the eternal norm incumbent on all believers.

#### Tawhīd: *The Unity of God, and the Unity of His Creation*

Among the essential aspects of *tawhīd*, the affirmation of God’s oneness, is to recognize that God is the one and only Lord of every created being. Therefore every single creature must be treated with *taqwā*, or reverence toward its Creator, and, to serve the Lord of all being, one must do the greatest good one can to His entire creation.

Every prescribed prayer begins with the praise of God as *rabb al-‘ālamīn*, which may be translated as “Lord of the worlds” or “Lord of all beings.” The word *rabb* denotes, on the one hand, the Lord and Master to be served and, on the other, the Sustainer Who brings each being into existence, then nurtures and develops it until its destiny is fulfilled. In explaining the word *‘ālamīn*, Qur’anic commentators have said that every species of God’s creatures is a world unto itself, and likewise every generation.<sup>2</sup> God is thus the Lord of every species, every generation, and every individual created being.

God – be He exalted – has not made any of His creatures worthless: the very fact that He has created a thing gives it value. Moreover, He has created each thing *bi ’l-haqq*, in truth and for right. “Not for sport have We created the heavens and the earth and all that is between them. We have not created them but

for truth” (Qur’an 44:38–39). “Those...who reflect on the creation of the heavens and the earth: Our Lord, Thou hast not made this in vain – Glory to Thee!” (Qur’an 3:191).

Every single form of life is the product of a special and divine creation and warrants special respect. Each species and variety is unique and irreplaceable. Moreover, each created being, however minute, is a miracle, a wondrous sign that points beyond itself to its Maker, His wisdom, and His mercy; each is a portent filled with meaning and lessons to be learned. Furthermore, each creature glorifies its Creator, even if we do not understand its glorification. “The seven heavens and the earth and all that dwell therein proclaim His glory: There is not a thing that does not celebrate His praise, but you cannot understand their praises...” (Qur’an 17:44).

Beyond its intrinsic value, each thing has practical or instrumental value as a component of the ecosystems that support life on earth. An observation by ‘Izz ad-Dīn ibn ‘Abd as-Salām regarding human society pertains equally to the creation as a whole: “Know that God has created His creatures and made them to depend upon each other, so that each group would support the welfare of the others.”<sup>3</sup> Through its divinely ordained roles, each being contributes to the welfare of the whole. This leads to a cosmic symbiosis (*takāful*) by which God sustains all living things. The prophet Muhammad, upon him be blessings and peace, is reported to have declared, “Created beings are the dependents of God, and the creatures dearest unto God are they who do most good to His dependents.”<sup>4</sup> The universal common good is a principle that pervades creation, and an important implication of God’s unity, for one cannot truly serve the Lord of all beings except by working for the common good of all.<sup>5</sup>

#### Taqwā: *The Attitude of Reverence, Care, and Carefulness*

God is the Lord of every thing, and He will try us with regard to His creatures: so we are to revere Him in every thing. “Most noble of you in the sight of God is he who is most reverent” (Qur’an 49:13).

We must revere Him in our treatment of every man, every woman, every child. We must revere Him in our treatment of every beast, every bird, every insect, every plant. Each creature, though it be almost nothing in itself, is a creature of Him who is Tremendous beyond all measure; a sign of Him who has created it; and a world that will never be repeated, and by its being glorifies its Maker.<sup>6</sup> Nothing is insignificant. None has been created in vain; all are created for right. We must therefore treat none wantonly, and take no life except for right.<sup>7</sup>

#### Rahmah and Ihsān: *Compassion and Beneficial Works*

The attitude of reverence must find its completion in compassion and beneficial works. Good works are the very purpose of life and death. “Blessed is He in Whose Hand is dominion – and He has power over every thing: He Who

has created death and life to try you, which of you work the most good” (Qur’an 67:1–2).<sup>8</sup>

The prophet Muhammad, upon him be peace and the blessing of God, said that God has prescribed goodness with regard to every thing, and that in goodness to every living creature is a reward.<sup>9</sup> He also said, “The compassionate are shown compassion by the All-Compassionate. Show compassion to those on earth, and He Who is in heaven will show compassion to you.”<sup>10</sup>

### *Khilāfah: Stewardship*

He it is Who has made you stewards of the earth, and raised some of you by degrees above others, so that He might try you in that which He has bestowed upon you... (Qur’an 6:165)

Thus We have made you to succeed one another as stewards on the earth, that We might behold how you acquit yourselves. (Qur’an 10:14)

The Prophet, upon him be blessings and peace, declared, “The world is beautiful and verdant, and verily God, be He exalted, has made you stewards in it, and He sees how you acquit yourselves.”<sup>11</sup>

The position of each human being as a *khalīfah* on the earth has received considerable attention by Muslim writers during the past century. Much of the discussion has misrepresented the concept, however, by overemphasizing the privilege and honor implied by the term. Perhaps, under the influence of European Humanism, and in response to allegations that Islam gives too little value to the human being, Muslim writers have felt the need to prove that man has exalted status. As enthusiasm for “development” and “progress” swept the poorer countries of the world, some reformist thinkers even interpreted the concept of *khilāfah* as a mandate to exploit and develop the earth on behalf of God.<sup>12</sup>

But is *khilāfah* essentially a privilege? It is an honor, yes, for humans are created “in the best of forms,” that is, with the greatest potential for good. But if we do not realize this potential, we are rejected as “lower than the low.”<sup>13</sup> *Khilāfah* is not a privilege, but a trust, a responsibility, and a trial, for God has created death and life to try us, which of us work the most good. Not for himself does a *khalīfah* act, but for his Lord, and according to his Lord’s purposes. On the Day of Judgment, this *khilāfah* will be a source of shame and torment to the one who does not fulfill it. To be a *khalīfah* is not to receive, it is to serve. A *khalīfah* is a shepherd, and will be asked about his flock. Each human being is a shepherd over all the lives on Earth that he may touch for good or ill, and shall be asked regarding every atom’s weight of good that he or she has caused, and every atom’s weight of harm.<sup>14</sup>

Human beings have been given enormous ability to do both good and evil; with ability comes responsibility. As the prophet Muhammad, upon him be peace and the blessing of God, declared, with each day’s dawning one rises to bargain with one’s soul as a stake, and either ransoms it or ruins it.<sup>15</sup> Each day between rising in the dawn and settling into sleep, we build and destroy uncounted lives.

Whatever we do, we will not leave this world unchanged. We must take heed, then, that we leave it for the better.<sup>16</sup>

We humans bear a trust that the heavens and the earth and the mountains shrank from bearing. In managing the earth, we have proven ourselves thoroughly unjust and foolish.<sup>17</sup> We cannot fulfill this trust unless the horizons of our care extend through space and time to embrace all the species, individuals, and generations of God's creatures from today until the Day of Resurrection, in the world of the living and the world of the return. Then, and only then, will we be *khalīfahs* on the earth.<sup>18</sup>

### ***Usūl al-Fiqh: Islamic Jurisprudence***

At least as important to the discipline of environmental law as substantive legislation is the legal methodology or jurisprudence of Islam, *usūl al-fiqh*, literally, the roots or sources of *fiqh*. Rulings found in the basic texts of Islamic law and in the books of *fiqh* pertain in many cases to particular technologies and practices that are no longer widely used, while new practices and technologies are emerging daily. Knowledge of *usūl al-fiqh* is indispensable to discover the objectives and principles embodied in particular rulings or precedents and to apply them to new practices and technologies.

#### *Sources and Methods of Islamic Jurisprudence*

Although grossly oversimplified, the following discussion of the sources and methods of Islamic jurisprudence may serve to indicate some basic elements of *usūl al-fiqh*. Each of the schools (*madhāhib*) of Islamic law represents a broad methodological approach, in which the various sources and methods are given different degrees of authority. Rules for applying these sources and methods also tend to differ both among the *madhāhib* and within them.

*The basic sources* – The two primary sources in all schools of Islamic law are the legal texts of the Qur'an and the Prophetic *sunnah*, or example. The text of the Qur'an is universally recognized; its legal rulings pertaining to environmental law are relatively few and general, and there is little divergence in their interpretation. *Ahādīth* constitute the main textual source of the *sunnah*; they are graded according to their degree of authenticity; *ahādīth* of weaker authenticity give way to those which are stronger if contradicted by them, but provide valuable details and insights where they are complementary.

Sources for understanding the Prophetic *sunnah* that are supplementary to the *ahādīth* include the legal opinions (*fatāwā*) of the companions of the Prophet, upon him be blessings and peace; reports of their deeds and sayings (*āthār*); the established practice (*'amal*) of Al-Madīnah, the early Islamic capital where most of the Prophet's companions and their successors lived; and rulings on which there was universal or near universal consensus (*ijmā'*) by the early generations. Of these sources, *ijmā'* is authoritative in every school of Islamic law, while the others have varying degrees of authority in the different schools. Interpretation of

these sources, as of the *ahādīth*, requires knowledge of the context and significance of each case and the principles that pertain to it.

*Methods of reasoning: ijtihād* – A jurist’s exertion of his reason to formulate the principles of the revealed law and apply them to new problems or new situations is known as *ijtihād*. On one hand, *ijtihād* is a source of Islamic law when one draws upon the opinions of previous jurists; on the other, it is the methodology of reasoning to make independent judgments. The primary method of *ijtihād* is reasoning by juristic analogy (*qiyās*).

Analogical rulings, however, may give way to considerations deriving from stronger or more fundamental values, which are given preference (*istihsān*) over them; where no suitable precedent is to be found, judgments may be made on the basis of public welfare (*al-masālih al-mursalah*), those unrestricted benefits which are neither bound directly to texts of the Qur’an and *sunnah*, nor can be deduced from them by analogical reasoning. Other methods of *ijtihād* include *sadd adh-dharā’i*, by which outwardly legitimate means may be prevented from being used as pretexts for illegitimate ends, and *istishāb al-’urf as-sālih*, by which customary practices and definitions (*’ādah* and *’urf*) may acquire legal force when they accord with the aims of the *sharī’ah*. These methods involve much inductive reasoning and are enormously important in clarifying the objectives (*maqāsid*) of the *sharī’ah*. Drawing on the totality of Islamic texts rather than isolated texts, they provide the broad perspective to ensure that one does not miss seeing the forest for the trees. At the same time, because these methods are less precise than *qiyās*, they require sound judgment and discernment.<sup>19</sup>

In our enthusiasm to bring about the welfare of society, and our certainty that we know what that welfare is, we are liable to perceive “benefits” that are not derived from the values of the *sharī’ah*, or even contradict those values. Hence the need to exercise caution in wielding the sword of *al-masālih al-mursalah*. Indeed, every tyrant in the Muslim world who enacts an unjust law is sure to seek a religious justification, and if he cannot find a text by which to justify himself, he will usually resort to *al-masālih al-mursalah* or *sadd adh-dharā’i*.

### *The Ultimate Objectives (Maqāsid) of Islamic Law*

A fundamental principle of Islamic law is that “matters are evaluated in light of their objectives (*maqāsid*).<sup>20</sup> *Maqāsid ash-sharī’ah* is a distinctive branch of knowledge within, or some might say above, *usūl al-fiqh*; the importance of the *maqāsid* is receiving ever greater attention by contemporary Muslim jurists.

*Masālih al-khalq: the universal common good* – The ultimate objective of the *sharī’ah* is defined as the welfare of God’s creatures (*masālih al-khalq* or *masālih al-’ibād*), encompassing both our immediate welfare in the present and our ultimate welfare in the hereafter. It also encompasses the universal common good, the welfare of the entire creation (*masālih al-khalqi kāffah*). This is a distinctive characteristic of Islamic law. It means, first, that both material and nonmaterial dimensions must be taken into account, and second, that the welfare

of humans and of nonhuman sentient beings must be considered in the course of planning and administration. No species or generation may be excluded from consideration, for every atom's weight of good and every atom's weight of harm that has resulted from our actions will be weighed on the Day of Judgment.<sup>21</sup>

*The five fundamental necessities: dīn, life, posterity, reason, and property* – Muslim jurists have generally agreed that there are at least five essential prerequisites that must be safeguarded for human society to function and prosper. The first is *dīn*, or religion, the foundation of beliefs, moral values, and ethics upon which Islamic society is built. Life (*nafs*) is the second prerequisite; without safeguarding the lives of its members, no society can function. Third, a society's posterity (*nasl*) must be safeguarded through ensuring that its progeny are born and raised within secure family relationships. Fourth, reason (*'aql*) must be safeguarded to ensure rational behavior, both individually and collectively. Finally, rights to property (*māl*) are necessary to enable individuals to secure their livelihoods. Among the many rulings pertaining to these necessities, the *hadd* penalties for apostasy, murder, adultery, use and sale of intoxicants, and theft are cited as examples of the means by which they are safeguarded.

What are the implications for environmental law? It is now well recognized that meeting the basic needs of society through development is a prerequisite for effective environmental conservation. Furthermore, these necessities clearly apply to the welfare both of present and future generations, explicitly in the case of posterity and implicitly with regard to religion, life, reason, and property.

It would be worth considering to what extent the *sharī'ah* safeguards these necessities for species other than human beings. In the Qur'an, God declares that "There is no animal on the earth, nor any bird that wings its flight, but it is an *ummah* (community, society) like yourselves" (Qur'an 6:38). The *sharī'ah* safeguards the lives of individual animals from wanton destruction. The posterity of animals is protected by the ruling that captive animals should be allowed to breed in season and the position of many *fuqahā'* against surgical sterilization. The sanity and psychological well-being of animals is regarded in the prohibition on imprisoning animals in unsuitably cramped conditions and the view of many *fuqahā'* that it is morally wrong and illegal to keep wild animals in captivity as pets, as well as in the prohibition on slaughtering a young animal within view of its parents, and the prohibition of holding fights between animals. While animals do not have rights to property, their rights to adequate maintenance are safeguarded.

*Masālih and mafāsīd: benefits and detriments* – In Islamic jurisprudence all acts are evaluated in terms of their consequences as social goods and benefits (*masālih*) and social detriments and evils (*mafāsīd*). A major challenge of contemporary planning methodology is the search for reliable, comprehensive and efficient means to measure and weigh costs and benefits. Muslim jurists will likewise have to face this challenge. The objectives of Islamic law demand that total benefits, or *masālih*, be maximized and that total costs, or *mafāsīd*, be minimized. The concepts of *masālih* and *mafāsīd* are not identical to Western ideas of benefits and costs, although there is much common ground.



How does one measure total benefits and costs, material and nonmaterial, for humans and other creatures? Quantitative measures are far easier to compare and weigh than qualitative measures; if convertible to monetary values, they can also be entered into economic equations, such as national accounts. Nonmaterial values are hard to quantify and to express in monetary terms; however, a more complete and accurate means of assessing effects on all creatures than the language of finance is yet to be discovered. Might the methods of Islamic jurisprudence hold promise in this regard?

### *Principles for Weighing Benefits and Detriments*

Through the comparative study of similar rulings, jurists such as As-Subkī, As-Suyūfī, and Ibn Nujaym formulated general legislative principles (*qawā'id fiqhīyah*), which serve as guidelines in solving particular legal problems.<sup>22</sup> Several of these legislative principles are central to *'ilm al-muwāzanāt*, the science of measuring benefits and detriments, and *'ilm al-awlawīyāt*, the science of establishing priorities.

Muslim legislators, planners, and administrators should always aim at the universal common good of all created beings. This means that they must strive to harmonize and fulfill all interests. However, when it is impossible to satisfy all immediate interests, the universal common good requires prioritization by weighing the welfare of the greatest number, the importance and urgency of the various interests involved, the certainty or probability of benefit or injury, and the ability of those affected to secure their interests without assistance. The basic principle has been articulated thus:

What is required is to safeguard all benefits and bring them to completion, and to eliminate all detriments or at least minimize them. And if they prove irreconcilable, it is to safeguard the greater good by the exclusion of the lesser, and to remove the greater harm by acceptance of the lesser. This is the mandate of the Law.<sup>23</sup>

*Universal welfare and individual welfare* – The interests of society as a whole take priority over the interests of individuals and particular groups when they cannot be reconciled. Among the principles of Islamic law are: “Priority is given to preserving the universal interest over particular interests,” and “The general welfare takes priority over individual welfare.” From this basis is derived the principle that “A private injury is accepted to avert a general injury to the public.”<sup>24</sup> Sacrificing a private interest for the purpose of achieving and protecting the common interest of the public is surely accepted in one way or another by every society and legal system. The problem lies in working out the details and defining the limits so that individual rights are not obliterated in the name of the public interest.

A particular question that needs to be addressed is, at what point does the welfare of the majority become universal? To be sure, Islamic law does not countenance the tyranny of the majority over minorities. The interest of a 60 percent majority is certainly not universal. What about a 96 percent majority, or a 99.6 percent majority? How small must the number of individuals be for their

interests to be regarded as private or particular, and how large must a majority be for its interests to be considered public or universal?

*Greater needs and lesser needs* – Social goods or interests are to be assessed according to their importance and urgency. There are necessities (*darūrīyāt*), which are absolutely indispensable to preserve religion, life, posterity, reason, and property; then needs (*hājīyāt*), which if unfulfilled will lead to real hardship and distress; and finally supplementary benefits (*tahsīnīyāt*), which involve the refinement and perfection of ethics and the enhancement of life. Priority is given to fundamental necessities if these conflict with less acute needs or supplementary benefits, and to the lesser needs if these conflict with supplementary benefits. Pertinent juristic principles are: “The lesser of two evils shall be chosen,” “Severe damage shall be removed by means of lighter damage,” and “If one of two opposing detriments is unavoidable, the more injurious is averted by commission of the less injurious.”

*The interests of the powerful and the powerless* – Consideration is to be given to the abilities of various groups to secure their welfare without the government’s intervention. The governing authorities are obliged to protect the disadvantaged and less influential groups in accordance with the juristic principles that “The averting of harm from the poor takes priority over the averting of harm from the wealthy,” and “The welfare of the poor takes priority over the welfare of the wealthy.”<sup>25</sup>

*Averting of detriments* – The governing authorities have the obligation to take all necessary measures and actions to avoid, prevent, or minimize damage before it occurs in application of the principles “There shall be no infliction of damage and no retaliation through damage,” “Damage shall be removed,” and when it cannot be removed entirely, “Damage shall be removed to the extent that is possible.”

When benefits bring about unavoidable detriments of similar or greater magnitude, the juristic principle to be applied is, “The averting of harm takes precedence over the acquisition of benefits.” In line with this principle, a factory may be closed down, mineral extraction permits may be denied, or housing may be prevented in environmentally sensitive locations.<sup>26</sup> Herein is a strong justification for adoption of the precautionary principle, namely, that activities which involve a risk of irreversible or serious harm should be prevented. On the other hand, this could in some cases be seen to conflict with another principle of Islamic law, namely, that priority is to be given to actual or known interests in case of conflict with conjectural or probable interests of similar importance; costs and benefits that are certain are to be given greater weight than uncertain costs and benefits. Both of these principles are valid; but could the latter be used to approve a project of which the economic benefits are known, when scientific information regarding harmful impacts to human health and ecosystems is incomplete or inconclusive? Among the questions that jurists should examine are: how are these two principles to be reconciled, and how should the precautionary principle be articulated in Islamic law?

## **Fiqh: Substantive Law**

The substantive rulings of the *sharī'ah* that pertain to environmental law are found in the books of *fiqh*, mainly in the branch of *mu'āmalāt*, or transactions, under topics such as revival of vacant lands (*ihyā' al-mawāt*), protected areas (*himā*), the use of water for irrigation and livestock (*shirb*), land grants (*iqṭā'*), leases (*ijārah*), maintenance (*naḥāqah*), laws of hunting and slaughter (*sayd* and *dhabā'ih*), property (*milk* and *māl*), economic transactions (*buyū'*), reconciliation (*sulh*), endowments (*awqāf*); and alms and taxes (*zakāh*, *sadaqah*, *'ushr*, and *kharāj*), which are discussed in both *mu'āmalāt* and ritual devotions (*'ibādāt*). Principles related to land use are also found in the branch of law dealing with public policy and administration (*siyāsah*), and in the branch covering crimes and penal law (*jināyāt* and *'uqūbāt*), under usurpation (*ghasb*) and damages (*talaf*).<sup>27</sup>

### *Precepts from the Laws of Property*

The precepts that pertain to the laws of property are of fundamental importance to environmental law. Ultimately, God alone is the owner of the heavens and the earth and all that they contain. "People do not in fact own things, for the only real owner of things is their Creator, be He glorified and exalted. Indeed, people do not own anything but their usufruct in the manner permitted by the revealed Law."<sup>28</sup> All properties and resources are held in trust by human beings, to be used only in accordance with their divinely ordained purposes. Therefore, while the right to *hold* private property is rigorously safeguarded, there are important restrictions on its *use*. Among the most important of these restrictions are those which pertain to the abuse of rights.<sup>29</sup>

The prophet Muhammad, upon him be peace and the blessing of God, declared that "There shall be no infliction of damage and no retaliation through damage."<sup>30</sup> Accordingly, Muslim jurists have ruled that a person invalidates his right if by exercising it he intends to cause damage to another; or if its exercise results in damage to another without corresponding benefit to its possessor; or if in spite of bringing benefit to himself, its exercise results in either excessive damage to other individuals or general damage to society.<sup>31</sup>

The ethic governing the use and development of the earth's resources was put thus by 'Alī ibn Abī Tālib to a man who had reclaimed and developed abandoned land: "Partake of it gladly, so long as you are a benefactor, not a despoiler; a cultivator, not a destroyer."<sup>32</sup>

### *Prohibition of Waste and Corruption in the Earth*

Do not spread corruption in the earth after it has been so well ordered. And call on Him in fear and hope: surely, the mercy of God is near to those who do good. (Qur'an 7:56)

...Waste not by excess, for He loves not those who waste. (Qur'an 6:141 and 7:31)

Corruption in the earth (*al-fasād fi 'l-ard*), including destruction of the environment, is forbidden in the Qur'an, as are wasteful overconsumption and

extravagance (*isrāf* and *tabdhīr*).<sup>33</sup> That the prohibition of overconsumption applies in small matters as well as large, and in times of abundance as well as scarcity, was emphasized by the prophet Muhammad, upon him be peace and the blessing of God, when he forbade that a person waste water even in washing for prayer beside a flowing river.<sup>34</sup> He likewise forbade the felling of trees without justification.<sup>35</sup>

These prohibitions clearly demand that all natural resources be used frugally and efficiently, and that pollution be prevented, reduced, and cleaned up. Muslim jurists will have to translate these general precepts into specific policies and regulations governing the modern technologies by which the earth's resources are extracted, processed, used, and returned to the environment as waste, and governing trade in the goods derived from natural resources.

Jurists will need to translate the general prohibition of corruption in the earth into environmental impact regulations, with environmental standards designed to safeguard human health and the environment. Environmental impact assessment procedures can ensure that environmental, social, and economic considerations are taken into account before a development project, program, or policy is approved, and before investments are committed.

Effective environmental impact regulations require that the precautionary principle be adopted with regard to development activities, such as the discharge of substances that have not been proven to cause damage but are likely to be harmful. Sound monitoring procedures are necessary to detect infringements and also to evaluate regulations and adjust them in cases where they prove too lax to be effective or too stringent to be enforced. It is important that the regulations contain provisions to guarantee rapid restoration of damaged ecosystems and prompt treatment of injury to human health, at the polluter's expense – and that they provide for adequate compensation where restoration is not possible. Finally, public access to environmental impact assessments, environmental audits, and monitoring results is essential to ensure that these do not become a meaningless routine or, worse, a smokescreen.

Muslim jurists will have to work together with environmental specialists to develop integrated schemes of waste management that promote the reuse of products, recycling of parts and materials, and use of nontoxic materials derived from renewable resources. Integrated pest management schemes – which use a combination of cultural controls (such as crop diversification and rotation, and the timing of planting and harvesting to avoid peak pest periods), resistant or tolerant cultivars, appropriate biological controls, and selective and nonpersistent chemical controls – are surely mandated by the principles of Islamic ethics, which forbid unnecessary killing.

### *The Rationale for Environmental Planning*

Muslim jurists define the role of the governing authorities by the principle, “The management of subjects' affairs by the ruler shall accord with their welfare.”<sup>36</sup> While the governing authorities of Islamic states have sometimes

taken an active role in planning, until the past century most development has taken place in a decentralized manner, as communities implemented the rules of the well-known *sharī'ah*. This is still true to a large extent, despite the fact that the *sharī'ah* is presently not the only regulatory system operating in Muslim countries, and in many of them is not officially recognized as a basis of public policy and planning.

The *sharī'ah*'s firm and constant principles, applied flexibly to changing circumstances in different times and places, provide a set of ground rules aimed at ensuring cooperation and responsible behavior. As J. C. Wilkinson has observed with regard to Islamic water law, the *sharī'ah* need not be imposed through strong central government; it requires only that people believe in it and are prepared to accept arbitration by those with learning to interpret the rules. With its distillation of expertise gained over more than a millennium and “through an emphasis on open and fair dealing the *sharī'ah* has provided a ‘true way’ by which any Islamic community may find a solution to its water problems. It is for this reason that isolated societies inhabiting a wide range of arid and semi-arid environments from the Sahara to central Asia recognize and apply a code which regulates the very basis of their economic life without any central government intervention.”<sup>37</sup>

The inherent tensions between the interests of individual cultivators and planning authorities are illustrated in *ihyā' al-mawāt*, or land reclamation. Virgin land (*mawāt*) may normally be acquired by anyone who “brings it to life” in the language of Islamic law. The prophet Muhammad, upon him be peace and the blessing of God, declared that “Whoever revives dead land, it shall be his.”<sup>38</sup> Ownership gives people a strong incentive to invest in the sustainable use of the land to provide for themselves, their families, and their posterity.

A person may stake a claim to virgin land by fencing or otherwise delimiting it. Whatever he then reclaims through his labor or capital, by planting, building, excavating a well, or irrigating, becomes his property. Only those actions which “bring new life” to the land lead to ownership; in the view of most jurists, mere exploitation – by grazing, for example – does not constitute *ihyā'*. The developer loses his claim to whatever land he has not revived within a reasonable time (‘Umar ibn al-Khattāb set a limit of three years; the limit is five years in contemporary Saudi Arabian law), for it is beneficial utilization and not merely acquisition that establishes the right of ownership. Once the right of ownership is established, it can be transferred by sale, inheritance, gift, or lease.

However, lands in which development would be injurious to the public interest may not be acquired through *ihyā'* because “the general welfare takes priority over individual welfare” and “the averting of harm takes priority over the acquisition of benefits.” Such lands include sources of water and surface minerals, and the inviolate zones (*harīm*) pertaining to water sources, settlements, roads, and squares, as well as protected areas (*himā*).<sup>39</sup>

What is the role of the governing authorities in regulating *ihyā'*? Muslim jurists have taken various positions. The Hanafī school has maintained that developers may not acquire virgin lands without first securing permission from

the governing authorities. Shāfi'ī jurists have held that such permission is not necessary, while Mālikī jurists have, in effect, required that prior permission be sought for development of sites in which there is a clear likelihood that it may be detrimental to the public welfare.<sup>40</sup>

With increasing human impact, there is an ever-increasing need to plan with foresight based on a sound understanding of natural processes and the intrinsic suitabilities of different places for different uses. In accordance with the precedent established in the prohibition of building and settlement in flood-prone areas, unsuitable land use practices and activities should not be permitted in areas that are inherently or potentially hazardous to human life, nor should they be permitted in areas that are vulnerable to disruption of natural processes. Planning for development should in every case include assessment of environmental impacts, to minimize damage to the natural environment and depletion of natural resources.<sup>41</sup>

Although the governing authorities have a mandate to plan, they have a corresponding obligation to do so in consultation (*shūrā*) with the people who are affected by their plans. At the local level, this may best be realized through participatory planning and collaborative management in which key stakeholders or their representatives take part.

### **Allocation and Accountability in the Use of Natural Resources**

Essential environmental elements and resources, such as water, rangeland, fire (including fuelwood and other sources of energy), forests and woodlands, fish and wildlife, cannot be owned in their natural state; they are held in common by all members of society. Each individual is entitled to benefit from these common resources to the extent of his need, so long as he does not infringe or violate the rights of other members. In return for profiting from the resource, he is obliged, as far as possible, to maintain its original value; if he causes its destruction, impairment, or degradation, he is held liable to the extent of repairing the damage, because he has violated the rights of every other member of society.<sup>42</sup>

Rights of usufruct are linked to accountability for the proper use and maintenance or conservation of the resource, in accordance with the fundamental legal principle established by the prophet Muhammad, upon him be peace and the blessing of God, “The benefit of a thing is in return for the liability attaching to it,”<sup>43</sup> and its converse, “Liability for a thing is an obligation accompanying the benefit thereof.” In decreeing that farmers who develop irrigation facilities are exempt half of the tithe due on rain-fed agriculture, he recognized the effort invested in developing natural resources and established a precedent for economic incentives to encourage their beneficial use.<sup>44</sup>

People in competitive open access rangelands or fisheries have no incentive to limit their harvests, nor do those whose rights are limited to a few years, whereas people who have exclusive rights to graze or fish a certain area, and whose rights extend far into the future have the incentive to limit their harvests to

conserve their resources and manage them for continued productivity.<sup>45</sup> “Local communities that depend on a resource take a longer view of management requirements than outside commercial interests that come and go.”<sup>46</sup>

Rights to harvest and extract the natural resources on which society depends should be allocated according to the effort that stakeholders invest in the beneficial use and conservation of these resources, and should be linked to accountability for the way the stakeholders use them. The right to use a resource – sustainably – for profit provides an incentive to reinvest in its conservation and enhancement. Similarly, the economic benefits of the conservation of a resource should return to those people who have borne the burden of its conservation.<sup>47</sup>

### *Renewable and Nonrenewable Resources*

The principles described above require that all natural resources be used efficiently and with restraint. The soil, surface waters and wetlands, fisheries, forests and woodlands, rangelands and farmlands, as well as wild and domesticated species and the ecosystems to which they belong are renewable. This means that they can be used sustainably, provided that they are harvested at rates that do not exceed their capacity for regeneration. The processes by which most minerals, including fossil fuels and fossil groundwater, are produced, stored, and cycled in the earth occur over spans of time so vast that they are effectively nonrenewable as far as human beings are concerned. Hence, it is not possible to use them sustainably. The lives of these resources can be extended, however, by recycling, using less, and using renewable substitutes.<sup>48</sup>

Muslim jurists will have to translate the general principles which prohibit excessive and wasteful use of resources into detailed regulations pertaining to the entire range of technologies and practices used today in order to ensure that the use of renewable resources is sustainable and to minimize the depletion of nonrenewable resources.

### *Water Law*

The expertise of Muslim jurists in the allocation of water rights represents the distillation of experience that civilizations in the arid and semi-arid Middle East have gained over millennia in managing a scarce resource, and in bringing its management within the ethical parameters of Islam. This most vital resource, of which every living thing is made and upon which each depends, may serve as an analogical basis for the allocation of rights to other resources that formerly were abundant but are now becoming progressively more scarce. “Water is to some extent a fugitive resource and therefore a particularly appropriate precedent for other resources such as wildlife and even grazing, with their fugitive properties in arid lands. Conceptually there are striking parallels between the benefits to be derived from the best possible allocation and use of a flow of water and those that can be harvested from the flow of energy in natural ecosystems.”<sup>49</sup>

Water cannot be privately owned in its natural state; at its source it is publicly owned as common property and it remains so where it is sufficiently plentiful, as in a major river. All people may use it in moderation, but they may not waste it by excessive consumption, or impair its quality by pollution. Restrictions on common use increase with growing scarcity of the supply, but possessors of usufructuary rights may not withhold from others that which is surplus to their own needs. Uses of water are prioritized according to need and the amount of water consumed. Highest priority is given to the “right of thirst”; access to water for drinking cannot be denied because a person’s life may depend upon it. Second, everyone is normally entitled to a sufficient quantity of water for washing, cooking, and similar domestic needs. The right to water livestock is next in priority, and finally, the most consumptive use, irrigation of crops. Hence, irrigation water may not be withheld from livestock unless damage to irrigation facilities or failure of crops is likely to result, in which case the owner of the irrigation rights is required to give only that water which is surplus to his needs. This prioritization among uses favors those whose needs are most acute. It also favors the uses that are least consumptive, or have least impact on the resource.

Farmers who develop land for irrigated agriculture have a right to a fair share of the available water. How, then, are irrigation rights allocated? On a naturally occurring water source that is not sufficiently plentiful to allow unrestricted use, as in an ephemeral stream or a small perennial stream, riparian landowners have senior rights of usufruct but may not withhold from others any water that is surplus to their needs. Normally, the upstream riparian user may take the amount of water allocated to his crops and releases the surplus water to the next user downstream, who in turn releases his surplus to the next, and so on until the needs of all farms are satisfied or the flow is exhausted. This system ensures that in times of drought there will be sufficient water for some farms to flourish, with the sacrifice of farms that are marginal. It is more efficient than systems based on proportional allocation, which can result in a general failure of crops when water is scarce. In effect, this helps to discourage overextension of agriculture by restricting it to the extent that is economically viable in accordance with the availability of water at any given time.

If a new farm or plot is cultivated upstream from one or more existing farms, however, the farms that were first established take priority and the new plot receives a share only after the previously established farms have been irrigated. Riparian rights are thus subordinate to rights of prior claim. This ensures that a farmer’s investment in the resource will not be prejudiced by future users.

Similar principles govern the use of groundwater. The owner of a well enjoys senior rights of usufruct, but he may not withhold surplus water beyond his needs so long as there is no degradation of the resource. Nor may he pollute the aquifer or, in the view of many jurists, deplete it to the extent that he causes previously established wells to fail.

The excavation of a well or canal gives rise to rights of ownership of the property. If a group of farmers constructs such a facility, they own it jointly in



accordance with the shares of labor and capital they have invested in it. The owners of these facilities enjoy senior rights of usufruct, but the water itself remains a public resource, because it flows to – and from – the land. Only when water is appropriated and separated from its source, as in a vessel or a cistern, does it become the possessor's private property, which can be sold, gifted, or otherwise disposed of.<sup>50</sup>

### *Other Renewable Natural Resources*

It has been observed that “The sheer pragmatic logic and versatility of the Islamic water law suggests that...it could readily be expanded into an Islamic law for the conservation of renewable resources.”<sup>51</sup>

At the time that Muslim jurists developed the *fiqh* pertaining to grazing, forestry, hunting, and fishing, these were generally not scarce resources. Wildlife populations were sufficiently large for many peoples in Muslim countries to subsist largely by hunting until into the twentieth century. The ability of pastoralists to exploit the rangelands was limited by the availability of water; to withhold surplus water from livestock and their owners was to deny them the use of the range.<sup>52</sup> In times of drought, starvation ensured that livestock numbers did not greatly exceed the carrying capacity of the range.

Now, however, the technologies of resource use have changed, as have the social and environmental circumstances that made many traditional resource uses sustainable. Many of the rangelands in Muslim countries have been devastated by overgrazing, and forests and woodlands have been ravaged by the timber, firewood, and charcoal industries. Wildlife habitats have been destroyed through overgrazing of rangelands and clearance of forests for settlement and agriculture or by logging, and the populations of many species of wildlife have plummeted. Some species are extinct, and others are threatened with extinction. The forage and wildlife, resources that once were relatively abundant, have become as scarce as water, or scarcer still.

Since the rates of natural regeneration of these resources have been exceeded, there is hardly any question of a surplus, which it would be wrong to withhold. On the contrary, harvests must be greatly reduced if pastoralism, forestry, hunting, and fishing are to be economically viable. As currently practiced, they are simply not sustainable. General and excessive damage has occurred and the public welfare has been seriously affected.

Inevitably, when present uses are no longer sustainable or economically viable, some of the people who presently use these resources will have to find other means of livelihood. “The general welfare takes priority over individual welfare”; “a private injury is accepted to avert a general injury to the public”; and “the averting of harm takes priority over the acquisition of benefits.”<sup>53</sup>

How, then, might rights to these common natural resources be allocated when they cannot sustain unrestricted use? The restrictions on common use increase with the consumptiveness of the use and the scarcity of the supply.

Drawing an analogy from water law, the uses that are most vital to human welfare should take priority, as well as the uses that are least consumptive. With growing scarcity, there must also be greater protection for those with usufructuary rights: the people who live in closest proximity to these resources and particularly the graziers, woodsmen, hunters, and fishermen who have prior traditional claims of usufruct would have priority. In Islamic law, a person who constructs a birdhouse, beehive, or otherwise provides habitat for wildlife holds prior rights to the animals he attracts.<sup>54</sup> It has been suggested that “The securing of prior rights to water through the construction of irrigation facilities could readily be equated with a demonstration of responsibility in conserving and developing grazing and wildlife resources over a period of time. Both require effort and sacrifice on the part of the individuals, as an investment for future favorable treatment.”<sup>55</sup> Accordingly, people who invest their capital and labor in the conservation and rehabilitation of the resource by way of wildlife conservation and habitat enhancement, range improvement, or agroforestry would earn senior rights of usufruct in return for their investment, and all the improvements that they have made would belong to them.

Wildlife resources have potential economic advantages over domestic livestock, since they are better adapted to their native habitats and produce not only meat and hides, as do domestic animals, but also can be “sold” several times over for game viewing and hunting opportunities. Under conditions of good management, the use of wildlife can be less consumptive and have lower impact on rangelands. Since domestic livestock will necessarily have to be displaced from certain ranges in order to allow development of wildlife resources, the graziers who have been affected should have prior rights to the wildlife, in compensation for their loss of grazing rights.<sup>56</sup>

### **Legal Instruments**

Among the essential elements of environmental legislation are effective legal instruments for environmental protection and conservation of natural resources. What institutions of the *sharī‘ah* have served as legal instruments for conservation, providing regulations, models, and incentives for responsible stewardship of the earth and its resources? Jurists should consider ways in which these instruments may be extended and applied creatively to solve new problems and offer new opportunities. In cases where they are in decline but are potentially effective, jurists should investigate the reasons for their decline and consider ways in which they might be restored.

The legal instruments of the *sharī‘ah* that pertain to conservation survive mainly as traditional or customary practices. The fundamental needs are, first, to adapt these institutions of the *sharī‘ah* to new technologies and socioeconomic realities and thus enable them to survive, and second and perhaps most importantly, to learn their basic principles, and then apply these principles to conservation of our renewable natural resources.

The customary practices that have embodied these principles may at times provide solutions that are well adapted to the problems we face in managing natural resources, while at times they themselves must be adapted to new technologies and socioeconomic realities. The heart of tradition is often in its details – the specific practices and prohibitions in using a *himā*; the dimensions of the *harīm* of a spring; the actual stones of an agricultural terrace – and these details should not be dismissed lightly. Yet, important as the details of traditional conservation practices are, many of them will need to be amended and adapted to new technologies and economic realities, if they are to survive. Hence, still more important than preservation of the details is preservation of the principles that underlie them, and the creative application of these principles to the conservation of natural resources.

In the endeavor to revitalize traditional conservation practices, it should be borne in mind that the success of traditional practices and technologies comes from – and depends on – the presence of arrangements that enable the local communities that are the repositories and practitioners of these traditions to participate equitably in the management of their natural resources.

#### Al-Haramān: *The Two Inviolable Sanctuaries*

Islamic law defines each of the sacred territories surrounding Makkah and Al-Madīnah as an inviolable sanctuary (*haram*) for human beings, wildlife, and native vegetation. Within them the injury – even disturbance – of wildlife is forbidden. On the day that the population of Makkah entered into Islam, the prophet Muhammad, upon him be peace and the blessing of God, proclaimed with regard to its sacred precincts: “It is sacred by virtue of the sanctity conferred on it by God until the day of resurrection. Its thorn trees shall not be cut down, its game shall not be disturbed...and its fresh herbage shall not be cut.”<sup>57</sup>

He established a similar sanctuary between the mountains and lava flows surrounding Al-Madīnah, saying, “Verily Abraham declared Makkah a sanctuary and I declare Al-Madīnah, that which lies between its two lava flows, to be a sanctuary; its trees shall not be cut and its game shall not be hunted.”<sup>58</sup> His companion Abū-Hurayrah stated, “Were I to find gazelles in the land between its two lava flows, I would not disturb them; and he (the Prophet) also made the environs of Al-Madīnah for twelve miles a reserve (*himā*).”<sup>59</sup>

These two inviolable sanctuaries are the primordial protected areas in Islam. The *Haram* of Makkah extends roughly thirty-five kilometers east to west, and twenty kilometers north to south. In addition to the city of Makkah with its population of more than one million, it includes some rural wadis, plains, sand dunes, and mountain peaks containing a fair diversity of native wildlife. The predominant vegetation is *Acacia-Commiphora* scrub; sand partridge, sandgrouse, doves, swifts, martins, and various raptors inhabit the *Haram*, as well as a wide variety of snakes and lizards. Gazelle and ibex occurred until recent times, and in addition to smaller mammals, wolf, hyaena, caracal, ratel, and wildcat are still found.<sup>60</sup> The small *haram* occupying the area between the

two lava flows of Al-Madīnah is now almost entirely urbanized. However, it still contains some productive groves of date palms, which are habitat for a diverse array of resident and migratory birds.

Hunting does not take place within the two inviolable sanctuaries, but otherwise the *sharī'ah*'s strict environmental rulings pertaining to them are largely suspended in practice. It has been argued that these rulings are incompatible with development, that development is a necessity and, according to a principle of Islamic law, "Dire necessity makes the prohibited permissible." In fact, however, this supposed incompatibility is illusory; indeed, there are now a number of sites in the world, including urban sites, that are held to be sacred or of high cultural value and set environmental standards approaching the strictness of those standards, which, in theory, apply to Makkah and Al-Madīnah.

What does it mean to say that the *Haramān* are inviolable? If the stringent environmental regulations that pertain to them were meant to be put aside, why were they laid down in the first place? Jurists should consider the possibility that they are meant to be implemented literally. Of course, strict avoidance of injury to native vegetation and wildlife is possible only through minimization of negative impacts on their habitats. All planning, design, and construction within the sacred precincts of Makkah and Al-Madīnah would therefore have to be carried out with extraordinary sensitivity and care.<sup>61</sup>

If these rulings were to be implemented literally, the two inviolable sanctuaries would become models of environmental protection and sustainable development, demonstrations of best practice in integrated urban and rural planning. Surely the primordial protected areas of Islam merit no less than this – and is it unreasonable to suppose that they are meant to serve as models? These two sites are visited each year by millions of pilgrims for *hajj* and *'umrah*. By demonstrating the highest standards of environmental excellence, as embodiments of harmony between humanity and nature, and as expressions of human stewardship (*khilāfah*), they have great potential to spread environmental consciousness throughout the Muslim world. Conversely, if the most sacred sites on the face of the earth are degraded and abused, the message will be broadcast throughout the Muslim countries that to despoil the rest of the planet is not wrong!

#### *Harīm Zones: Greenbelts and Easements*

*Their roles in traditional socioeconomic systems* – Islamic law designates various inviolable zones, called *harīm*, within which developments are prohibited or restricted to prevent the impairment of utilities and natural resources. "Whatever is near developed land and pertains to its well-being, such as its pathways and watercourse, its rubbish dump, and the place where its soil and tools are stored, its acquisition by development is not permitted... Likewise that which pertains to the well-being of a village, such as its square, the pasture of its livestock, its woodlands, its pathways, and its water channels, is not acquired individually by *ihyā'*, and we do not know of any difference of opinion

among the people of knowledge (*'ulamā'*) in this regard. Likewise with regard to the *harīm* of a well or stream or spring, or properties of any other kind, *ihyā'* is not permitted in sites that affect its well-being."<sup>62</sup>

According to Islamic law, every settlement (*'āmir*) should have a surrounding *harīm* resembling a greenbelt within which the right to acquire vacant land by developing it is restricted. These municipal common lands are to be managed by the people of the settlement to provide for their needs, such as forage, firewood, and the like, and to facilitate the use and development of these lands in the manner most conducive to the inhabitants' welfare.

Sources of water, whether natural, such as seas and lakes, rivers, streams, and springs, or developed, such as wells, cisterns, and surficial and subterranean canals, also have inviolable zones in Islamic law. These *harīms* resemble easements; they are prescribed to prevent the impairment of water sources, to facilitate their management, and to prevent nuisances and hazards. The standard measurements of such *harīms* are: a radius of three to five hundred cubits for a natural spring; twenty-five, forty, fifty, and sixty cubits for various kinds of wells; and for a watercourse, an area of adjacent land that is equal to the distance from the center of the channel to the bank. In the view of many legal scholars, however, including most Mālikī and Shāfi'ī *fuqahā'*, these distances are not fixed; they are to be modified in accordance with the characteristics of the site and the requirements of the resource.<sup>63</sup>

Unfortunately, the municipal commons of settlements are presently overexploited and not managed; the inviolable zones of water sources are largely ignored.

*Potential applications of harīm zones* – The municipal lands of settlements have immense potential as a means for local communities to secure their own sustainable development. Jurists need to work with socioeconomists, planners, and local communities to enable these lands to fulfill their potential. How may they best be managed to provide for the inhabitants' needs on a sustainable basis, and to reduce pressure on the surrounding range and woodlands? How may the inhabitants be encouraged to invest in the restoration or rehabilitation of these lands, and how best may they be held accountable for their maintenance?

The inviolable zones of water sources have great potential for watershed conservation and management, for the sustainable use of wetlands and the conservation of their biological diversity. Jurists must work with hydrologists, biologists, environmental planners, and local communities to investigate the potential uses of these zones and the management prescriptions necessary to realize their benefits. How best may they be protected and their provisions enforced? How may the inhabitants be encouraged to invest in the restoration of these *harīms* and how best may they be held accountable for their maintenance? Perhaps the standard measurements of *harīm* zones should represent their minimum areas, which could be extended as necessary to protect water resources. What *harīm* regulations are applicable to sea, reservoir, and lake shores? To marshes, ephemeral wetlands, and playas? How are prohibitions on settlement and inappropriate development activities in flood-prone areas best

enforced? How should the individual, group, or agency to which the benefits of the water are allocated be made accountable for maintenance of the *harīm*, and responsible for whatever conservation measures, such as bank stabilization, erosion control, aquifer recharge, and habitat enhancement, are required?<sup>64</sup>

### *The Himā: Protected Areas*

*The role of the himā in traditional socioeconomic systems* – In Islamic law, all unowned wildlands that are protected from settlement, farming, and normal grazing, wood cutting, and the like, and are reserved for purposes pertaining to the public good are known as *himā*, meaning a “protected area.” It may be, as suggested by some contemporary writers, that the *himā* was used as an instrument of conservation in pre-Islamic times.<sup>65</sup> Certainly, the term *himā* was in use by the time of the prophet Muhammad, upon whom be peace and the blessing of God, for he is recorded to have mentioned that “every ruler has a *himā*.”<sup>66</sup> It is difficult to ascertain what were the purposes of these pre-Islamic *himās*, the ways in which they were managed, and to what extent they were used for the conservation of natural resources. Ash-Shāfi‘ī reported that when a nomadic tribe came into a new area, it had been customary for the tribal leader to ascend an eminence and make his dog bark, and that all the land as far as the sound could be heard would be reserved for his exclusive use, as his *himā*. In the lands outside the *himā* he would graze his herds along with those of his people, whom he would exclude from the *himā*; in it he would graze his weaker animals and those of anyone else whom he chose to offer the privilege of sharing it with him. A good ruler or tribal chieftain would presumably have used his *himā* for purposes pertaining to the welfare of his people; however, the pre-Islamic institution of the *himā* was widely regarded as an instrument of oppression.<sup>67</sup>

In any event, the prophet Muhammad, upon him be peace and the blessing of God, transformed the *himā*, laying down the rules by which it came to be one of the essential instruments of conservation in Islamic law. He abolished the pre-Islamic practice of making private reserves for the exclusive use of powerful individuals, and ruled that a *himā* could be established only in the way of God and His Prophet – in other words, for the public welfare.<sup>68</sup> He established the *himā* of An-Naqī‘ for the cavalry, and made a *himā* surrounding the *Haram* of Al-Madīnah, in which he instituted a kind of zonation, forbidding hunting within a radius of four miles and the destruction of trees and shrubs within twelve.<sup>69</sup> The caliphs who succeeded him established additional *himās* for the cavalry, the camels allocated to charity, and the livestock of the poor.

*Himās* are to be managed in a manner that is not injurious to the local people. Rulers “may make reserves only to an extent that does not oppress or injure the Islamic community – for it is allowed only for the benefit that is realized through its reservation, and it is no benefit to bring about an injury to the majority of the people.”<sup>70</sup> The caliph ‘Umar ibn Al-Khattāb instructed the manager of *Himā ar-Rabadhah*, “Take care, O Hunayy! Lower your wing over the people! Beware the prayer of the oppressed for it will be answered. Let enter those who depend on their camels and sheep, and turn away the livestock of Ibn ‘Awf and Ibn ‘Affān,

for they, if their livestock should perish, will fall back on their palms and fields; whereas the needy one, if his livestock perish, will come to me crying ‘O Commander of the Faithful...!’ It is easier for me to provide them with pasture than to spend on them gold or silver. Indeed it is their land, for which they fought in the time of ignorance and upon which they embraced Islam.” He also said, “All property belongs to God and all creatures are servants of God. By God, were it not for its use in the cause of God, I would not have reserved a hand’s span of the land.”<sup>71</sup>

The *himā* tradition is characterized by great flexibility. To be valid in Islamic law, according to As-Suyūṭī and other jurists, a *himā* must meet four conditions, which they derived from the practices of the Prophet and the early caliphs.<sup>72</sup>

1. It should be constituted by the legitimate Islamic governing authority;
2. it should be established in the way of God – that is, for purposes pertaining to the public welfare;
3. it should not cause undue hardship to the local people – that is, it should not deprive them of indispensable resources that are the means of their subsistence; and
4. it should realize greater actual benefits to society than detriments.

No other conditions need be met.

Historically, *himās* have varied in size from a few hectares to hundreds of square kilometers. *Himā* ar-Rabadhah, which was established by the caliph ‘Umar ibn al-Khattāb and was expanded by the caliph ‘Uthmān ibn ‘Affān, was one of the largest. It is said to have extended some 150 kilometers from the site of Ar-Rabadhah in western Najd to near the village of Darīyah, and to have carried forty thousand head of livestock. Among the traditional *himās* are the best managed rangelands in the Arabian Peninsula; some have been grazed correctly since early Islamic times and are among the most long-standing examples of rangeland conservation known. Indeed, few established systems of protected areas are known that have a history comparable in length with traditional *himās*. In the 1960’s it was reported that there were not less than three thousand *himās* in Saudi Arabia, comprising a vast area of land under conservation and sustainable management. Nearly every village in the southwestern mountains of the country was associated with one or more *himās*, either alone or in cooperation with an adjacent settlement. The *himās* of this region varied from ten to over a thousand hectares and appear to have averaged about 250 hectares.

Customary management of *himās* has been highly adaptive to the characteristics of the land and the needs of the local people. In some *himās*, grazing is prohibited, but grass is harvested by hand at designated times and places during years of drought. Others are protected woodlands within which the cutting of trees is either prohibited or regulated. Still others are managed rangelands in which grazing or the cutting of grass is permitted on a seasonal basis, after the grasses have grown out and flowered, or in which grazing is

restricted to specified kinds of livestock, such as milk cattle, or within which a limited number of livestock may be grazed for a specified time during periods of drought. There are reserves for the production of honey, within which grazing is prohibited seasonally or excluded altogether. One site has been managed as a reserve for the conservation of ibex for nearly two hundred years.<sup>73</sup>

Because a *himā* may be established for any purpose that pertains to the common good, it may be managed for either conservation or sustainable production, although historically most *himās* have combined both aims. For more than fourteen hundred years, this institution has proven ecologically sustainable; it has been socially acceptable to the people who carried the cost of implementing it, and it has been economically viable because of the benefits it has yielded and the social security it has provided. By allocating tangible benefits to particular people who have benefited directly from conservation, it has provided the necessary incentive for local communities to invest in the maintenance of their natural resources and to protect them from abuse.

As most *himās* were managed locally, management was subject to community consensus and individuals in the community were able to influence this consensus and thus have had a meaningful voice in management decisions. The pragmatic flexibility of the system has provided an important cultural precedent for protecting and managing public resources over which individuals enjoy usufructuary rights, including rights to grazing. This is especially significant in countries where most of the land is given over to communal grazing and where there are few designated landholdings.

The use of *himās* has undergone enormous change in recent decades, as tribal lands have been nationalized, a growing population has demanded more land for housing, farms, and pasture, and the needs of village farmers have changed. Traditional *himās* had their management grounded in tribal loyalties and were sometimes a source of conflict. Most of them were managed by and for a particular village, clan, or tribe; the governing authorities have tended to see them as contradicting the common good, and have withheld official recognition and support. Most *himās* have now been abandoned, and their number has plummeted to a few dozen. With the mechanization of terrace agriculture there is little need for draft animals; the remaining *himās* are now often used to graze sheep and goats, rather than cattle and horses. *Himās* are still regarded as an essential source of fodder and are especially important in years of drought. Some are retained as an insurance against poor seasons, when designated portions may be harvested on a rotational basis under the supervision of the village shaykh. Among the most successful *himās* are those used for honey production, as wildflower honeys of good quality fetch a high price in the market and are economically competitive against livestock.<sup>74</sup>

*Potential applications of the himā* – The value of *himās* for the rehabilitation of rangeland, the stabilization and control of nomadic grazing, as indicators of range potential and better animal husbandry practices, and for the proper management of water catchments has been identified by a succession of researchers. Many *himās* are also located in areas of high species diversity; many



support key biological habitats, such as juniper, olive, and *Ziziphus* woodlands, or serve as refuges for indigenous plants and animals that have been displaced elsewhere; they are thus important in preserving biological diversity. Their role as seed banks to rehabilitate the surrounding rangelands will become ever more valuable as grazing and development pressures increase. Their potential for ecological and socioeconomic research and development has received less attention.

Areas that have been protected under a more or less defined management regime for a substantial period of time are critical for ecological research. Reclamation of the grazing resources and their level of use during and after rehabilitation will be difficult to plan in the absence of base-line information on which to judge recovery and the capacity of the range to support wild or domestic herbivores at different stages during recovery. Such information is difficult to obtain in the absence of trial range sites protected from overgrazing. Well-protected *himās* provide an indicator of range health, and a measure of potential plant species diversity and standing plant biomass under particular climatic conditions and management treatments.<sup>75</sup>

As the accelerating loss of species and ecosystems diminishes the fertility and productivity of the earth, the *himā* has emerged as potentially, perhaps, the most important legal instrument in the *sharī'ah* for conservation of biological diversity. For this potential to be realized, however, each Muslim country needs to establish a comprehensive system of *himās* – protected areas – based on accurate inventory and assessment of its biological resources. Such a system should conserve (and restore) an adequate representation of each physiographic region and biotope. It should conserve (and restore) sites of outstanding biological productivity and ecological significance, such as freshwater wetlands, mountain refugia, forests and woodlands, islands, coral reefs, seagrass beds, mangrove thickets, and saltmarshes. And it should conserve (and restore) viable populations of endangered, endemic, relict, and “key” or “keystone” species.<sup>76</sup>

The conservation of biological diversity is inevitably interwoven with sustainable use of natural resources, and the *himā* has shown considerable value as an instrument for sustainable development. The most enduring *himās* have been those that were planned and managed, not by central governments, but by the local communities of stakeholders who were dependent upon them for their livelihood. To enable *himās* to achieve their potential value for sustainable development, it is necessary to ensure community participation in their management, and to manage them to generate tangible benefits that are shared equitably among stakeholders, who in turn are held accountable for maintaining their biological resources.

Traditional *himās* must adapt to the new socioeconomic realities to fulfill the changing needs of the local communities. As the basis of social organization shifts from tribal to geographic units, the management of traditional *himās* needs to shift from tribal objectives, which inherently carry the potential for conflict, to geographical objectives, which tend more toward the common good. Provisions will still be needed to ensure that allocation of the rights to use natural resources

– and accountability for maintaining them in good condition – are invested in identified individuals so as to avert the “tragedy of the commons,”<sup>77</sup> but on a more equitable basis than tribal lineage.

Most important, perhaps, is the need to reorient the management of modern protected area systems to embody the principles articulated in the juristic discussions of the *himā* and realized in their actual traditional management. This can only be done through close collaboration with the local people. The traditional management of *himās* was close to the people who used them. Now the authorities who manage the protected areas are usually remote, in their centralized offices in the capital cities. We need to develop arrangements that will enable local communities to participate meaningfully in the management of protected areas. The revival and extension of the *himā* as the basis for protected area systems has far-reaching and exciting implications for the conservation of biological diversity and sustainable use of renewable natural resources throughout the Islamic world.<sup>78</sup>

Within the framework of the *sharī‘ah*, Muslim jurists will have to draw upon the full spectrum of local and international experience in protected area management to revitalize the institution of the *himā*. They will have to work out its application to marine and coastal areas, and to answer a host of practical questions pertaining to the rights of local people. How may the management of the *himās* and that of adjacent private lands be coordinated to avert conflicts of interest and to achieve the objectives of both? What limitations may the managing authority impose on the use of private enclaves within a *himā* or private properties adjacent to it? What are the rules governing the acquisition of private property adjacent to a *himā* or surrounded by it, if such property is needed for the *himā*’s management? What are the conditions pertaining to voluntary purchase? To compulsory purchase? Can the managing authority exercise rights of option and preemption (*shuf‘ah*)? What mechanisms, such as grants and leaseback, exist in Islamic law to compensate people for land that is taken for a *himā*, or for pasture and other resources to which access is denied?

#### *The Waqf: Charitable Foundations and Endowments*

*The role of the waqf in traditional socioeconomic systems* – The most important institution of Islamic law by which individual Muslims may contribute to the public good is the charitable endowment (*waqf*), dedicated in perpetuity to the cause of God. It is related that when ‘Umar ibn al-Khattāb acquired land in Khaybar, he consulted the prophet Muhammad, upon him be peace and the blessing of God, and said, “O Messenger of God, I have acquired land in Khaybar; never have I received property dearer to me than this, so what do you direct me to do with it?” The Prophet, upon him be peace and the blessing of God, replied, “If you wish you may make it an endowment and give its produce as charity.” So ‘Umar gave it in charity, declaring that it should not be sold or gifted or inherited, and that its yield should be devoted to the poor, to kinsfolk, to the freeing of slaves, for the cause of God, and to provide for guests and travelers.<sup>79</sup>

A *waqf* may be established for any legitimate charitable purpose. It becomes inalienable public property, administered in accordance with the stipulations specified by the donor, under the supervision of the *qādī*. Historically, the role of charitable gifts has been enormous; the *waqf* has been the primary source of funding for mosques, schools, hospitals, and other public works in the Muslim world. Among the most common endowments in rural areas are wells and cisterns donated for the public good, following the example of ‘Uthmān ibn ‘Affān who bought the well of Rawmah and dedicated it to the public.<sup>80</sup>

Even now, after governments have assumed the primary responsibility of financing public welfare, charitable contributions are underestimated, including, notably, the contributions of women, whose financial assets may be less bound up in family maintenance. But although there have long been endowments for the feeding of birds and the maintenance of domestic animals, the *waqf* remains virtually untapped as an instrument for conservation.

*Potential applications of the waqf* – In many countries of the world, charitable contributions are major sources of material and financial support for conservation. Governments cannot bear the full costs of conservation, especially in the poorer countries. Nor should they. Through private contributions, people exercise their role as *khulafā’* on Earth, and support the projects which they believe are most beneficial.

Muslim jurists should investigate the contemporary uses to which endowments, trusts, funds, gifts, and other private contributions of land and money have been put as instruments of conservation worldwide, in order to find appropriate uses of the *waqf*. For example, a *waqf* might take the form of a land trust for charitable purposes, such as ecological and range research, wildlife propagation and reintroduction, habitat development, a village woodlot or pasture, or a facility for environmental education and recreation. Alternatively, it might be used to fund such research and reintroduction, to acquire land for purposes of conservation, or for habitat restoration and enhancement within or outside protected areas. New endowments should be encouraged within protected areas to complement the purposes of the *himā*.<sup>81</sup>

Jurists should investigate ways to manage a *waqf* to provide accumulating funds and to solicit the contribution of further endowments, or as a cumulative land trust that solicits the endowment of additional wildlife habitats. They should look into the conditions under which both private organizations and public agencies might initiate, sponsor, and manage such funds and land trusts, allowing for stipulations by both the managing organization and contributors. They should also consider what guidelines are appropriate to ensure efficient and effective management of endowments for conservation.

*Other Legal Instruments: Iqtā’, Iqtā’ Istighlāl, Ijārah, and Hukr*<sup>82</sup>

The governing authorities may make grants (*iqtā’*) of unowned land for purposes of agriculture and other kinds of development. Such grants may be used to channel such developments to environmentally suitable locations and away

from areas that are unsuitable. Land grants may also serve as means of compensation to people whose lands are appropriated for a public good, or in whose lands development is restricted in the public interest. Land grants are subject to the precepts that govern *ihyā'*: They may not contain resources upon which the public welfare depends. A grant does not in itself confer ownership; only that land which the recipient actually revives becomes his property. Whatever land the recipient fails to develop within a reasonable time returns to its previous unowned state, so that others may benefit from it.

The governing authorities may institute the *lease (ijārah)* of state-owned lands or grant their usufruct (*iqṭā' manfa'at al-ard* or *iqṭā' istighlāl*) for agricultural and other purposes, and may specify the kinds of improvements to be undertaken or the crops to be grown, and the management practices and techniques to be employed. Long-term leases and grants of usufruct give the recipients an incentive to invest in the sustainable use of the land while making them directly accountable to the authorities who continue to supervise its utilization. Both leases and grants of usufruct are well suited for environmentally vulnerable lands that require special management practices.

Sites can also be designated for special purposes through ground rent (*hukr, hīkr, hākūrah*). Prime agricultural soils, for example, are of enormous importance for food production, yet they are rapidly succumbing to urban settlement because agriculture cannot compete economically with urban uses. Through *hukr*, suitable sites may be reserved for agricultural use.

Muslim jurists should investigate the ways in which these and other legal instruments have been used historically, and their potential environmental applications.

## Legal Sanctions

### The *Hisbah*

Let there arise from you a society that calls to goodness, establishes right and eradicates wrong. Such are they who shall prosper. (Qur'an 3:104; also see 3:110, 114; 9:71, and 22:41)

The obligation to establish good and eradicate evil is known in Islamic law as the *hisbah*. The prophet Muhammad, upon him be peace and the blessing of God, declared that "If one witnesses a wrong, he should change it with his hand; if he cannot do so, he should change it with his tongue; and if he cannot do that, he should change it in his heart – but that is the weakest degree of faith."<sup>83</sup>

*Individual and social conscience* – This obligation is both individual and collective. On the individual level, each man and woman is responsible for his or her own behavior and is obliged to influence family, neighbors, and the society at large in accordance with an enlightened conscience. On the collective level also, social conscience can be immensely powerful, and when functioning effectively, obviates much of the need for coercion by the governing authorities.

The conservation of the natural environment is a moral and ethical imperative. Environmental problems cannot be solved through knowledge and technology alone. While incentives, such as equitable allocation of rights to benefit from natural resources in return for their conservation, are essential to motivate people to use the earth wisely, enlightened self-interest does not motivate people to do more than is convenient and profitable for themselves. Only moral conviction and ethical consciousness – on both individual and social levels – can motivate people to forgo some of the short-range profits of this life, and to make personal sacrifices for the common good.<sup>84</sup>

*The role of the governing authorities* – At the same time, ethical teachings must be backed with sanctions. Appeals to conscience without positive inducement and enforcement put those who respond to their nobler ethical instincts with self-restraint at a disadvantage with respect to those who fail to rise above their most petty and selfish desires, exceed the bounds of fairness, and infringe the rights of others as they please. Even conscientious people know their own needs and interests and their associates' needs and interests far better than they can know the competing needs and interests of other people and other social groups; thus, even moral impulses can work against the common good. The force of law and political authority are therefore indispensable to bring about justice and equity.<sup>85</sup> The caliph 'Uthmān ibn 'Affān declared that "The evils that God curbs through the *sultān* (the one in authority) are more than those He curbs through the Qur'an."<sup>86</sup> Ibn Taymīyah declared that government is one of the most important requirements of Islam, for the fundamental obligation to command the right and forbid the wrong cannot be discharged without power and authority.<sup>87</sup>

#### The Office of the *Muhtasib*

Historically, one of the most important institutions (in addition to the courts of law) with coercive power to safeguard the rights of society when individual conscience and social conscience fail has been the office of the *muhtasib*. The *muhtasib* was a jurist who had to be thoroughly familiar with the rulings of Islamic law that pertained to his position as inspector of markets, roads, buildings, watercourses, *himās*, and so forth. He was assisted by a staff of experts in pertinent fields. Many of the responsibilities of environmental protection and conservation came under his jurisdiction. Among his duties were the supervision and enforcement of regulations and standards pertaining to safety, hygiene, and cleanliness; the removal and disposal of wastes and pollutants; the prevention and elimination of hazards and nuisances; the protection of *himās* from violation and trespass; and the prevention of abuse and ill treatment of animals. He was responsible for assessing damages and imposing fines and other penalties. In addition, he had wide discretionary authority to take what measures he deemed necessary to ensure the public welfare.<sup>88</sup>

This institution has all but disappeared. The regulatory functions of the *muhtasib* have been inherited by such agencies as municipalities, environmental protection agencies, wildlife conservation agencies, and societies for the

prevention of cruelty to animals. The essential difference, of course, is that the *muhtasib* was an expert in the application of Islamic law, whereas the agencies that have replaced his office and the regulations by which they operate are secular in origin. In each Muslim country, jurists should consider what approach is most feasible and effective to realize the objectives of this institution: to revive the office of the *muhtasib*, extend it, and update it to discharge the responsibilities of its contemporary successors, or to reform these contemporary agencies in a manner that would enable them to interpret and implement Islamic law?

### ***As-Siyāsah ash-Shar‘īyah: Sharī‘ah-based Policies***

Muslim jurists will have to address a number of social, economic, ethical, and political issues that are fundamental to environmental policy and legislation. Among them are individual responsibilities and rights, valuing of natural resources, development and lifestyle, population control, genetic resources, animal rights, and international cooperation and conflict.

*Individual Responsibilities and Rights* – The prophet Muhammad, upon him be peace and the blessing of God, declared that “the believer who is strong is better, and better loved by God, than the believer who is weak.”<sup>89</sup> Each individual man and woman is a *khalīfah* on the earth and will be judged alone on the Day of Judgment for what he or she did with his or her life. This enormous responsibility requires freedom to participate effectively in planning and decision-making processes.

The individual is responsible before God to protect himself and his community, regardless of what the governing authorities may or may not require of him. Accurate information is indispensable to enable people to make enlightened decisions for the conservation of the natural environment, to avoid acts that lead to its degradation, and to rectify damage that already has occurred.

A fundamental right of people is consultation (*shūrā*) in all matters that affect their welfare. It is essential that people of all social and ethnic groups be consulted without discrimination, and that the weakest citizens be held as strongest until their rights are fully established, and the strongest held as weakest until they comply fully with the law.<sup>90</sup> Women as well as men took oaths of allegiance to the Prophet, upon him be peace and the blessing of God. Upon the death of the second caliph, ‘Umar ibn al-Khattāb, the committee whom he appointed to select his successor hastened to consult not only the people of knowledge and the leaders of the tribes, but also the ordinary people, including the women in their homes, the youths in the schools, and visiting travelers.<sup>91</sup>

The reality today is that the citizens of Muslim countries are among the least empowered people on the planet. The average citizen is not a man – or woman – but a mouse! How can he or she be a *khalīfah*? Perhaps the worst thing about

totalitarian rule is that it causes human beings to abdicate their role as *khalīfahs* on the earth: it reduces them to something less than fully human.

Muslim jurists must consider what measures and mechanisms are needed to empower the powerless of the Muslim world – women as well as men, rural as well as urban, unlettered as well as literate. How can we ensure that people are enabled to make full use of their intelligence and experience? How may effective consultation of people whose interests are at stake be ensured in decision-making processes? How may racial, ethnic, sexual, religious, and other forms of discrimination be prevented? How may standing in judicial and administrative processes be secured for individuals and citizens' groups, so that they may contribute to enforcement of environmental law and seek remedy for environmental damage? How may public access to information be ensured, so that people may make enlightened decisions? How may openness and truthfulness be ensured in governance and administration? How may the agencies responsible for implementation and enforcement of environmental legislation be made accountable for their actions and inactions? And how may local stakeholders be enabled to manage the resources on which their livelihoods depend?

#### *Valuing of Natural Resources*

*Undervaluing of resources* – When the real economic values of natural resources are ignored by underpricing, they tend to be undervalued in a moral as well as an economic sense, and their survival may be put at risk. Elephants, for example, have high potential economic value for their ivory, meat, and leather, as well as the considerable revenues that they can bring through hunting licenses and tourism. They also cause considerable social and economic costs, destroying crops, homes, and sometimes human lives. In countries where the hunting of elephants and the sale of their products is prohibited – or where the proceeds return to the central treasury rather than to the rural people who bear the costs of their conservation – elephants have little perceived value to offset these costs, and the people have no incentive to conserve them. As a result, wildlife officers are engaged in a costly, brutal war with poachers to save elephants from extinction. And the poachers are winning.

On the other hand, in countries of southern Africa where local communities receive significant financial returns from the hunting, culling, and viewing of elephants, they are enthusiastically conserved, and their populations are stable. If rural communities are prevented from turning the potential economic advantages of wildlife resources into financial profit, they will sacrifice wildlife in favor of domestic livestock. Likewise, if forage is undervalued, it may be overgrazed almost to the point of extinction.<sup>92</sup>

*Economic instruments* – Economic instruments help to correct biases caused by underpricing of life-support systems and natural resources. They provide incentives for industries and consumers to meet environmental standards, while allowing them to choose which measures they adopt. Among the most important

principles for valuing resources and pricing goods are “the polluter pays” and “the user pays.” A factory, for example, should pay the costs of ensuring that its emissions and effluents do not affect human health or damage fisheries. Consequently, market prices reflect the full costs of preventing environmental damage that may result from pollution. A timber industry should pay the costs of soil loss, flooding, and loss of biological diversity that its activities cause, in addition to the cost of extracting timber. Again, market prices will then reflect the full social cost of the use and depletion of the resource, including any damage to ecosystems and any future resource benefits foregone because they have been reduced by current use.<sup>93</sup>

These principles accord with the principles of the *sharī‘ah* that “The benefit of a thing is in return for the liability attaching to it,” and “Liability for a thing is an obligation accompanying the benefit thereof.” Muslim jurists should examine the application of economic instruments, such as charges, resource taxes, subsidies, deposit and refund schemes, performance bonds, and tradable permits, to ascertain their relative appropriateness for Islamic societies and any variants, modifications, or alternative economic instruments that might be derived from the *sharī‘ah*.

*Economic indicators* – The standard measures of national income and economic performance, the gross national product and net national product, fail to take account of the depletion or depreciation of natural assets or the social costs of environmental damage. In reality, deforestation, desertification, the loss of fertile topsoil, and the depletion of mineral resources lead to lower yields and raise the costs of production. But because expenditures to counteract environmental damage and to give medical care add to the income of suppliers, they are counted as income rather than expenses. These measures are dangerously misleading. They may give an illusion of economic health when a country is heading for bankruptcy by destroying its forests and rangelands, polluting its air and waters, and depleting its topsoil and mineral resources.<sup>94</sup> Muslim jurists and socioeconomists must work together to develop new economic indicators and methods of environmental and resource accounting that will enable governments to understand the effects of their policies and to calculate the true economic condition of their countries.

### *Development and Lifestyle*

...Our Lord, grant us what is good in the present world, and what is good in the hereafter, and keep us from the torment of the fire. (Qur’an 2:201)

Conservation divorced from sustainable development is neither socially acceptable nor economically viable. “People whose very survival is precarious and whose prospects of even temporary prosperity are bleak cannot be expected to respond sympathetically to calls to subordinate their acute short term needs to the possibility of long term returns. Conservation must therefore be combined with measures to meet short term economic needs. The vicious circle by which poverty causes ecological degradation which in turn leads to more poverty can be



broken only by development. But if it is not to be self-defeating, it must be development that is sustainable – and conservation helps to make it so.”<sup>95</sup>

Taken as a whole, the Muslim countries are presently among the most impoverished and least developed on the earth. Life expectancy, literacy, and income are low in most Muslim countries, appallingly low in some. Maternal and infant mortality are high. Development – the modification of the earth and its resources to satisfy human needs and improve the quality of life – is high on the list of priorities in the Muslim world. But what exactly does development mean in an Islamic context, and what are its environmental costs? This is a fundamental question that Muslim jurists must consider.

We like to describe Islam as a balanced way, neither extravagant nor ascetic, seeking the good of the present material world together with the ultimate spiritual good of the hereafter. What does this imply with regard to the lifestyles to which we aspire?

At this point in time, an individual living in most countries of the Muslim world consumes a small fraction of the energy and materials consumed by his counterpart in the industrialized North, and his environmental impacts are in consequence much less severe. One of the most useful indicators of environmental impact is commercial energy consumption per person. A person in a high consumption country consumes, on average, eighteen times the commercial energy used by a person in a low consumption country, as well as causing much more pollution. The low consumption countries contain three-quarters of the earth’s human population and nearly all of the world’s Muslims, yet they account for only some 20 percent of commercial energy consumption.<sup>96</sup>

It is equally true, however, that the Muslim peoples aspire to lifestyles more like those of the industrialized nations, and that in the wealthiest Muslim countries, per capita rates of consumption and pollution may well exceed those of Western Europe and North America. The industrialized nations manage to maintain their lifestyles by drawing on the resources of the entire globe. If the burgeoning populations of Indonesia, Nigeria, Pakistan, Bangladesh, and the other countries of the Muslim world are to enjoy a similar material standard of living, from where will the resources come?

Economic growth will not necessarily go on forever. We must consider the possibility that contemporary capitalism, based on continual economic growth fuelled by interest (*ribā*), is by nature insatiably consumptive, unsustainable, and antithetical to the principles of Islam.

Apart from whether it is possible for the Muslim world to enjoy the lifestyle of the modern industrialized nations, it must be questioned whether, in light of the *sharī‘ah*, it is permissible. While the prophet Muhammad and his companions took great joy in the things of this world – their spouses and children, a drink of cold water, a verdant glen, a fine riding animal, and the rain falling on their shoulders – by today’s standards their lives were decidedly ascetic.

The object of development is surely not to consume as much as possible, but to enable people to lead healthy, fulfilling, and ennobling lives. It is indeed possible to live a healthy and joyous life without excessive consumption of the earth's resources. This is easy to proclaim, but more difficult to practice, especially on a national or global scale. Muslim jurists must work together with specialists in the social and technical sciences to prescribe measures to stabilize and, where possible, reduce our consumption of resources while enhancing the real quality of life. They must work to ensure that development in the Muslim world is sustainable: that it meets the needs of the present without compromising the ability of future generations to meet their own needs, and that it does not threaten the integrity of nature or the survival of other species.

In seeking the good of the present, ephemeral world, we must not lose sight of the fact that the everlasting good of the hereafter must take precedence. We must not allow our quest for material welfare to be achieved at the expense of our spiritual welfare; it must be subject to ethical constraints.

### *Population Control*

Population control is a particularly thorny issue, affecting people's most cherished individual rights and personal freedoms in addition to its political and economic ramifications.

Contraception has been widely discussed in *fiqh* literature from the outset, with almost universal consensus that it is permissible, based on the fact that the prophet Muhammad, upon him be peace and the blessing of God, did not prohibit *'azl (coitus interruptus)*. Different views were expressed by the various *fuqahā'* concerning the stipulations and conditions pertaining to birth control (e.g., whether it is permissible without the consent of the husband, or the wife) but, with the exception of Ibn Hazm, the jurists did not dispute its basic permissibility.<sup>97</sup>

With the advent of concerns about overpopulation in the latter half of the twentieth century, Muslims, like other peoples in the less developed countries, have understandably felt threatened by calls for population control issuing from wealthy industrial countries that are clearly keen to preserve their own standard of living and have a history of hostility toward Islamic civilization. After their initial anxieties regarding population control, however, Muslim scholars and leaders have increasingly endorsed it as they have gained experience in dealing with the socioeconomic realities of development. Vigorous population control programs have now been adopted in several Muslim countries with the blessing of the religious establishment.

*The limits to population growth* – What population the earth, or any one of its countries, can sustain depends both on how many people there are and on how much energy and other resources each person consumes and wastes. Muslims and non-Muslims of the “South” have been quick to point out that through excessive and wasteful use of the earth's resources, the smaller (albeit denser) populations of the industrialized countries cause greater environmental damage

than the larger populations of the nonindustrialized world. It was estimated in 1974 that one person in Switzerland consumed as much as forty Somalis.<sup>98</sup>

Many Muslims – and others – have called for the redistribution of resources as an alternative to population control. But with or without more equitable distribution of resources, we must face the fact that the rate at which we procreate will have a direct bearing on the way of life to which we and our descendants can realistically aspire. The question is not simply what number of human beings the earth can sustain, but what number it can sustain in health and happiness. Greater, perhaps, than the danger that we humans are headed for a catastrophic Malthusian denouement, is the danger that we will eventually control our population and adjust to the limits of our natural resources – but at a level that will deprive our posterity of so many of the blessings that make life worth living.

*Personal freedoms* – The right to enjoy the blessing of children is fundamental in Islam, and it is difficult to limit an individual's freedom to procreate by force of law. Offspring are described in the Qur'an as an adornment of this world, and as mentioned earlier, jurists have held that safeguarding of *nasl*, progeny or posterity, is one of the essential aims of Islamic law. The prophet Muhammad, upon him be peace and the blessing of God, encouraged Muslim men to “marry loving and fertile women, for I would outnumber the peoples by you.”<sup>99</sup> Indeed, within the coming decades, Islam will have a larger number of adherents than any other faith, if population projections are to be believed; and this is due more than anything else to our birth rate. But should this *hadīth* be construed as a commandment or a license to multiply ad infinitum? Like everyone else on earth, Muslims are faced with a trade-off between the blessings of raising a large quantity of children and providing a high quality of upbringing, education, and health care. Policymakers will have to provide the conditions and information to enable individuals – and nations – to make rational, ethical choices in light of the relevant principles of Islamic law. If two good things prove mutually exclusive, “the greater good is to be secured by exclusion of the lesser good.” “If two obligations come into conflict, that which is more fundamental is to be fulfilled.” If a benefit unavoidably brings with it a detriment, “the averting of harm takes precedence over the securing of benefits.”

Numerous policy issues are related to population control, and each must be assessed in light of the *sharī'ah*. Universal access to maternal and child health care is essential to preserve the fundamental values of life and posterity. It has been estimated that by enabling couples to space their children and avoid high-risk pregnancies, family planning alone could save the lives of two hundred thousand women and five million children annually.<sup>100</sup> Improving the education of women and girls is fully consonant with the *sharī'ah*, as is basic economic security. On the other hand, policies such as making contraceptives available to unmarried adolescents and adults, and the unrestricted use of abortion as an alternative to contraception have social implications that contradict basic *sharī'ah* values. Delaying the legal age of marriage beyond sexual maturity is conducive to premarital sexual relations. But if early marriage is to be

encouraged it must be joined with family-planning services and measures to facilitate women's education after marriage.

### *Genetic Resources*

Biological diversity encompasses the total variety of life on Earth – all species of plants, animals, and microorganisms, the range of genetic varieties within each species, and the ecosystems of which they are components. As a living genetic resource, each species and variety is unique and irreplaceable. On the conservation of biological diversity depends the functioning of the ecological processes and life-support systems that we need for our survival. On it depend our agricultural breeding programs for protection and improvement of cultivated plants and domestic animals, many of our scientific and medical advances and technological innovations, as well as the security of our forests, rangelands, fisheries...and all the industries that are based on living resources.<sup>101</sup>

According to Islamic ethics, human beings have no right to extirpate any species of God's creatures from the face of the earth. The governing authorities have the obligation to take all measures necessary to safeguard rare and endangered species of animals and plants and the habitats or biotopes needed for the survival of viable populations.<sup>102</sup> By far the most efficient and effective way to safeguard biological diversity is to conserve each species within its native habitat. The need for a comprehensive network of marine and terrestrial protected areas, or *himās*, has already been discussed. So has the need for comprehensive environmental planning, which includes rehabilitation and restoration of degraded ecosystems and other measures to safeguard vulnerable species and promote the recovery of species threatened with extinction. So has the need for regulation of hunting, fishing, forestry, grazing, and other harvesting of biological resources; regulation of trade in wildlife and wildlife products will be discussed further on. Here, other issues relating to the conservation of biological diversity, both philosophical and practical, will be considered.

God has made His creatures to be of service to one another, and all things are of service to humankind. We can never number the favors of our Lord. But we must not walk exultantly on the earth: "verily the creation of heaven and earth is greater than the creation of mankind" (Qur'an 40:57). Nowhere has God indicated that other creatures are created only – or even primarily – to serve human beings. It would be preposterous to imagine that these things were created merely for our enjoyment, and the height of arrogance to suppose that we have the right to stamp out any species in which we see no benefit! Taqī ad-Dīn Ahmad ibn Taymīyah remarked with regard to those Qur'anic verses in which God declares that He created His creatures for the children of Adam, "It is well known that in these creatures God has exalted purposes other than the service of man, *and greater than the service of man*; (in these verses) He only shows the children of Adam what benefits they have in them and what bounty He has bestowed on humankind."<sup>103</sup>

Indispensable as genetic resources are to our survival, their utilitarian value still cannot be the primary legal reason for conserving them. It is not possible for us to measure the utilitarian value of any creature because we do not even know what direct benefits to ourselves may be hidden within it, much less the ramifications of its ecological role in the biosphere. The primary legal basis, therefore, for conserving each and every species must be its intrinsic value as a creation of God, a sign and wonder, and a unique and irreplaceable manifestation of His glory.<sup>104</sup> The prophet Muhammad, upon him be peace and the blessing of God, told of a prophet who, having been stung by an ant, caused the entire anthill to be burned; God rebuked him, saying, “Because an ant stung you, you have destroyed a whole nation that proclaims My glory.”<sup>105</sup>

Ants feature in a number of illustrations of Islamic ethics, perhaps because they are among the smallest living beings perceived by human eyes. It is reported that the prophet Muhammad, upon him be peace and the blessing of God, came upon a fire burning on an anthill, and commanded the man who had kindled it, “Put it out, put it out!”<sup>106</sup> But what of viruses and other pathogens? Is the absolute destruction of a deadly virus justified, or should it be preserved (in isolation) as a creature of God – and a potential medicinal resource?

Another issue that Muslim jurists must address is the regulation of predator and pest control. Killing of animals and plants is legitimate in defense of human life, health, and property. But what are the limits? Once, when the prophet Muhammad, upon him be peace and the blessing of God, was with some of his companions in a cave at Minā, a viper appeared among them. He ordered them to kill it; but as it fled from them, he said, “God has saved it from your evil as He has saved you from its evil.”<sup>107</sup> Jurists must translate this principle of restraint into regulations to ensure that the defense of our lives, our livestock, and our crops does not lead to unnecessary killing, much less the utter extermination of any species of God’s creatures.

A major threat to biological diversity is the introduction of invasive alien species. Of course, ecosystems are not static, and every species anywhere was at one time not there – but in nature, introductions normally occur gradually over long periods of time, so that ecosystems are able to adapt. Introductions brought about by the activities of human beings, however, have resulted in a significant reduction of the earth’s biological diversity. It is neither possible nor desirable to prevent every introduction – introduced crops and domestic livestock are essential to our survival. However, it is necessary to prevent the introduction of exotic species that are likely to threaten ecosystems or native species, and to control or eradicate such species where damage has occurred.

Genetic engineering brings with it a host of ethical and practical problems, which Muslim jurists will be unable to avoid addressing. Is genetic manipulation to be prohibited absolutely as the satanic “changing of God’s creation,”<sup>108</sup> which may lead to environmental catastrophe? Or does it offer legitimate means to cure genetic illnesses and to stave off starvation by enhancing the drought resistance and disease resistance of our crops? Jurists might bear in mind that justifications are offered for most evils on the basis of the benefits they bring, whereas if, like

intoxicants and gambling, the harm in them is greater than the good, the *sharī'ah* requires their prohibition.<sup>109</sup> If, on the other hand, genetic engineering is permissible within limits, how are these limits to be defined? What safeguards are necessary? And what are the rights of the country – and local community – from which the genetic material has been obtained, to a fair share of ensuing profits, as well as the intellectual rights of individuals and laboratories to patent genetically engineered products?

### *Animal Rights*

Animals are distinguished from other natural resources in that, as sentient beings, they have certain legal rights in Islamic law. Not only is abuse of the resource prohibited, but also the abuse of individuals. The rights or legal claims of animals are less comprehensive than those of humans. Islamic law explicitly permits hunting, fishing, and the raising of bees and livestock for honey, work, milk and meat, wool, hair, and leather. But it forbids that God's creatures be used cruelly or wastefully. There is no prohibition on eating meat in Islam, provided that animals are given the conditions for good and healthy lives and that they are slaughtered or hunted as mercifully as possible.<sup>110</sup>

When all the losses of sentient life associated with farming and ranching are taken into account, including not only animals that are slaughtered, but also their parasites, and all the insect, bird, and mammal pests that must be killed to raise a viable crop, all the minute and microscopic creatures in the soil that are crushed by ploughing or trampling, and all the lives affected by the biological controls and chemicals we use, we cannot escape the fact that our lives involve the death of an appalling amount of sentient life. Of course we are morally bound to minimize this suffering and destruction. But we must recognize that cultivating crops is at least as costly in terms of life and suffering – and environmental impact – as is the raising and harvesting of livestock.

To live in this world we must take from it, for life must feed on life to live. The daily bread and meat from which we draw our strength and build our flesh is at the cost of a myriad lives. How shall we redeem their killing? If we do not use this strength to give back more than we have taken, then what are we ourselves but parasites? But if, in slaughtering and eating, we take God's name in gratitude and render thanks by building beauty, teaching truth, bringing new life to the land, or striving in His cause, we may transmute their lives into yet more life, and give meaning to their deaths, and sanctify them. Then the selfsame act of slaughter will no more be an act of desecration, but an offering of sacrifice.<sup>111</sup>

Many conservationists would exclude the subject of animal rights from discussions of conservation, because it has tended to confuse the conservation of species with purely ethical concerns relating to the treatment of individuals. This is partly a reaction to the positions of some animal rights activists against hunting, the raising of livestock, and the eating of meat, and it stems partly from the fact that in contemporary Western legal theory animals do not have legal rights. Among the difficulties with the concept of animal rights are the absence

of any universal criterion to determine what those rights are, and the fact that animals do not have “standing” to be represented in court.

In Islamic law, however, it is hardly possible to avoid discussion of the rights of animals in the context of conservation. The rights of animals, *huqūq al-bahā'im wa 'l-hayawān*, are enshrined as one of the categories of *huqūq al-'ibād*, the rights of God's servants, that is, human beings and animals.<sup>112</sup> These rights are detailed in numerous *ahādīth* and are summarized in the following passage by 'Izz ad-Dīn ibn 'Abd as-Salām:

The rights of livestock and other animals with regard to their treatment by man: These are that he spend on them the provision that their kinds require, even if they have aged or sickened such that he does not benefit from them; that he not burden them beyond what they can bear; that he not put them together with anything that would injure them, whether of their own kind or other species, and whether by breaking their bones or butting or wounding; that he slaughter them in the best way if he slaughters them, and neither flay their skins nor break their bones until their bodies have become cold and their lives have passed away; that he not slaughter their young within their sight; that he set them apart individually and provide them with comfortable resting places and watering places; that he put their males and females together during their mating seasons; that he not discard those which he takes in hunting, and neither shoot them with anything that breaks their bones nor bring about their destruction by any means that renders their meat unlawful to eat.<sup>113</sup>

With the exception of the two last clauses, which pertain to the hunting of wild animals, these rights apply to domestic animals and captive individuals of wild species. Our ethical obligations naturally apply primarily to those creatures whose welfare is most dependent on our actions. In the past, most wild populations were little affected by the acts of human beings. Now, their welfare and survival are increasingly, sometimes utterly, dependent on acts of humanity.

Although the rights of animals are limited, they are definitely meant to be safeguarded by the force of the law – not only through the office of the *muhtasib*, but also, in the view of the majority of jurists, by the courts. The governing authorities are obliged to intervene for the protection of animals whenever they are abused; to prohibit their killing by illicit methods or for illicit purposes, and to protect them from cruelty and wanton destruction. If an animal's owner mistreats it or fails to provide it adequate maintenance (*nafaqah*: food, water, shelter, and the like), the governing authorities are to compel him to provide for its needs.<sup>114</sup> The question of standing has been addressed as follows.

Whereas the predominant position in the Hanafī school of law, much like contemporary Western law, held that it is not possible for animals to be represented in court because they are analogous to crops, Muwaffaq ad-Dīn ibn Qudāmah argued for the majority of Sunnī schools that animals are in reality analogous to slaves, and that their rights are to be safeguarded by the courts.<sup>115</sup> In 1972 Christopher Stone argued that, like various inanimate objects such as corporations, ships at sea, and municipalities, natural objects should have the right to legal representation in United States law.<sup>116</sup>

If these rights of animals are secured, the impact on modern industrial farming and fishing practices will be revolutionary. It will require major changes

in the ways that biological and medical research and trade in wildlife are conducted, and in the design and management of abattoirs, livestock markets, zoos, and pet shops. Muslim jurists will have to look closely at the implications of the *sharī'ah* with regard to the use and abuse of living beings, and take bold stands to rectify the wrongs. They will also have to work together with specialists in veterinary medicine, wildlife biology, and related fields to translate the general precepts of the *sharī'ah* into detailed and specific regulations to secure the well being of each species in light of its nutritional, thermal, spatial, psychological, and other needs.

Under what conditions should people be permitted to keep wildlife in captivity? What regulations should govern trade in wildlife and wildlife products? Predator and pest control? Hunting, trapping, and fishing? According to a principle of Islamic law, “hunting is permissible, except for sport”<sup>117</sup> What measures are appropriate to prevent killing for sport? This is largely a matter of the hunter’s intent, and it is not easy to regulate. At what point does the hunter’s legitimate pleasure in his tracking and stalking skills, or the excitement of the chase, become blameworthy killing for sport? Should huntable species be narrowly defined as those which are customarily taken for food? Should penalties be imposed for wastage of game and fish? Should trophy hunting be prohibited as conducive to frivolous killing, or used as a means to enhance the value of wildlife resources and generate funds for wildlife conservation? These are questions that jurists in every Muslim country must examine carefully and strive to answer.

### *International Cooperation and Conflict*

The natural elements and processes that support life on Earth do not recognize the political boundaries imposed by man. This is particularly clear with regard to migratory species, international river basins, marine resources, and air pollution, including global warming, ozone depletion, and acid rain. Regional and international treaties and agreements have been drawn up to conserve shared resources and to avert environmental disasters. Muslim jurists should participate actively in the framing of such agreements, recognizing that, in line with those principles of Islam which forbid oppression and aggression, no nation has the right to deprive another of the means of subsistence. They should apply the precedents and the general principles of *siyar* (the Islamic conduct of state) to international environmental issues, to help ensure that development undertaken in one country does not lead to damage or degradation in the natural environment or resources of another country.<sup>118</sup>

Second, there is the need for creative approaches to conflict resolution, to settle international disputes over environmental impacts and the use of shared natural resources. Jurists must fight the tendency of nations and their rulers to retaliate in kind when wronged. The prophet Muhammad, upon him be peace and the blessing of God, said, “Do not be a people who say, ‘if others do good to us, we will do good to them, and if they wrong us, we will wrong them.’ Rather,



make up your minds to do good to those who do you good, and do not wrong those who do evil to you.”<sup>119</sup>

Third, there is the need to secure the natural environment and the earth’s resources from severe or irreparable damage caused by military actions. Muslim legal scholars have ruled that the inviolability (*hurmah*) of God’s creatures pertains even in war: “It is established that the Prophet, upon him be peace and the blessing of God, forbade the killing of bees and forbade the killing of any captured livestock...it is corruption, so it comes within what God has prohibited in declaring, ‘And when he turns away, he hastens through the land to cause corruption therein and to destroy the tilth and herds: And God does not love corruption’ (Qur’an 2:205). Furthermore, they are animals with the spirit of life, so it is not lawful to kill them... And because, as animals, they are inviolable; they are like women and children.”<sup>120</sup>

Muslim jurists need to issue unequivocal condemnation of scorched-earth tactics and the use of nuclear and other weapons of mass destruction, to strive to ensure that their governments abjure them, and to work together with other countries for their elimination.

## **Establishment of the Discipline**

### *The Gap between the Professions of Islamic Law and Conservation*

The greatest single obstacle to establishing the discipline of Islamic environmental law is the wide gulf that separates the conservation professions from those of Islamic law. The origin of this gap is the progressive marginalization of the *fuqahā’* that has taken place throughout the Muslim world over the past century or so. As the business of administration, policy, planning, management, and legislation has been taken over by legislators, technicians, and politicians with secular training, the *fuqahā’* have been isolated as professors in the universities and colleges, as scholars and writers. In most Muslim countries, even the *qādīs* in the *sharī’ah* courts no longer have jurisdiction over cases that pertain to environmental problems.

This is not to say that the *fuqahā’* are unconcerned about environmental issues. Indeed, a number of jurists are not only concerned, but also have wide knowledge of the relevant *ahādīth* and *ahkām*. Nor is there a lack of environmental specialists – planners, administrators, engineers, resource managers, lawyers, and others – who are passionately committed to implementing the *sharī’ah*.

The problem is that environmental law requires more than legal rulings and precedents from centuries gone by or ideal statements of general principle. It requires creative, practical, detailed application of these precedents and principles to specific environmental, socioeconomic, and technological problems. In other words, it requires *ijtihād*. One cannot be a *mujtahid* without being thoroughly grounded in both the substantive law, *fiqh*, and legal methodology, *usūl al-fiqh* (including *maqāsid ash-sharī’ah*), as well as having a

thorough knowledge of the issues and problems at hand. No matter how sincere and well intentioned, attempts at *ijtihād* by environmental specialists without knowledge of Islamic jurisprudence are invalid, and attempts at *ijtihād* by jurists who lack practical experience in environmental issues are irrelevant.

### *Bridging the Gap*

Among the first steps that must be taken is to build a network of people concerned about environmental law in Islam, including *fuqahā'* and '*ulamā'* as well as members of the conservation and environmental protection professions, planners, lawyers, economists, social scientists, educators, and others. Such a network may exchange information both formally and informally. A Web site on the Internet would be a most useful vehicle of communication for those who have access to it, and periodic workshops and conferences as well as a professional journal would serve as catalysts for research and discussion.

A compilation of sources and references on Islamic environmental law should also be initiated. To begin with, books, articles, masters' theses, and doctoral dissertations pertaining to the subject should be compiled, together with all the pertinent references listed in their bibliographies. People in the network could then be invited to submit annotated bibliographies and reviews. The entire list should be posted on the Web site referred to above, and periodically updated. It would also be advisable to have all source materials collected physically in a library of Islamic environmental law.

Training materials and courses in environmental issues should be designed for *fuqahā'* and made available to them in different Muslim countries. These materials and courses could be designed by people selected from the network, perhaps with the assistance of international groups of experts such as the World Conservation Union's Commission on Environmental Law and its Commission on Environmental, Economic, and Social Policy. At the same time, training materials and courses in Islamic jurisprudence should be made available to the conservation and environmental protection agencies, planners, and administrators in Muslim countries. These courses and training materials would also serve as a starting point from which to incorporate basic principles of environmental policy in *fiqh* curricula and Islamic legal principles in environmental studies curricula in countries of the Muslim world.

Among the most important steps that need to be taken to bridge the gap between the professions of environmental conservation and Islamic law is for Muslim jurists to participate in tackling and resolving environmental issues. This requires employment of *fuqahā'* in the agencies charged with developing and implementing environmental legislation, at least in those countries which recognize the *sharī'ah* as a source of legislation. *Ijtihād* cannot occur through hypothetical discussion; it requires real problems for which solutions are proposed, tested, and, as they succeed or fail, progressively refined.

### *Development of a Curriculum for the Profession*

The profession of Islamic environmental law will require academic degree programs to prepare the professionals to fill its posts. To begin with, one or more universities should be approached to initiate a course of study. The initial curriculum would be drawn largely from the compilation of sources and references and the training materials already discussed, and would have much in common with the curriculum of Islamic economics. It would have to be multidisciplinary, as the profession requires equally strong grounding in the religious, social, natural, and technical sciences.

Among the religious sciences, both *fiqh* and *usūl al-fiqh* will be essential. *Fiqh* would provide the substantive material, with emphasis on the *mu'āmalāt* or transactions. *Usūl al-fiqh* must be taught in such a manner as to provide a dynamic methodology for the application of legal principles to new problems, not as theoretical justification for static rulings. Taught properly, *usūl al-fiqh* would not only enable scholars to apply legal principles with integrity, versatility, and creativity; it would also help them to appreciate and respect the reasoning behind other opinions and approaches with which they may not necessarily agree. Proficiency in the Arabic language is a prerequisite to reading Islamic texts and references, and Arabic would be integral to the curriculum.

The social sciences must provide students with a sound understanding of the relationship between people and their environment. Human ecology and resource economics are essential subjects. Both qualitative and quantitative methods of sociological research and analysis should be taught, as well as practical skills such as communication and law enforcement.

Of the natural and applied sciences, a basic understanding of biology and geomorphology is essential, with emphasis on the practical applications to environmental planning, environmental impact assessment, management of wildlife, soils, rangelands, forests, watersheds and wetlands, and marine and coastal resources. Knowledge of comparative environmental legislation is required to keep abreast of developments around the world.

It is imperative that the curriculum focus on live issues in the real world rather than idealized arcadian or utopian visions, and that teaching methods equip students with problem-solving skills.

One of the practical difficulties in initiating a new profession is finding the professors. Until the number of graduates is large enough to fill both university chairs and managerial posts in the world at large, there will be a lack of teaching personnel who have received integrated education in Islamic environmental law. Interim solutions could include team teaching, in which *fuqahā'* and environmental professionals teach courses together, and multidisciplinary courses in which students learn from a wide variety of experts in different fields. Another useful approach, used with much success at the International Islamic University in Malaysia, is to require students to take double majors or a major and minor subject in which they combine *sharī'ah* studies with the applied or social sciences.

## *Prospects for the Profession of Islamic Environmental Law*

In view of the rapid increase in environmental awareness and the strong environmental concerns of many Muslim thinkers, there is little doubt that the discipline of Islamic environmental law will soon be recognized. We would be well advised, however, to anticipate its needs so as to avoid repeating ideals and generalities or reacting to sectoral needs and emergencies in a piecemeal and haphazard manner. We should act promptly and with foresight, to plan for the education and training of professionals and professors, prepare balanced and comprehensive curricula, and ensure that a practical, equitable, and implementable system of environmental legislation is derived from the noble principles of the *sharī'ah*.

---

### Notes

<sup>1</sup> Rigorously authenticated *hadīth* related by Muhammad ibn Ismā'īl Al-Bukhārī (194–256 H.) from An-Nu'mān ibn Bashīr.

<sup>2</sup> See Abū Ja'far Muhammad ibn Jarīr At-Tabarī (d. 310 H. / 922 G.) and Ismā'īl ibn 'Amr ibn Kathīr (d. 774 H. / 1372 G.), in their respective *tafsīrs* of the words *rabb al-'ālamīn* in *Sūrat al-Fātihah*.

<sup>3</sup> 'Izz ad-Dīn ibn 'Abd as-Salām (d. 660 H. / 1263 G.), *Qawā'id al-Ahkām fī Masālih al-Anām: fasl fī bayān masālih al-mu'āmalāt wa 't-tasarrufāt*. I am indebted to Dr. Umar F. Abd-Allah of the Nawawi Foundation for drawing my attention to Hamd Al-Khattābī's commentary in *Ma'ālim as-Sunan* on the prophet Muhammad's command to cease killing black dogs: "The black dog was one of the *umam* (communities, societies). Thus it was not created but for some good purpose, so the obliteration of its kind must create some deficiency (*khalal*) in nature."

<sup>4</sup> *Hadīth* of unsubstantiated authenticity related by Abū Bakr Ahmad ibn Husayn Al-Bayhaqī (d. 458 H. / 1066 G.), in *Shu'ab al-Īmān*, chapter 49 (*bāb fī tā'at ulī 'l-amr*): *fasl fī nasīhat al-wilāt wa wa'zihim*, *hadīth* nos. 7444–7449, and by Walī ad-Dīn Muhammad ibn 'Abd-Allāh Al-Khatīb at-Tabrīzī in *Mishkāt al-Masābih*, compiled 737 H. / 1337 G., *kitāb al-ādāb, bāb ash-shafaqah wa 'r-rahmah 'alā 'l-khalq*, *hadīth* nos. 4998, 4999 from Anas ibn Mālik and 'Abd-Allāh ibn Mas'ūd.

<sup>5</sup> Abubakr A. Bagader, Abdullatif T. E. El-Sabbagh, Mohamed A. Al-Glayand, and Mawil Y. I. Samarrai, in collaboration with Othman A. Llewellyn, *Environmental Protection in Islam*, 2d rev. ed., IUCN Environmental Policy and Law paper no. 20 Rev, World Conservation Union / Meteorology and Environmental Protection Administration of the Kingdom of Saudi Arabia (Gland, Switzerland and Cambridge: IUCN, 1994), 1–2. Also see Othman A. Llewellyn, "Islamic Jurisprudence and Environmental Planning," *Journal of Research in Islamic Economics* (Jeddah) 1, no. 2 (1984): 29; Othman Llewellyn, "Desert Reclamation and Islamic Law," *The Muslim Scientist* (Plainfield, Indiana) 11, no. 1 (1982): 10; and Othman Llewellyn, "Shari'ah-Values Pertaining to Landscape Planning and Design," in *Islamic Architecture and Urbanism* (Dammam, Saudi Arabia: King Faisal University, 1983), 32.

<sup>6</sup> O. Llewellyn, unpublished letter; Mawil Izzidien Samarrai, "Environmental Protection and Islam," *Journal of the Faculty of Arts and Humanities*, King Abdulaziz University (Jeddah) 5 (1985): 37–39; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 5–6, 9–10.

---

<sup>7</sup> Llewellyn, unpublished letter; The Qur'an, *Sūrat ad-Dukkhān*, āyahs 38–39, *Sūrat al-Anbiyā'*, āyahs 16–18, *Sūrat Sād*, āyahs 26–28, *Sūrat Āl 'Imrān*, āyahs 190–191, *Sūrat Ibrāhīm*, āyah 19, *Sūrat an-Nahl*, āyah 3, *Sūrat al-Furqān*, āyah 68, *Sūrat al-'Ankabūt*, āyah 44, *Sūrat al-Jāthiyah*, āyah 22, *Sūrat at-Taghābun*, āyah 3, etc.

<sup>8</sup> See Ibrāhīm ibn Mūsā Ash-Shātībī (d. 790 H. / 1388 G.), *Al-Muwāfaqāt fī Usūl ash-Sharī'ah: kitāb al-maqāsid*: preface.

<sup>9</sup> Rigorously authenticated *hadīth* related by Muslim and Abū Dāwūd from Shaddād ibn Aws, and rigorously authenticated *hadīth* related by Al-Bukhārī and Muslim from Abū Hurayrah.

<sup>10</sup> *Hadīth* related by Abū Dāwūd and At-Tirmidhī from 'Abd-Allāh ibn 'Amr (*Mishkāt al-Masābīh*, *hadīth* no. 4969).

<sup>11</sup> Rigorously authenticated *hadīth* related by Muslim from Abū Sa'īd Al-Khudrī.

<sup>12</sup> Abdal Hamid Fitzwilliam-Hall, "Exploring the Islamic Environmental Ethic." This paper, not yet published, eloquently discusses the concept of *khilāfah* and its interpretation by modern scholars, with specific reference to Sayyid Qutb, *Fī Zilāl al-Qur'ān*, commentary on *Sūrat al-Mā'idah*, āyahs 55–56, *Sūrat al-Baqarah*, āyah 30, etc.

<sup>13</sup> The Qur'an, *Sūrat at-Tīn*, āyahs 4–8.

<sup>14</sup> Llewellyn, unpublished letter; The Qur'an, *Sūrat az-Zalzalah*, āyahs 7–8; rigorously authenticated *hadīth* related by Al-Bukhārī and Muslim from 'Abd-Allāh ibn 'Umar. Also see Abū 'Ubayd Al-Qāsim ibn Sallām (d. 224 H.) *Kitāb al-Amwāl: bāb haqq al-imām 'alā 'r-ra'iyah wa haqq ar-ra'iyah 'alā 'l-imām*.

<sup>15</sup> Rigorously authenticated *hadīth* related by Muslim from Abū Mālik Al-Ash'arī.

<sup>16</sup> Llewellyn, unpublished letter, cf. Abū Yūsuf Ya'qūb ibn Ibrāhīm (d. 182 H. / 798 G.), *Kitāb al-Kharāj*, opening exhortation.

<sup>17</sup> The Qur'an, *Sūrat al-Ahzāb*, āyah 72.

<sup>18</sup> Llewellyn, unpublished letter; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 30.

<sup>19</sup> Ash-Shātībī, *Al-Muwāfaqāt fī Usūl ash-Sharī'ah: kitāb al-ijtihād, at-taraf al-awwal fī 'l-ijtihād*.

<sup>20</sup> *Majallat al-Ahkām al-'Adliyah* (the Ottoman *Corpus of Judicial Rules*, compiled on the basis of major Hanafī legal works and enacted in 1293 H. / 1876 G.), article 2.

<sup>21</sup> The Qur'an, *Sūrat az-Zalzalah*, āyahs 7–8; also see *Sūrat al-Jāthiyah*, āyah 15, *Sūrat an-Najm*, āyah 31, etc.; Llewellyn, "Islamic Jurisprudence and Environmental Planning," 28; Llewellyn, "Desert Reclamation and Islamic Law," 10; Llewellyn, "Shari'ah-Values Pertaining to Landscape Planning and Design," 32; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 17, 20, 30.

<sup>22</sup> See Tāj ad-Dīn 'Abd al-Wahhāb ibn 'Alī As-Subkī (d. 771 H.); *Al-Ashbāh wa 'n-Nazā'ir*; Jalāl ad-Dīn 'Abd ar-Rahmān As-Suyūtī (d. 911 H.), *Al-Ashbāh wa 'n-Nazā'ir*; Zayn al-'Ābidīn ibn Nujaym (d. 970 H.), *Al-Ashbāh wa 'n-Nazā'ir*; *Majallat al-Ahkām al-'Adliyah*; Subhī Mahmassani, *Falsafat al-Tashrī fī al-Islām: The Philosophy of Jurisprudence in Islam*, tr. Farhat J. Ziadeh (Leiden: E. J. Brill, 1961), 149–159. On applying these legislative principles to

---

environmental issues, see Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 13, 18–23 and S. Waqar Ahmed Husaini, *Islamic Environmental Systems Engineering* (London: Macmillan, 1980), 76–79.

<sup>23</sup> Taqī ad-Dīn Ahmad ibn ‘Abd al-Halīm ibn Taymīyah (d. 728 H. / 1328 G.), *As-Siyāsah ash-Shar‘īyah: al-bāb ath-thānī: al-amwāl, al-fasl al-khāmis: az-zulm al-wāqī‘ min al-wilāyat wa ‘r-ra‘īyah*; Llewellyn, “Desert Reclamation in Islamic Law,” 13; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 20.

<sup>24</sup> Ash-Shātībī, *Al-I‘tisām: al-bāb ath-thāmin fī ‘l-farq bayn al-bida‘ wa ‘l-masālih al-mursalāh wa ‘l-Istihsān*; As-Suyūṭī, quoted in ‘Uthmān ibn Fūdī (d. 1817 G.), *Bayān Wujūb al-Hijrah ‘alā ‘l-‘Ibād*, ed. and trans. F. H. El-Masri (Khartoum: Khartoum University Press; New York: Oxford University Press, 1978), Arabic text, p. 82, English translation, p. 104; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 20; Llewellyn, “Desert Reclamation in Islamic Law,” 13–14.

<sup>25</sup> ‘Izz ad-Dīn ibn ‘Abd as-Salām, *Qawā‘id al-Ahkām fī Masālih al-Anām: fasl fī tanfīdh tasarrufāt al-bughāh wa a‘immat al-jūr limā wāfaq al-haqq li-darūrat al-‘āmmah*. Also see Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 21; Llewellyn, “Desert Reclamation in Islamic Law,” 14.

<sup>26</sup> Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 21; Husaini, *Islamic Environmental Systems Engineering*, 80–81, ref. to *Majallah*, article 30.

<sup>27</sup> Llewellyn, “Islamic Jurisprudence and Environmental Planning,” 30.

<sup>28</sup> Abū ‘l-Faraj ‘Abd ar-Rahmān ibn Rajab (d. 795 H. / 1393 G.), *Al-Qawā‘id: qā‘idah* no. 86.

<sup>29</sup> Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 18; Llewellyn, “Desert Reclamation and Islamic Law,” 11.

<sup>30</sup> *Hadīth* related by the Imām Mālik in the *Muwatta‘* with an incomplete (*mursal*) chain of transmission, and by Al-Hākim in the *Mustadrak* with a complete chain, which he described as rigorously authenticated according to the criteria of Muslim.

<sup>31</sup> Ahmad Zaki Yamani, *Islamic Law and Contemporary Issues* (Takoma Park, Maryland: The Crescent Publications, n. d.), 22–26; Llewellyn, “Islamic Jurisprudence and Environmental Planning,” 39; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 18; Llewellyn, “Desert Reclamation and Islamic Law,” 11; Llewellyn, “Shari‘ah-Values Pertaining to Landscape Planning and Design,” 34.

<sup>32</sup> *Athar* related by Yahyā ibn Ādam Al-Qurashī (d. 203 H.) in his *Kitāb al-Kharāj*, from Sa‘īd ad-Dabbī. Also see Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 3; Llewellyn, “Desert Reclamation in Islamic Law,” 11; Llewellyn, “Islamic Jurisprudence and Environmental Planning,” 36.

<sup>33</sup> In addition to the *āyahs* quoted above, see the Qur’an, *Sūrat al-Qasas*, *āyah* 77, *Sūrat ash-Shu‘arā‘*, *āyahs* 151–152, *Sūrat al-Baqarah*, *āyah* 205, *Sūrat al-Isrā‘*, *āyahs* 26–27. Also see Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 7, 17; Llewellyn, “Desert Reclamation and Islamic Law,” 13.

<sup>34</sup> *Hadīth* of unsubstantiated authenticity related by the Imām Ahmad in the *Musnad* and by Ibn Mājah from ‘Abd-Allāh ibn ‘Amr (*Mishkāt al-Masābih*, *hadīth* no. 427). Also see Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 7; Llewellyn, “Desert Reclamation and Islamic Law,” 13.

---

<sup>35</sup> *Hadīth* related by Abū Dāwūd and At-Tabarānī from ‘Abd-Allāh ibn Hubshī (*Mishkāt al-Masābīh*, *hadīth* no. 2970); also see *ahādīth* in Nūr ad-Dīn ‘Alī ibn Abī Bakr Al-Haythamī (d. 807 H.), *Majma‘ az-Zawā‘id wa Manba‘ al-Fawā‘id: kitāb al-buyū‘, bāb fīman qata‘a as-sidr* and *kitāb al-adab, bāb fīman qata‘a as-sidr*.

<sup>36</sup> *Majallat al-Ahkām al-‘Adliyah*, article no. 58; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 19.

<sup>37</sup> J. C. Wilkinson, “Islamic Water Law with special Reference to Oasis Settlement,” *Journal of Arid Environments* (London) 1 (1978): 95.

<sup>38</sup> *Ahādīth* related by the Imām Ahmad, At-Tirmidhī and Abū Dāwūd from Sa‘īd ibn Zayd, with a sound (*jayyid*) chain of transmission, by Al-Bukhārī from ‘Ā’ishah, and by Ash-Shāfi‘ī from Tāwūs (*mursal*). *Mishkāt al-Masābīh*, *hadīth* nos. 2944, 2991, 3003.

<sup>39</sup> See Muwaffaq ad-Dīn ‘Abd-Allāh ibn Qudāmah (d. 620 H.), *Al-Mughnī: kitāb ihyā’ al-mawāt*; Abū Yūsuf, *Kitāb al-Kharāj*; Mahmūd Al-Muzaffar, *Ihyā’ al-Arādī al-Mawāt: Dirāsah Fiqhīyah Muqāranah* (Beirut: Dar al-Kutub, 1982), 107–138, 221–262; ‘Allāl al-Fāsī, *Maqāsīd ash-Sharī‘at al-Islāmīyah* (Casablanca: Maktabat al-Wahdat al-‘Arabīyah, 1967), 110–112; Othman A. Llewellyn, “Conservation in Islamic Law” in *National Legal Strategies for Protected Areas Conservation and Management*, Fourth World Congress on National Parks and Protected Areas, Caracas, 1992, 45–46; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 24–27.

<sup>40</sup> Ibn Qudāmah, *Al-Mughnī: kitāb ihyā’ al-mawāt: fasl wa mā qaruba min al-‘āmīr wa ta‘allaqa bi-masālihīhī...*; Al-Muzaffar, *Ihyā’ al-Arādī al-Mawāt*, 107–138; Al-Fāsī, *Maqāsīd ash-Sharī‘at al-Islāmīyah*, 110–112.

<sup>41</sup> Ibn Qudāmah, *Al-Mughnī: kitāb ihyā’ al-mawāt: fasl wa mā nadiba ‘anhū al-mā’ min al-jazā’ir...* Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 24, 31; Llewellyn, “Islamic Jurisprudence and Environmental Planning,” 44–46. Comprehensive environmental planning and management are increasingly known as bioregional planning and management; see the *Global Biodiversity Strategy* (n. p., WRI, IUCN, UNEP, 1992), 97–100.

<sup>42</sup> Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 19; Llewellyn, “Islamic Jurisprudence and Environmental Planning,” 42.

<sup>43</sup> *Hadīth* related by Abū Dāwūd, At-Tirmidhī and An-Nasā’ī from ‘Ā’ishah. Also see *Majallat al-Ahkām al-‘Adliyah*, articles nos. 85, 87, and 88; Mahmassani, *Falsafat al-Tashrī‘ fī al-Islām: The Philosophy of Jurisprudence in Islam*, 203–204; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 19.

<sup>44</sup> Graham Child and John Grainger, *A System Plan for Protected Areas for Wildlife Conservation and Sustainable Rural Development in Saudi Arabia* (Gland, Switzerland: National Commission for Wildlife Conservation and Development and IUCN, The World Conservation Union, 1990), 109.

<sup>45</sup> *Caring for the Earth: A Strategy for Sustainable Living* (Gland, Switzerland: Published in partnership by IUCN, UNEP, and WWF, 1991), 42.

<sup>46</sup> *Ibid.*, 58; also see *Global Biodiversity Strategy*, 82.

<sup>47</sup> Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 30–31.

<sup>48</sup> *Caring for the Earth*, 9–10.

---

<sup>49</sup> Child and Grainger, *A System Plan for Protected Areas*, 107. A fugitive resource is not fixed in time or space; it may move from place to place and be fleeting, transient, or ephemeral.

<sup>50</sup> On Islamic water law, see Michael E. Norvelle, “Water Use and Ownership According to Texts of Hanbali Fiqh” (Master’s Thesis, McGill University, 1974); Michael E. Norvelle, “The Development of Water Law in the Arid Lands of the Middle East and the United States: A Comparative Study,” in *Arid Lands Today and Tomorrow, Proceedings, International Resource and Development Conference*, Tucson, Arizona, 1985, (Boulder, Colorado: Westview Press, 1988); A. M. A. Maktari, *Water Rights and Irrigation Practices in Lahj: A Study of the Application of Customary and Shari’ah Law in South-west Arabia* (Cambridge: Cambridge University Press, 1971), 9–30; Wilkinson, “Islamic Water Law with special Reference to Oasis Settlement,” 87–96; Child and Grainger, *A System Plan for Protected Areas*, 107–110; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 6–7.

<sup>51</sup> Child and Grainger, *A System Plan for Protected Areas*, 110.

<sup>52</sup> Rigorously authenticated *hadīth* related by Al-Bukhārī and Muslim from Abū Hurayrah (Al-Bukhārī, *hadīth* nos. 543, 544 and commentary by Al-Hāfiz Shihāb ad-Dīn ibn Hajar Al-‘Asqalānī in *Fath al-Bārī; Mishkāt al-Masābīh*, *hadīth* no. 2994); Ibn Qudāmah, *Al-Mughnī: kitāb ihyā’ al-mawāt: fasl fī ahkām al-miyāh*; Llewellyn, “Conservation in Islamic Law,” 46–47.

<sup>53</sup> Llewellyn, “Conservation in Islamic Law,” 47; Ash-Shātībī, *Al-I’tisām: al-bāb ath-thāmin fī ’l-farq bayn al-bida’ wa ’l-masālih al-mursalāh wa ’l-Istihsān; Majallat al-Ahkām al-‘Adliyah*, articles 26 and 30.

<sup>54</sup> Llewellyn, “Conservation in Islamic Law,” 43–48; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 19; Maktari, *Water Rights and Irrigation Practices in Lahj*, 16–18; Ibn Qudāmah, *Al-Mughnī: kitāb ihyā’ al-mawāt: fasl fī ahkām al-miyāh*; Abū Yūsuf, *Kitāb al-Kharāj, fasl fī ’l-kala’ wa ’l-murūj*.

<sup>55</sup> Child and Grainger, *A System Plan for Protected Areas*, 110.

<sup>56</sup> Child and Grainger, *A System Plan for Protected Areas*, 143–159, 169–172; Llewellyn, “Conservation in Islamic Law,” 46–48; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 30–31.

<sup>57</sup> Rigorously authenticated *hadīth* related by Al-Bukhārī and Muslim from ‘Abd-Allāh ibn ‘Abbās; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 26.

<sup>58</sup> Rigorously authenticated *hadīth* related by Muslim from Jābir ibn ‘Abd-Allāh; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 26.

<sup>59</sup> Rigorously authenticated *hadīth* related by Muslim from Abū Hurayrah; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 26.

<sup>60</sup> Patricia R. Gasperetti, “Natural History Survey of the Makkah By-Pass – Preliminary Report,” *Journal of the Saudi Arabian Natural History Society* (Jeddah) 2, no. 6 (July 1986): 7–27.

<sup>61</sup> Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 26.

<sup>62</sup> Ibn Qudāmah, *Al-Mughnī: kitāb ihyā’ al-mawāt: fasl wa mā qaruba min al-‘āmir wa ta’allaqa bi-masālihīhī...*



---

<sup>63</sup> On *harīm* zones, see Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 26–27; Llewellyn, “Conservation in Islamic Law,” 51–52; Abū Yūsuf, *Kitāb al-Kharāj*; Ibn Qudāmah, *Al-Mughnī: kitāb ihyā’ al-mawāt: fasl fī ahkām al-miyāh*; ‘Uthmān ibn Fūdī, *Bayān Wujūb al-Hijrah ‘alā ‘l-‘Ibād*, Arabic text, pp. 40–41, English translation, pp. 72–73.

<sup>64</sup> Llewellyn, “Conservation in Islamic Law,” 52.

<sup>65</sup> John Grainger and Abdullah Ganadelly, “Hemas: an Investigation into a Traditional Conservation Ethic in Saudi Arabia,” *Journal of the Saudi Arabian Natural History Society* (Jeddah) 2, no. 6 (July 1986): 28–31; Child and Grainger, *A System Plan for Protected Areas*, 94.

<sup>66</sup> Rigorously authenticated *hadīth* related by Al-Bukhārī and Muslim from An-Nu‘mān ibn Bashīr.

<sup>67</sup> Muhammad ibn Idrīs Ash-Shāfi‘ī (150–204 H. / 767–820 G.), *Al-Umm: man qāla lā himā illā himan min al-ard al-mawāt*; Ibn Qudāmah, *Al-Mughnī: kitāb ihyā’ al-mawāt: fasl fī ‘l-himā*.

<sup>68</sup> Rigorously authenticated *hadīth* related by Al-Bukhārī from ‘Abd-Allāh ibn ‘Abbās (*Mishkāt al-Masābīh*, *hadīth* no. 2992); Ibn Qudāmah, *Al-Mughnī: kitāb ihyā’ al-mawāt: fasl fī ‘l-himā*; John Grainger and Othman Llewellyn, “Sustainable Use: Lessons from a Cultural Tradition in Saudi Arabia,” *Parks: The International Journal for Protected Area Managers* (Gland, Switzerland) 4, no. 3 (1994): 8–9.

<sup>69</sup> Rigorously authenticated *hadīth* related by Muslim from Abū Hurayrah; Abū Yūsuf, *Kitāb al-Kharāj: fasl fī ‘l-kala’ wa ‘l-murūj*; Ibn Qudāmah, *Al-Mughnī: kitāb ihyā’ al-mawāt: fasl fī ‘l-himā*; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 25–26.

<sup>70</sup> Ibn Qudāmah, *Al-Mughnī: kitāb ihyā’ al-mawāt: fasl fī ‘l-himā*.

<sup>71</sup> Abū Yūsuf, *Kitāb al-Kharāj: fasl fī ‘l-kala’ wa ‘l-murūj*; Ibn Qudāmah, *Al-Mughnī: kitāb ihyā’ al-mawāt: fasl fī ‘l-himā*.

<sup>72</sup> ‘Uthmān ibn Fūdī, *Bayān Wujūb al-Hijrah ‘alā ‘l-‘Ibād*, Arabic text, pp. 37–38, English translation, p. 70.

<sup>73</sup> On customary *himās* in Saudi Arabia, see Omar Draz, *The Hema System of Range Reserves in the Arabian Peninsula: Its Possibilities in Range Improvement and Conservation Projects in the Middle East*, FAO/PL:PFC/13.11, FAO (Rome, 1969); Omar Draz, *Rangeland Development in Saudi Arabia* (Riyadh University, 1965); Grainger and Ganadelly, “Hemas: an Investigation into a Traditional Conservation Ethic in Saudi Arabia,” 28–31; Y. Ghanem and J. Eighmy, “Hema and traditional land use management among arid zone villagers of Saudi Arabia,” *Journal of Arid Environments* (London) 7 (1984): 287–297; and Grainger and Llewellyn, “Sustainable Use,” 8–11.

<sup>74</sup> Grainger and Llewellyn, “Sustainable Use,” 11–12.

<sup>75</sup> *Ibid.*, 12–15; Llewellyn, “Conservation in Islamic Law,” 49–50.

<sup>76</sup> An endangered species is a species threatened with extinction; an endemic species occurs only within a particular geographic area and nowhere else on Earth; a relict species is a species that has survived while others, related geographically or genetically, have become extinct, such as a species that had a wider range but now is found only in particular locations or one that has survived relatively unchanged from an earlier period. A “key” species is any species that is essential to ecosystem structure or function, while a “keystone” species has a critical role in

---

maintaining an ecosystem, disproportionate to its relative abundance or total biomass; its disappearance from an ecosystem results in a significant reduction of biological diversity.

<sup>77</sup> The concept of the “tragedy of the commons,” articulated by Garrett Hardin, holds that individuals using a common resource are inevitably encouraged to overexploit it because they alone reap the benefits of doing so, while the costs are shared by the whole community. Conversely, there is no incentive to invest in the resource, as the costs fall to the individual and the whole community shares the benefits. If, for example, a person fells a tree that is owned communally, he gets all the timber whereas the loss of the tree is shared by the community; if he plants a tree, he bears the cost of doing so, perhaps only to have it eaten by someone else’s livestock. “Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons.” See Garrett Hardin, “The Tragedy of the Commons,” *Science* 162 (1968): 1243–1248; Child and Grainger, *A System Plan for Protected Areas*, 97.

<sup>78</sup> Grainger and Llewellyn, “Sustainable Use,” 15.

<sup>79</sup> Rigorously authenticated *hadīth* related by Al-Bukhārī and Muslim from ‘Abd-Allāh ibn ‘Umar.

<sup>80</sup> Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 27; Llewellyn, “Desert Reclamation and Islamic Law,” 19; Llewellyn, “Conservation in Islamic Law,” 52–53.

<sup>81</sup> Llewellyn, “Conservation in Islamic Law,” 53; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 27.

<sup>82</sup> On *iqṭā’*, *iqṭā’ istighlāl*, *ijārah*, and *hukr*, see Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 25; Llewellyn, “Desert Reclamation and Islamic Law,” 15–16; Llewellyn, “Conservation in Islamic Law,” 50–51. On *iqṭā’ istighlāl*, see Ibn Taymīyah, *Majmū’ Fatāwā Shaykh al-Islām Ahmad ibn Taymīyah* (Saudi Educational Attache, Morocco, 1398) 30:127–128.

<sup>83</sup> Rigorously authenticated *hadīth* related by Muslim from Abū Sa‘īd al-Khudrī.

<sup>84</sup> Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 30.

<sup>85</sup> *Ibid.*

<sup>86</sup> *Athar* related by Ibn al-Qāsim from the Imām Mālik. See Yūsuf ibn ‘Abd-Allāh ibn ‘Abd al-Barr, *Tajrīd at-Tamhīd limā fī ‘l-Muwatta’ min al-Asānīd*, 1:118; ‘Uthmān ibn Fūdī, *Bayān Wujūb al-Hijrah ‘alā ‘l-‘Ibād*, Arabic text, p. 143, English translation, p. 163.

<sup>87</sup> Ibn Taymīyah, *As-Siyāsah ash-Shar‘īyah*. Also see Erwin I. J. Rosenthal, *Political Thought in Medieval Islam* (Cambridge: Cambridge University Press, 1958), 51–61; Husaini, *Islamic Environmental Systems Engineering*, 92.

<sup>88</sup> Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 21; Llewellyn, “Desert Reclamation and Islamic Law,” 19–20. On the *hisbah* and the *muhtasib*, see Tāj ad-Dīn As-Subkī, *Mu‘īd an-Ni‘am wa Mubīd an-Niqam*, ‘Abd ar-Rahmān ibn Nāsir Ash-Shayzarī (d. 589 H. / 1193 G.), *Nihāyah ar-Rutbah fī Talab al-Hisbah*, and Diyā’ ad-Dīn Muhammad ibn Muhammad ibn Al-Ukhūwah (d. 729 H. / 1329 G.), *Ma‘ālim al-Qurbah fī Ahkām al-Hisbah*.

<sup>89</sup> Rigorously authenticated *hadīth* related by Muslim from Abū Hurayrah.

- 
- <sup>90</sup> Abū ‘Ubayd Al-Qāsim ibn Sallām, *Kitāb al-Amwāl: bāb haqq al-imām ‘alā ‘r-ra‘īyah wa haqq ar-ra‘īyah ‘alā ‘l-imām*; Llewellyn, “Islamic Jurisprudence and Environmental Planning,” 45.
- <sup>91</sup> Ibn Kathīr, *Al-Bidāyah wa ‘n-Nihāyah: khilāfat ‘Uthmān*, ed. ‘Abd al-Hamīd Hindāwī (Sidon; Beirut: Al-Maktabat al-‘Asrīyah, 2001 G.) 5:373.
- <sup>92</sup> Child and Grainger, *A System Plan for Protected Areas*, 96–106, 149–154; *Caring for the Earth*, 15 (box 3), 42. Also see Sandra Mbanefo and Hillary de Boerr, “CAMPFIRE in Zimbabwe” in Elizabeth Kempf, ed., *The Law of the Mother: Protecting Indigenous Peoples in Protected Areas* (San Francisco: Sierra Club Books, 1993), 81–88.
- <sup>93</sup> *Caring for the Earth*, 69–72.
- <sup>94</sup> *Ibid.*, 72–74.
- <sup>95</sup> *World Conservation Strategy: Living Resource Conservation for Sustainable Development* (Gland, Switzerland: IUCN, 1980), article 1:11.
- <sup>96</sup> *Caring for the Earth*, 45 (box 8) and 194–197 (annex 5).
- <sup>97</sup> Basim F. Musallam, “The Islamic sanction of contraception” in *Population and its problems: A plain man’s guide*, ed. H. B. Parry (Oxford: Clarendon Press, 1974), 300–310.
- <sup>98</sup> *World Conservation Strategy*, Introduction: living resource conservation for sustainable development (box: “Why a world conservation strategy is needed”).
- <sup>99</sup> Rigorously authenticated *hadīth* related by Abū Dāwūd and An-Nasā’ī from Ma‘qal ibn Yasār (*Mishkāt al-Masābih*, *hadīth* no. 3091).
- <sup>100</sup> *Caring for the Earth*, 51.
- <sup>101</sup> *World Conservation Strategy*, article 1:7 and executive summary 1a–c.
- <sup>102</sup> Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 6, 10, 23–24, 29.
- <sup>103</sup> Ibn Taymīyah, *Majmū‘ al-Fatāwā*, 11:96–97; Samarrai, “Environmental Protection and Islam,” 37–38; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 5.
- <sup>104</sup> Samarrai, “Environmental Protection and Islam,” 37; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 5–6, 33–34.
- <sup>105</sup> Rigorously authenticated *hadīth* related by Al-Bukhārī and Muslim and others from Abū Hurayrah.
- <sup>106</sup> *Hadīth* of unsubstantiated authenticity, related by the Imām Ahmad from ‘Abd-Allāh ibn Mas‘ūd (See *Majma‘ az-Zawā‘id: kitāb as-sayd wa ‘dh-dhabā‘ih, bāb ma nahā ‘an qatlihī min an-naml...*); Llewellyn, “Islamic Jurisprudence and Environmental Planning,” 35.
- <sup>107</sup> Rigorously authenticated *ahādīth* related by Al-Bukhārī and Muslim from ‘Abd-Allāh and Al-A‘mash (*Sahīh Al-Bukhārī, abwāb al-muhsar wa jazā‘ as-sayd*, etc.; *Sahīh Muslim, kitāb as-salām, hadīth* nos. 5553, 5554, 5556).
- <sup>108</sup> The Qur’an, *Sūrat an-Nisā’, āyah* 119.

---

<sup>109</sup> Seyyed Hossein Nasr, personal communication (at the conference on Islam and ecology, Harvard University), with reference to the Qur'an, *Sūrat al-Baqarah*, āyah 219.

<sup>110</sup> Rigorously authenticated *hadīth* related by Muslim and Abū Dāwūd from Shaddād ibn Aws. The Imām Ahmad and Al-Bayhaqī related a rigorously authenticated report from 'Ubayd ibn Ziyād / Ziyādah, who asked the sons of Busr As-Sulamī whether they knew of any ruling from the Prophet about beating one's riding animal with a quirt and controlling it roughly with the bridle. A woman answered from within the house, "O questioner, God has declared, 'There is no animal on the earth, nor any bird that wings its flight, but is an *ummah* (community, society, people) like yourselves' " (Qur'an, 6:38). They told him that she was their older sister, who had known the Prophet. Also see 'Izz ad-Dīn ibn 'Abd as-Salām, *Qawā'id al-Ahkām fī Masālih al-Anām: al-qism ath-thālith min aqsām ad-darb ath-thānī min jalb al-masālih wa dar' al-mafāsīd*.

<sup>111</sup> Llewellyn, unpublished letter.

<sup>112</sup> 'Izz ad-Dīn ibn 'Abd as-Salām, *Qawā'id al-Ahkām fī Masālih al-Anām: al-qism ath-thālith min aqsām ad-darb ath-thānī min jalb al-masālih wa dar' al-mafāsīd*; Llewellyn, "Desert Reclamation and Islamic Law," 12; Othman A. Llewellyn, rejoinder in *Journal of Research in Islamic Economics* (Jeddah) 3, no. 1 (1985): 90; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 11, 35.

<sup>113</sup> 'Izz ad-Dīn ibn 'Abd as-Salām, *Qawā'id al-Ahkām fī Masālih al-Anām: al-qism ath-thālith min aqsām ad-darb ath-thānī min jalb al-masālih wa dar' al-mafāsīd*.

<sup>114</sup> Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 23; Ibn Qudāmah, *Al-Mughnī: kitāb an-nafaqah: fasl wa man malaka bahīmah...*

<sup>115</sup> Ibn Qudāmah, *Al-Mughnī: kitāb an-nafaqah: fasl wa man malaka bahīmah...*

<sup>116</sup> Christopher D. Stone, *Should Trees Have Standing? Toward Legal Rights for Natural Objects* (New York: Avon Books, 1975).

<sup>117</sup> Ibn Nujaym, *Al-Ashbāh wa 'n-Nazā'ir: al-fawā'id: kitāb as-sayd wa 'dh-dhabā'ih wa 'l-udhūyah*. Moreover, the prophet Muhammad, upon him be peace and the blessing of God, cursed whoever takes a living thing as a target (rigorously authenticated *hadīth* related by Al-Bukhārī and Muslim from 'Abd-Allāh ibn 'Umar), and warned that, "if anyone kills a sparrow, it will cry out on the Day of Resurrection, 'O Lord, this one killed me wantonly – neither did he benefit from my killing, nor did he leave me free to live in Your earth!'" (*hadīth* related by At-Tabarānī in *Al-Mu'jam al-Kabīr*, from 'Umar ibn Yazīd. See *Majma' az-Zawā'id: kitāb as-sayd wa 'dh-dhabā'ih, bāb fīman qatala hayawānan bi-ghayri manfa'ah*).

<sup>118</sup> Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 11, 31.

<sup>119</sup> *Hadīth* of unsubstantiated authenticity, related by At-Tirmidhī from Hudhayfah (*Mishkāt al-Masābīh*, *hadīth* no. 5129); a rigorously authenticated *isnād* goes back to 'Abd-Allāh ibn Mas'ūd (*mawqūf*).

<sup>120</sup> Ibn Qudāmah, *Al-Mughnī: kitāb al-jihād: mas'alah: qāla wa lā yughriq an-nahl*; Bagader et al. with Llewellyn, *Environmental Protection in Islam*, 11; Samarraī, "Environmental Protection and Islam," 39. In the Qur'anic verse quoted, the words *al-harth wa 'n-nasl* might be understood to cover not only tilth and herds, but flora and fauna in general.