

Science- Policy Interface: Integrated Socio-technical Assessment Framework to Achieve Interdisciplinarity

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Abstract:

The concept of Integrated Water Resources Management (IWRM) was envisaged by the International Water Resources Association nearly 4 decades ago to deal with increasing water resources problems including water scarcity. Now, IWRM constitutes an emerging global norm. In recent years, there has been a great deal of interest in how to implement IWRM and in why it has not been implemented since its introduction. Many research works have shown that lack of implementation of concepts such as IWRM has been attributed to the gap between technical outcomes and policy decisions. It is argued that no single discipline can adequately deal with the multifaceted problem of land and water resources planning and management. Hence, land and water resources planning, allocation and management can be considered as an interdisciplinary endeavour. In the past, many multidisciplinary teams have failed to produce integrative synthesis because the members used to carry out their analyses separately based on the perspective of their individual disciplines. Thus, the final output was a series of reports pasted together, without any integrating synthesis. Therefore, an integrative interdisciplinary approach cannot be achieved by amassing different brains; educational capacity development is needed to build a shared vision. Hence, it is argued that we need to embrace interdisciplinarity to synchronise research in the interface of both social and physical sciences. An interface is defined as the points of interaction, interplay and linkage between technical and social (institutional) analytical components. Therefore, this paper presents an integrated socio-technical and institutional assessment framework for implementing the IWRM paradigm. To achieve an integrated synthesis for an interdisciplinary study, the integrated methodological framework has used four analytical components based on the IWRM concept: (1) Driver-Pressure-State-Impact Response (DPSIR); (2) Institutional Analysis and Development (IAD); (3) Integrated Socio-technical Assessment (ISTA) using modelling and Multi criteria Decision-Making (MCDM) tools; and (4) Ethics to assess decision outcomes in multitier Multi-Stakeholder Platforms (MSPs). It is argued that the modern day water and land governance has to take into account the ethical and cultural aspects of the community to form an alliance for sustainable resource use. The overall integrated methodological approach provides an innovative analytical framework to understand the discursive deliberations in a complex Social-Ecological system heightened by (i) scientific uncertainty over climate variability and change and; (ii) dynamic institutional transformation and evolution.

Best Practices for Ecosystem Restoration and Rehabilitation in Drylands: a Case Study from the Arabian Peninsula

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The Arabian Peninsula, which comprises the seven countries of Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, the United Arab Emirates (UAE) and Yemen, are all drylands. The region experiences some of the most extreme climatic conditions and is characterized by low, erratic rainfall, high evaporation rates and amongst the highest temperature variations/extremes on Earth. Added to this are high levels of soil and water salinity.

Rangelands represent about 50% of the land area of the Arabian Peninsula, unfortunately these rangelands and their native plant biodiversity, which comprises over 3500 plant species are being rapidly depleted.

The paper discusses briefly the two major processes of degradation, namely vegetation and land degradation. The latter, at least in arid areas, like the Arabian Peninsula, is a direct cause of the vegetation degradation. The primary cause of this vegetation loss is overgrazing.

In the region, over the last 30 years, many land restoration and rehabilitation projects were developed primarily to protect and conserve its important plant biodiversity. A few of these projects are discussed briefly and the overriding reasons for their success or failure are listed.

To illustrate further, and in greater detail, the factors that lead to failures and those that provide success to a sustainable land restoration and rehabilitation project, a case study from Kuwait is presented.

In conclusion, some ideas for future research and development projects in the Arabian Peninsula are discussed.

Misali Marine HIMA - Using Islamic Ethics to Promote Marine Conservation in Zanzibar

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Abstract

Misali Island is a small (one-hectare) coral islet located off the west coast of Pemba Island, the northern of two main islands that make up the Zanzibar archipelago, off of Tanzania. During the ninety's, a foreign investor wanted to establish a tourist resort in Misali but the local community successfully fought this off because in addition to its benefit as a food source Misali had religious connotations for local people. With the support of the Tanzanian government, CARE Tanzania and the UK based Islamic Foundation for Ecology and Environmental Sciences (IFEES) a conservation programme incorporating Islamic ethics was launched. This programme was developed to work with mosque Imams to bring out the strong environmental teachings of Islam in support of fisheries co-management. With the encouragement of IFEES, Misali was designated a marine HIMA, the first of its kind, but sustaining this idea became problematic due to many local and political challenges, which we shall discuss.

Kuwait Integrated Environmental Information Network: Way of Developing National Environmental Indicators for Better Environmental Information Dissemination

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Abstract

Kuwait integrated environmental information network KIEIN project has been initiated in 1994 with the main focus of developing an interactive and dynamic environmental information platform. The success stories of this project maintained the momentum to reach its final stage for developing the national environmental indicators for Kuwait, which will be embedded in a web service interface. Such environmental indicators are very valuable for public society as well as scientists, researchers, practitioners and experts in Kuwait. Such indicators will also offer to decision makers, policy makers and planners valuable lists of environmental information for the sustainable development planning process. The key issue behind this project is the dissemination of these indicators and information among the society to maximize the societal benefits. Such dissemination will foster the synergy and integration between the scientists, researchers, planners and decision makers in different organizations to obtain utmost benefit from these indicators.

Seven main thematic areas including climate change, atmosphere, land, coastal and marine environment, fresh water, biodiversity and waste management were developed. Based on a schematic hierarchy approach; underneath these themes there are list of the key environmental issues, which are consequently broken down into indicators. More than 32 environmental indicators were listed in the Kuwaiti environment, which are compatible with the Arab League initiative of developing the list of environmental indicators for the Arab countries, Kuwait Environment Public Authority (EPA) and the Regional Organization for the Protection of the Marine Environment (ROPME).

Discussion and synergy with experts in these main environmental themes will improve and enhance our understanding of these indicators and provide more insight on the pressure, impact and response to these indicators. Indeed, this will aid in improving our environment and reduce the hazardous implications of human activities on human health and ecosystem vitality.

Community-Based Rangeland Rehabilitation: A Hima like Project in Tell Ar-Rumman, a Mediterranean Ecosystem in Jordan **Mustafa Al-Shudiefat, Raed Al-Tabini and Khalid Al-Khalidi**

Abstract

Grazing sites throughout Jordan and the entire region have steadily shrunk due to urban sprawl and environmental pressures. The resulting pressure on herders has led to severe overgrazing of the shrinking rangelands. It is well documented in other parts of the world that removing grazing from a landscape, which has traditionally been grazed often has a *negative* impact on species diversity. With this in mind, the Royal Botanic Garden (RBG) of Jordan established the Community-Based Rangeland Rehabilitation (CBRR) programme to work with local herding families and develop efficient and sustainable management strategies.

The overarching goal of the CBRR is to improve local livelihoods through sustainable ecosystem management. This can be achieved through the establishment of suitable environmentally friendly and sustainable income generation programmes according to community needs.

Before the CBRR started, local herders were bringing their herds to graze illegally at the RBG site throughout the entire year, after cutting the fence to gain entrance. When we began our work, we needed to be able to restore plant cover, conduct vegetation surveys and make biomass estimates at the site, without animals continuing to graze there. Faced with local opposition, we came up with a plan to supply **replacement forage** to the livestock owners who had habitually grazed the RBG site, in return for withdrawing their flocks.

The local community was involved in the project from the beginning. Problem definition, possible solutions, alternative grazing scenarios and timing of the grazing activities were discussed in public meetings with livestock owners and community leaders.

The CBRR initiative was well received. Livestock owners who once grazed the site down to bare earth are now policing themselves and others to protect the benefits they are reaping from the CBRR and the rapidly reviving ecosystem. Thirty-eight families are currently part of the CBRR project, as well as about 5000 head of sheep and goats. The herders are benefiting from better herd management and health, managed grazing, and the income-generating project in the Tell Ar-Rumman area. The biomass at the protected site increased from 50 tons to over 100 tons, and plant surveys have shown an increase from 400 to 550 species.

The CBRR will replicate this model in other locations, and is developing sustainable grazing protocols that can be used to improve the quality of rangeland habitats and the livelihoods of pastoralists throughout the region. The participatory approach and positive socioeconomic effect on the local community should be part of all ecosystem restoration efforts.

HIMA Mesopotamia: a Holistic Perspective on Stewardship of the Tigris Euphrates Watershed

Dr. Michelle Stevens

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Abstract

HIMA Mesopotamia means protection of the land between two rivers, and provides an ancient land stewardship system for common pool resources. Water resources are the lifeblood of this arid landscape. The biodiversity and cultural integrity of the Tigris- Euphrates River Basin is jeopardized by water scarcity, inequitable allocation of water rights, and high risk of desertification. Dams and upstream diversions in Turkey, Syria and Iran have reduced mean annual flows in the watersheds, resulting in water scarcity and impaired water quality in the Tigris-Euphrates watershed. Marsh areal estimates vary from a high of 58% in 2004-2005 down to 10-20% today. These decreases in flow are a direct result of upstream dams and diversions, and limit the possible solutions for the Mesopotamian Marshes. Terrestrial and aquatic biodiversity is declining from lack of available sweet water. The Mesopotamian Marshes are a culturalized landscape, consisting of a reciprocal relationship formed over thousands of years between Marsh Arab cultures and the marshes through both agriculture and traditional resource management. The Ma'dan are now becoming environmental refugees without land tenure, attempting to eke out an existence with their water buffalo (cultural indicators of marsh health). Further, lack of water necessitates implementation of strong socioeconomic measures, including attention to agricultural production and human health. Along with changes to water levels, there are changes in ecosystem-level metrics: salinity has increased and fish populations, reed availability, and water buffalo forage resources have declined. Loss of fisheries alone will have adverse impacts on socio-economics and human well being in the entire Gulf region. One of the most challenging aspects of the development of this area will be ensuring the delicate balance between improving the standard of life locally, and respecting the traditional way of life of the inhabitants of the Marshlands. An international effort to develop a system of basin planning and equitable water rights allocation is urgently needed. In an era of increasingly limited water resources and increased demands on limited water, will the marshes survive? Several innovative solutions are presented to promote the survival of the Tigris Euphrates environmental integrity and biodiversity, to sustain human well-being and socioeconomic stability, and to preserve this world heritage site.

Keywords:

Tigris Euphrates River watershed, HIMA, Mesopotamian marshes, Eco-cultural restoration, Biodiversity

Experience of ICARDA on the Use of HIMA System and Rangeland Ecosystems Protection in the MENA Region

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Abstract

Rangelands in the MENA region, mainly Arab one, are declining in both condition and productivity. Many species are becoming rare and many have disappeared or are on the brink of extinction. With the policy of settlement and the coming of oil wealth and political stability, facilities have become available for breeding more livestock in rangelands and the grazing pressure on desert rangeland has increased steadily. Traditional grazing system (hema system) which had historically allowed for grazing deferment and control of grazing livestock were abandoned. Almost all rangelands in Qatar are now grazed continuously without any restriction on stocking rate.

Fully protected areas are widely considered to be the best and the easiest way to conserve plant diversity and maintain ecosystem composition and structure. To evaluate the reintroduction and adaptation of known practice (Hema system) under new management and arrangement, studies were carried out in three different sites of the MENA region, Syrian Badia, Southern Tunisia and Qatar. In each site, we sampled two areas with two different levels of grazing: protected area (enclosure), where the protection level is high, and an open area (outside the enclosure) where human populations have unrestricted access to ecosystem resources. Total plant cover, density, perennial species cover and their contribution were determined inside and outside the protected (rest) area.

The results showed considerable and positive effects of protection on the scored parameters. However the results emphasized, on the other side, a negative effect of the long term protection on vegetation dynamics. This was observed by the abundance of a very competitive annual species (*Stipa capensis*) and the occurrence of crusts on the soil surface (which may constitute an obstacle to water infiltration and seeds germination) inside Al Musawar. A light grazing is an efficient tool to reactivate the ecosystem functioning. Short term protection followed by good management seems to be more sustainable than long term protection of some degraded rangelands in Qatar.

An Ethical Legal Framework Towards Good Governance: A Community-based (Hima) Approach

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Keynote paper

Abstract:

This paper attempts to bridge the gap between tradition and modern day governance of land and water resources. It uses the concept of *Hima* to develop an Ethical legal framework. *Hima*; which literary means "Protected Area" in Arabic; can be defined as a Community Based Natural Resources (Land and Water) Management (CBNRM) System based on community ethics, which are predominately Islamic. In governance terms, *Hima*, which has to be institutionalised by a legitimate authority, is a common property that provides rights and benefits with no exclusive rights and is based on equal

access to natural resources for sustainable livelihood. Also, *Hima* can be used as a conservation zone and use rights can be prohibited or restricted if needed. Thus, as a usufruct system of property, the *Hima* institution had a broad legal mandate to promote beneficial use of the 'protected zone'. To develop an ethical legal framework, the Islamic version of human development or *Maqasid* model, which was envisaged by the great Sufi and reformist scholar, *Imam Ghazali* (d. 505 AH/1111 AD) has been used to link and interface the Islamic vision with modern day good governance principles. The *Maqasid* Model provides a starting point for introducing social and economic justice and environmental integrity. The Islamic environmental ethics governed and guided by the *Maqasid* model are compatible with ecocentric ethics. This will be the guiding principle for the Islamic legal theory (*Usul-al-Fiqh*)-- a tool to describe the journey of translating the principles into strategies and normative rules. The Islamic legal theory needs to be benchmarked with sustainability science to be harmonised and streamlined with modern day principles. Therefore, we need to establish how a belief system (in our case Islam) can be linked to non-religious concepts such as CBNRM. Legal maxims derived from Islamic legal theory are employed to develop the legal framework. Additionally, Islamic legal theory provides a framework to understand the relationship between action-actor as a basis for legitimacy and enforcement of the rule of law. A legitimate rule should satisfy criteria of no hardship, ability to understand and capacity to perform according to the rule. Legitimacy is then a measure of the successful implementation of the CBNRM management plans. This means that Islamic *Fiqh* should not be only about law making but it should take wider societal dimensions into consideration. There are two important issues in contemporary CBNRM that have to be well defined: property rights and right of use. The proposed legal framework deals specifically with these issues by recognising a mixture of public-private water rights and use rights. The proposed legal framework will foster collective choice arrangements and can provide robust environmental ethics. Contradictory to some popular belief, the hallmark of the Islamic legislative process has been its human dimension. *Hima* Governance seems to have a wide application in sustainable resource use based on demand management and conservation of natural resources in the West Asia and North Africa (WANA) region and beyond. However, this theoretical treatise should be tested in case studies and the scope of the research can be widened by considering other belief systems as all religions have similar value-laden principles.

Implementation of the Traditional HIMA Process at the Regional and Global Levels

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Abstract

At the sub regional level of the Maghreb, Machrek and South East Asian countries, the process will be based on the Islamic principles that emerged in the context of extreme water scarcity and hence, water is a central theme in the Quran, in religious practice, in Islamic Law- Shariah and in the society at large. "*Hima*" is one of the practical manifestations of Islamic law and principles along with other resource management institutions like the "*Haram*", the "*Waqf*" and others. The process should revive the *Hima* meaning of a "protected place", an area used for public welfare and protected "for the benefit of all creatures". Originally defined by the distance the owner's dog's bark could be heard, they became community-owned grassland, woodland, wetland and beekeeping reserves that supported the natural resources crucial to everybody's survival.

For the methodology implementation we have the experiences of the 'Hima' approach that has been revived and currently being applied in Lebanon and beyond, with the Society of Protection of Nature in Lebanon (SPNL) leading the process. The dissemination in the sub region will be based on the wise use of traditional practices with recent conservation science in order to achieve sustainable development. Through selecting Important Bird Areas (IBA) and with the support of BirdLife, "*Hima*" has been applied to six IBA's in Lebanon and is in the process of being applied also in Jordan, Qatar and extended to the Sultanate of Oman and Lebanon.

Under the guidance of the Ramsar Convention and especially the Ramsar Culture Working Group, MedWet stands firm on the principle that efficient management of wetlands and water resources should take into account the local religious context in order to promote the preservation of wetlands through spirituality and other cultural aspects, something the success of the *Hima* approach epitomises. Equally important for MedWet and to ensure the success of using local traditions, is another main principle namely the **Dialogue Approach** using public participation in conservation through the use of dialogue facilitation and multi-stakeholder communication.

At the global level, the concept and example of "*Hima*" should be used to feed a global movement towards achieving conservation through **taking into consideration local traditions and cultural values**, respecting local communities and making wise use of the shared responsibilities. Of course, as much as this should become a global concern, its successful implementation must remain specifically tailored to the social, cultural and economic aspects of the area it is addressed in and promotes effective public participation as a means of involving local communities.

Managing Flash Floods in the Terrestrial Protected Areas in Kuwait (the Case of Sabah Al Ahmad Natural Reserve)

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Abstract

Sabah Al Ahmad Natural Reserve (about 331 km²) is located at the northeastern part of Kuwait. The ground elevation of the reserve ranges between zero (at the coastal strip) to about 120m above sea level (at its western and southwestern portions). In the last ten years the reserve was subjected to flash floods of different intensities. In April 2009, segments of the outer fence of the reserve and parts of the main Sabiyah Road were damaged by runoff water. Huge amounts of soil were lost during the floods. Jal Az Zour Hilly Terrain represents the main watershed in Sabah Al Ahmad Natural Reserve. This watershed is influenced by a remarkable water divide running in an east-west direction. The concerned watershed is dissected by two drainage systems (coastal and inland). In Kuwait, flash floods occur during heavy rainstorms with rainfall amounting 30-40mm in one storm lasting 4-6 hours. Parts of Kuwait were subjected to flash floods during 27th December 1934, 30th November 1954, 2nd February 1993 (40mm within 6-8 hours), 11th November 1997 (105 mm within 3-4 hours), January 2004, January 2007, April 2008 and December 2009.

The main objective of the present study is to discuss an action plan for managing flash floods in Sabah Al Ahmad Natural Reserve. To realize the objective of this study, detailed field investigations, analyses of surface hydrological, topographic and meteorological data were carried out. The drainage basins were delineated using ARC GIS 9.3. and 2011 satellite images. Emphases will be given to economically feasible and environmentally friendly measures for managing flash floods and soil erosion.

Keywords:

Watershed, drainage basins, action plan & environmentally friendly measures.

The Presence of HIMA Concepts in Aflaj System in the Sultanate of Oman

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Abstract

Falaj (pl. Aflaj) is a channel constructed above or below the ground surface extending from the water source to the irrigated lands including water management and falaj administration. The falaj has played the key role in the creation and maintenance of the villages in Oman. In addition, it plays significant roles in the cultural and social fabric in the falaj community. Since the falaj is essential for life, everyone played a range of different roles to maintain it in good working order. This paper describes the presence of HIMA concepts in the aflaj system in Oman with emphasis on the Community Based Natural Resources Management (CBNRM) system.

Critical Review of the Algerian Experience to Manage Land Degradation

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Abstract

The Algerian arid High Plateau, a key area with pastoral activity, covers 27 million hectares. This steppe has undergone significant degradation during the eighties. The combination of a severe drought, the most important of the century, which showed a high peak between 1982 and 1987, and an exponential increase in livestock had a catastrophic impact on pastoral resources. Vegetation cover, which was generally greater than 30% before 1980, is now less than 15%. Phytomass, which exceeded 1t/ha/an in 1980, is now less than 450 kg / ha / year.

This desertification has in turn greatly undermined the fodder potential of the steppe. The fodder production, which earlier exceeded an average of 150 Uf. Ha⁻¹ .year⁻¹, can currently provide only 30-40 Uf. Ha⁻¹ .year⁻¹.

In response to this deterioration, the Algerian government, during the seventies, defined a strategy to manage and restore the ecosystems. It had several "technical" solutions to combat this deterioration. Three approaches were proposed. The first approach was to increase pastoral and agricultural production. The second was to reduce the livestock.

And the third was to combine the two. Finally, only the first approach was chosen. Several options were considered. The main ones being: planting, collecting water for livestock and agriculture and finally installing exclosures. Agro-forestry plantations were performed on 217,549 ha with different species, particularly the genus *Atriplex* and *Medicago*, *Opuntia*. Small hydraulic entities were also built that irrigated 410,000 ha and as a result there was an increase in the cultivated area. Exclosures were established on 3 million hectares.

We will discuss the relevance and success rate of these works from a holistic perspective. The economical and biological impacts (biodiversity, production) will also be assessed. The result is that the government's strategy is unclear, and sometimes seems to contradict the objectives of combating desertification. Worse still, we will show that in some cases, the Algerian government paradoxically finances the steppe degradation.

UNESCO Biosphere Reserves in the Arab Region and the Application of the Traditional HIMA System for Biodiversity Conservation

Dr. Benno Böer

Abstract

The ancient Arab Hima system is believed to be the, or one of the oldest nature conservation management systems in the world. There are still a number of active Himas in the Arab Region. They seem to be in decline and the traditional ecological knowledge that is associated with Hima, related to key-ecological factors such as rangeland grazing, livestock carrying capacity, drought-management, flora-and-biodiversity, conservation of standing crop, biomass, carbon storage, primary productivity, soil protection, plant-utilization etc. are all rapidly eroding. It is with the concept of sustainable development and nature conservation, as well as with the conservation of traditional ecological knowledge in mind, that UNESCO's three nature conservation concepts, such as the Global Network of Biosphere Reserves, Natural World Heritage Sites, and Global Geoparks, can be highly suitable places for the conservation and promotion of Hima systems and the associated traditional ecological knowledge. The paper invites the land-owners, concerned families, environment authorities and people in the Arabian Peninsula to study the opportunities that UNESCO sites can offer for their existing Himas, the re-invigoration of former Himas, biodiversity conservation and the conservation of tangible and intangible heritage.

“Bridging the Gap Between Traditional Hima System and Global Hima Initiative”

Dr. Fadlun Khalid

Abstract

My paper will deal with Hima as a universal idea practiced by most traditional societies and which has been debased and corrupted by the development oriented economic model, which puts huge pressures on local resources. There may be differences in emphasis depending on local conditions, for example, geography, climate, culture etc. but the basic idea is one of conservation of a specified land area for the benefit of the community. The Hima system that emerges from the Islamic ethos lends itself to considerable flexibility and adaptability and it could therefore lend itself to universal application as a potential answer to some of the conservation issues we are confronted with today.

Conserving Biodiversity and Sustainably Managing Land Through Indigenous and Community Conserved Areas

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Abstract

The HIMA approach to strengthening natural resource management is a powerful tool for both conservation and for sustainable development. Its greatest value lies not in its ability to exclude people from conservation areas, but in its ability to integrate food production with conservation goals. Protected Areas often exclude local users and thereby miss out on important opportunities for tapping into their local knowledge and the institutions that enable its use. The HIMA approach legitimises Indigenous and Community Conserved Areas (ICCAs) as a way to achieve both sustainable land management and biodiversity conservation on land that is used primarily for food production. Healthy, productive rangelands offer a genuine win-win of agricultural production (through livestock) and biodiversity conservation. The HIMA model provides the key to unlock this potential by improving landscape connectivity and harnessing the role of (domestic) herbivores more effectively for ecosystem management.

Evidence for the Effectiveness of Faith-Based Land and Water Management as a Tool for Conservation

Dr. Nigel Dudley

Abstract

Leaders of all the world's major faiths recognise the need for humans to play a positive stewardship role in management of the environment, with responsibility towards the rest of biodiversity. Faiths can support biodiversity conservation by the way in which they manage land and water under their control and through their wider influence on the attitudes and practices of their followers. Most faith groups already demonstrate examples of long-term ecological stewardship, either through protection of natural areas considered to be of particular importance to the faith (often known as “sacred natural sites”) or by promoting responsible stewardship (such as the *Hima* still found in some parts of the Middle East). The conservation value of such areas was assessed by compiling over 100 examples from peer-reviewed literature of research and monitoring in sacred sites in Africa and Asia. Results were compared and some general conclusions about the conservation value of faith-based land and water management were drawn.

The Agdal Community Based Management of Morocco and Environmental Conservation

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Abstract

The pastoral areas of the Moroccan High Atlas Mountains are considered to be hotspots of endemism but are presently undergoing significant degradation. Unorganized extraction by local pastoralists is often suggested as a main cause of this. However, a team of Anthropologists and Ecologists attempts to demonstrate, that the *Agdals* of the High Atlas could encourage the opposite. The Amazigh or Berber *agdal*, similarly to the better studied Arabian *Himas*, is a traditional community-based organization for the management of natural resources, which in this case, is found throughout the Maghreb. In the highland area of the Mesioua tribal group, where this study took place (High Atlas of Marrakech), the *agdal* specifically involves prohibitions on accessing various botanical resources, based on a very keen ecological knowledge of the territory and forged through centuries of essay and error procedures. This prohibition is imposed by a tribal assembly, generally during the most critical periods of growth and/or reproduction of vegetation and its main objective is to maintain the sustainable use of different plants. In doing so, local populations also favour a certain biodiversity and the continuity of their own society and tradition. In this presentation the focus will be put a high mountain pasture.

Keywords

Ethnohistory · Pastoralism · Environmental conservation · Commons · Amazigh · Morocco

Synergized Conservation Effort Through the Spirit of Hima and Islamic Culture in Indonesia

By Fachruddin Mangunjaya and Harfiah Haleem

Abstract

In this paper the author elaborates on the Indonesian experience in facing conservation challenges. Many designated conservation areas, particularly in Indonesia, have been challenged by conflicts due to lack of understanding and awareness among the local community of the importance of the conservation area. The confrontation also arises from the top-down structure of the decision-making process for these areas as well as the remains of the relevant indigenous cultures and wisdom that may support practices that go back hundreds of years, long before modern notions of conservation. There are individuals now trying to facilitate people's participation in forest protection by invoking local values, wisdom and cultures. They argue that the practice of conservation areas is similar to that of the Islamic Hima. Two areas are used here as case studies: West Sumatra and Aceh Province, which are predominantly Muslim and have absorbed Islamic principles into their traditional conservation practices. Although the term Hima was not recognized in this area, the best practice of the Hima and Harim zones seems to have persisted.

Keywords:

Conservation, awareness, indigenous culture, Hima, Sumatra, Indonesia

Hima as a Model for Sustainable Development: Implications and Reforms

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Abstract:

This paper aims to develop a conceptual framework for sustainable development by presenting *Hima* as a model for people-centered development. The model is inspired by Islamic values as the guiding principles for defining the relationship between man and ecosystems. Sustainability pertains to a balanced interaction between a population and the carrying capacity of an environment such that the population develops to express its full potential without adversely and irreversibly affecting the carrying capacity of the environment as the natural capital.

Hima as a social contract and institution is rooted and informed by tradition and by rational imperatives. The establishment and maintenance of the *Hima* is underpinned by the ethical social order, which is dependent upon rational social choices and collective action. Specifically, the *Hima* is based on the notions of equity, social justice (*adl*), public participation (*shura*), public interest (*maslaha*) and the deep concern for future generations. The role of the local community (*Ummah*) as a community of practice is to set standards for ethical codes of conduct and also to create new knowledge based on attaining public good and public interest. Hence, *Hima* is a good example of value-based, community-based natural resource management.

Deep within the local Arab culture, the notion of sustainability and resilience are key elements for survival in a scarce natural environment. These natural protected areas '*Himas*' were managed by sound local governance that is founded on a culture of co-existence, integrity, trust, care and respect for nature and life. Islamic law has devised and formalized specific rules for formulating public policies and making trade-offs between public and private interest (*maqased*) and in assessing costs or injury (*darar*). The notion of *maslaha* (public interest) may lead to an understanding of sustainability in its broader terms. The *Hima* system operationalized a social contract, which prohibits ecological degradation (*fasad*) and human and social alienation.

The paper recommends to promote and to formalize the development of *Hima* as a model for sustainable development. This model includes: building consensus and sense of ownership with the stakeholders, dealing with the natural system as one integral unit including socio-economic, ecological and governance, ensuring process for feedback and social learning.

Overview of Implementing Hima System: Case Studies from the Arabian Peninsula and Middle East

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Abstract

The Hima system is a historical resource conservation concept that is deeply rooted in the Islamic religion and goes back to more than 1400 years ago. With the onset of Islam, Prophet Mohammed (PBUH) laid down the tribal rules and transformed the Hima into a system that protects public welfare and set the stage for a system for conservation. It is generally defined as a "reserved pasture/rangelands where grazing lands and tress are protected from indiscriminate harvest on temporary or permanent basis". The traditional management of the system considered both land conservation and the needs of the local communities.

In the Arabian Peninsula and the Red Sea, 'Hima' has been established and practiced for centuries. Local inhabitants around the Hima have successfully established environmental planning and management strategies, which balanced the natural resource uses according to Islamic laws and the tribal self-government. Various forms of Hima were established, which are summarized as follows: 'grazing reserves' for restricted use by tribal communities; protected pasture lands to avoid over exploitation by nomadic herders; allowing grazing year-round with specific kinds and number of livestock (appropriate carrying capacity); prohibiting grazing at reserves for bee-keeping; reserving a woodland to stop desertification of an area or sand-dune encroachment; and tourism sites after restoration.

The control of land use in a tribal society was brought through consensus rather than prescribed by legislative or institutional control. Such consensus brought political control and influence, which was wisely used to bring-in sound ecological practices to the management of natural resources in tribal land. For the past three decades more renewed interest has emerged within researches, planners and decision-makers regarding adaptation of the Hima system with planning of terrestrial resource management receiving high priority. Many countries in the region have also established their own environmental government agencies to set aside and manage such reserves. However, it must be emphasized here that a 'business as usual' approach to management of a Hima may no longer stand the test of time. It must be modified taking into consideration the new generations of tribes, modern methods of control (new forms of authorities) and future aspirations of local inhabitants.

This paper will bring into focus these issues within the context of case studies from the region. These are based on published and unpublished studies from the countries of Saudi Arabia, Syria, Yemen, Jordan and Lebanon.

A Process to Establish Traditional Himas as Community Conserved Areas: Essential Skills

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Abstract

As an outstanding conservation practice indigenous to the Arabian Peninsula and neighboring regions, traditional *Himas* merit legal recognition as community conserved areas (CCAs); without such legal recognition, they are in danger of vanishing within a generation. An effective and equitable process for proclamation of traditional *Himas* as CCAs requires a rapid survey of *Himas* that remain intact or nearly so, with sound criteria to identify those most suitable as pilot sites for proclamation. It then requires setting up equitable representative governance and management structures with agreed procedures for decision-making and resolution of disputes. Equitable governance requires that all constituencies of local communities be enabled to participate in the conservation of these areas, and this, in turn, will require capacity building to enhance their skills and competencies. Crucial skills for gathering information, assessment, monitoring, and evaluation include rapid rural appraisal, participatory rural appraisal, and stakeholder analysis; essential skills for conflict resolution include facilitation, principled negotiation and community mediation.

Keywords:

Hima, traditional conservation practices, community conserved areas, protected areas, biodiversity conservation, sustainable use, participatory management, governance, capacity building, rapid rural appraisal, participatory rural appraisal, stakeholder analysis, conflict resolution, facilitation, principled negotiation, community mediation.

Imperatives for Revival of the Hima

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Abstract

The Hima Revival workshop held in Lebanon in 2007 identified a number of broad requirements to be met for the successful revival of a *Hima*. The most essential of these requirements are here examined.

“Working toward a vision of the *Hima*” entails articulating guiding principles that are flexible, yet rooted in authenticity, and based in overarching ethical principles of governance. The vision should aim at the common good (of human societies, and of living beings), link biodiversity conservation with sustainable use and emphasize the role of local communities in governance with equitable sharing of benefits at the local level.

“Improving understanding of the *Hima* and other traditional conservation practices” will entail multidisciplinary field research and literature review to assess the ecological, social and economic role of historical and existing *Himas*, their geographical variations and evolution over time, how benefits have been allocated, users made accountable, and disputes and conflicts resolved.

“Strengthening the legal and policy framework” is needed to enable existing *Himas* that are viable to gain legal recognition, to enable *Himas* that are not functioning well to be revived, and to establish new *Himas*. It should avert potential inequities and develop procedures to address them, and enable the *Hima* to adapt to meet changing needs.

“Improving implementation of *Hima* revival projects” is needed to build the capacity of all constituencies of local communities to participate in conservation and to introduce effective assessment, monitoring, and evaluation methods as well as equitable procedures for resolution of disputes and conflicts.

Keywords:

Hima, *Hima* revival, traditional conservation practices, protected areas, biodiversity conservation, sustainable use, participatory management, local communities, governance, sharing of benefits, allocation of benefits, accountability, capacity building, conflict resolution.