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Developing adaptive capacity for responding to environmental change in the Arab Gulf States: Uncertainties to linking ecosystem conservation, sustainable development and society in authoritarian rentier economies

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ABSTRACT

The recent assessment by the Intergovernmental Panel on Climate Change (IPCC) has emphasized that understanding the institutional context in which policies are made and implemented is critical to define sustainable development paths from a climate change perspective. Nevertheless, while the importance of social, political and cultural factors is getting more recognition in some parts of the world, little is known about the human dimensions or the contexts in which they operate in the affluent oil economies of the Arabian Peninsula. Policies that implicitly subsidize or support a wasteful and environmentally destructive use of resources are still pervasive, while noteworthy environmental improvements still face formidable political and institutional constraints to the adaptation of the necessary far reaching and multisectoral approach. The principal aim of this paper is to identify some of the major shortcomings within the special context of the Arab Gulf states' socio-cultural environment in support of appropriate development pathways. Conclusions highlight that past and current policy recommendations for mitigating environmental threats are likely to be ineffective. This is because they are based on the unverified assumption that Western-derived standards of conduct, specifically the normative concept of "good governance" and "democracy", will be adopted in non-Western politico-cultural contexts.

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1. Introduction

Global Environmental Change, of which desertification is only one key vulnerability (Schellnhuber, 2006), will not only alter living conditions for future generations, but present a serious threat to human well being as well as to social justice, and therefore remain a crucial contemporary policy issue. While a set of biophysical transformations, driven both by human activities and natural processes, affects the quality of human life on a worldwide scale, the socioeconomic and environmental consequences of progressive resource degradation in the Gulf Cooperation Council (GCC) member states¹ are profound. Predictions for the region's outlook show that the vulnerability to further desertification will be enhanced due to the indicated increase in the incidence of severe drought globally (UNEP, 2006; Burke et al., 2006) and that novel 21st century climates are

projected for the eastern Arabian Peninsula (Williams et al., 2007). Furthermore, the region will be confronted with severe water shortages as global temperatures rise (Al Kolibi, 2002). The Millennium Ecosystem Assessment (MEA) on the human consequences of dryland ecologies shows that they are due at least as much to the social systems that produce vulnerability as to environmental changes themselves (Millennium Ecosystem Assessment, 2005). Generally it has been demonstrated that anthropogenic causes of ecosystem change, such as overexploitation of natural resources, are determined by population growth, demographic shifts, economic and technological development, cultural forces, values and beliefs, institutions and governance structures as well as the interactions among all these underlying driving factors (Nelson, et al., 2006). A more integrated understanding of the complex interactions of human societies and ecosystems is therefore essential if we are to identify vulnerable systems, pursue options that take advantage of opportunities and enhance adaptive capacities (Folke et al., 2005; Young et al., 2006). Understanding these mechanisms and conditions, including both past and possible future evolution, is a prerequisite for developing successful mitigation as well as viable adaptation policies that will reach their stated objectives. Yet, experiences from the past have shown that the mere existence of capacity is not itself a guarantee that it will be used. Adaptation will therefore not only depend upon the capacity of systems to adapt, but also on the will or intent to deploy

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¹ The Gulf Cooperation Council (GCC) was established in 1981 with the main objective 'to bring about integration, coordination, and cooperation in economic, social, defence, and political affairs among Arab Gulf states'. Its members include the six Arab states of the Persian Gulf, namely Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates. Oman actually opted for remarkably different and more sustainable development pathways and will thus not be considered in this analysis.

adaptive capacity to reduce vulnerability (Burton et al., 2002; Moser, 2005; Adger et al., 2007).²

National indicators regularly fail to capture various processes and contextual factors that influence the ability to adapt, and thus provide little insight on adaptive capacity at the level where most adaptations will occur (Eriksen and Kelly, 2007). Hence unambiguous determinants of adaptive capacity at the national level represent an area of contested scholarly discourse. Some studies relate adaptive capacity to levels of national development, including political stability, economic wellbeing, human and social capital as well as effective institutional and regulatory frameworks (Stern, 2007). The human dimensions approach presumes that the overall adaptive capacity can be increased by enhancing the ability of both individuals and organizations to withstand and recover from negative climate impacts or shocks to the system (Janssen and Ostrom, 2006; Lemos et al., 2007). Developing adaptive capacity is thus primarily a function of promoting the creation and dissemination of knowledge, the existence of power structures that are responsive and consider the needs of all the involved stakeholders and generating a creative flexibility in decision making and conflict solving (Burton et al., 2006; McGray et al., 2007).

Especially when it comes to the oil monarchies in the Gulf region, little is known about their human dimensions, or the contexts in which they operate. Undeniably gradual environmental governance in some of the GCC states is taking place. However, general consensus has also stressed that the extent of these changes is somewhat limited and perhaps subject to suspension or reversal as a result of potential changes in domestic, regional or international circumstances (Vrolijk, 2003; Launay, 2006; Raouf, 2008). Policies that implicitly subsidize or support a wasteful and environmentally destructive use of resources are still pervasive (Elhadj, 2006), while noteworthy environmental improvements still face formidable political and institutional constraints to the adaptation of the necessary far reaching and multi-sectoral approach (El-Sayed, 2004; Brown et al., 2006).³ The situation is further aggravated by typical institutional weaknesses, such as multiplication, overlap and low level of integration of various state agencies, absence of effective coordination and participatory decision-making processes, lack of collaboration and partnerships, shortsighted budgetary planning, dysfunctional legal frameworks, lack of well-defined national research strategies as well as inadequate institutional capacity building and enabled society (Labaronne and Ben-Abdelkader, 2006; ESCWA, 2006). Despite considerable fiscal resources, sufficient physical infrastructure and a large state apparatus, the region is moreover still characterized by an extremely low monitoring and information-gathering capacity (Van Vierssen, 2005; Butler, 2006; Hoodbhoy, 2007). Procedures often lose momentum when they are transmitted to lower levels of the administration, over which the leadership only has very indirect control (Bertelsmann, 2008). Yet policy, institutional and administrative failures have the effect of reducing the value of environmental resources to society through

wastage, poor pricing and outright lack of means of conservation (Dawoud, 2005).

Most international organizations recognize that the political and socioeconomic framework conditions largely determine the degradation of natural resources and understand that the local socio-cultural context must be considered in finding appropriate policy recommendations. Yet, few efforts have been made to adjust the latter to the practical realities of many countries in the developing world. Policy recommendations for mitigating environmental threats such as desertification are conceptualized around Western-derived standards of conduct. In other words, the normative concept of "good governance" and "democracy", are assumed to be adopted by and applicable in non-Western politico-cultural contexts.

The principal aim of this paper is to identify some of the major political and institutional constraints within the special context of the GCC socio-cultural environment in respect to developing adaptive capacities to the vulnerabilities of climate change. Underscoring a few outstanding peculiarities of this region will be sufficient to show that the prevailing political ideology currently has little chance of sustainable success in the region.

2. Political ideology in conflict with sustainable development

Adaptation and capacity development strategies must be acceptable and realistic within the context of a particular society, so information on cultural and political peculiarities is essential for a comprehensive assessment. Since there is a correlation between gross domestic product (GDP) per capita and certain human development indicators, the assumption that economic growth is an important factor in generating the resources necessary for human well-being and environmental protection prevails. However, selective examples from developing nations show that economic growth alone does not guarantee sustainable human development (Pfaff et al., 2004; Scherr and Gregg, 2006).⁴ While rapid economic development has brought widespread prosperity to the GCC member states, augmentation was achieved at the cost of greater inequity, unemployment, intensive human rights violations and general oppression, lack of education & research, loss of cultural identity and the intense over-consumption of resources needed by future generations. Its unchecked nature has especially introduced a variety of anthropogenic stress factors which have challenged the ecological integrity and sustainability of the burgeoning population in the region (Khan et al., 2002). Despite the fact that four out of the six GCC member states are rated among the 10 most water scarce countries in the world⁵, prolonged overexploitation of fossil water reserves over the past decades threatens the remaining reserves from saltwater intrusion. Continuous water extraction, production, as well as utilization, particularly in the municipal, industrial and highly subsidized agricultural sectors has not only led to severe groundwater depletion in both quantity and quality, but in soil and water salinization, thermal and chemical pollution, loss of habitat and biological diversity, declining productivity, and irreversible ecosystem degradation, such as topical destruction of rangeland vegetation (Abahussain et al., 2002; Amer et al., 2006). Failures of resource management policies are aggravated by overgrazing, over-exploitation of water and land resources and the use of inappropriate technologies. Inadequate irrigation practices, persecution and socioeconomic changes, the latter apparent in the decline of traditional

² At a recent conference entitled "Living with Climate Change: Are there limits to adaptation?" organized by the inter alia Tyndall Centre for Climate Change Research, Susanne Moser approached this issue of the actual barriers to climate change adaptation in her keynote lecture, which is available online along with the other contributions of the event as a podcast under http://www.tyndall.ac.uk/research/programme3/adaptation2008/index_outputs.html In her opinion we must ask "how" to foster and employ the human and social capital necessary to actually and effectively move technical, economic, institutional, and policy levers for adaptation to climate change, not only focus on "what potentially could be done" (Moser, 2008).

³ The 2005 Environmental Sustainability Index (ESI) benchmarks the ability of 146 nations to protect their environment over the next several decades by comparing five fundamental components of sustainability: Environmental Systems; Environmental Stresses; Human Vulnerability to Environmental Stresses; Societal Capacity to Respond to Environmental Challenges; and Global Stewardship. While there was insufficient data for Qatar and Bahrain, Kuwait ranked 138, Saudi Arabia 136 and the UAE 110 (Yale Center for Environmental Law and Policy / Center for International Earth Science Information Network, 2005). Newer reports are available, but unfortunately the indicators changed.

⁴ Consistent with the agreements of the 2002 Johannesburg Summit (that defines environmental protection and social and economic development as fundamental to sustainable development) many developing countries today still face the growing "implementation gap" between governmental commitments and action. Notorious examples, besides the Arab oil economies, include for instance Pakistan, Egypt and Nigeria.

⁵ According to Amer et al. (2006), Kuwait (10 m p/a), the UAE (58 m), Qatar (94 m) and Saudi Arabia (118 m) rank as the first, third, fifth and eighth water deficient countries, respectively.

farming and land-use practices exacerbate this process severely (Weiss et al., 2001; Geist, 2005; Breulmann, et al., 2007). The native plant biodiversity of the Arabian Peninsula is suffering from rapid depletion. According to a study conducted by the Arabian Peninsula Regional Program from the International Center for Agricultural Research in the Dry Areas (ICARDA), over 90% of the total area now suffers from some sort of overgrazing, and 44% is severely or very severely degraded (Erskine, 2004). Al Awadhi described that the average annual loss of productive land due to desertification is predicted to be about 285 km in Kuwait (Al-Awadhi et al., 2003). In Qatar over-exploitation has resulted in increasing salinity levels in ground water, from saltwater intrusion, from 71–1160% (Brook et al., 2006).

Most of the predominant characteristics of the current Gulf Arab reality which pose serious obstacles to human sustainable development and the development of appropriate responses to environmental threats have been adequately discussed in several Arab Human Development Reports (AHDRs). This probing, self-critical look on issues such as the knowledge deficit and the weak institutional structures, engendered a hostile reaction from many in the Arab world⁶ and thus once again highlighted one of the most important shortcomings of the region: a remarkable amount of widespread ignorance as well as misinformation, due to the identified knowledge deficit and therefore disregard for these constraints. Dr. Rima Khalaf Hunaidi, the Regional Director of the Arab States United Nations Development Programme, explicitly warns about this in his forward: “turning a blind eye to the weaknesses and shortfalls of the region, instead of decisively identifying and overcoming them, can only increase its vulnerability and leave it more exposed,” (UNDP, 2003).

When considering the economic outlook of the Gulf countries, high oil revenues, continuous moves towards diversification and the development of capital markets can be identified as major growth factors. Investments in research and environmental technology unfortunately compete against other possibilities that offer more immediate economic or financial returns. A key objective should be to expand the economic base with less dependence on oil revenues and the progressive diversification in industrialization (particularly petrochemical as well as other highly energy intensive industries) as well as the services sector. Moreover the often referred to “Dubai model of diversification” into real estate, trade and tourism is widely emulated in the GCC not only with all its speculation dangers, but especially with its serious consequences in respect to regional resource depletion, progressive environmental degradation and health threats

⁶ Some criticism of the AHDR may however be justified especially because the report is generalizing the term “Arab world”, while covering a broad region within the spatial boundaries and the political frame of the Arab League. The World Bank report on the other hand is referring to the Middle East and North Africa (MENA) region, which in this case includes non Arab states such as Iran and Israel. Generally practical and scholarly assessments investigating the Arab world have often conflated the region with the “Middle East”, “Near East”, “Greater Middle East”, “Arabian Peninsula”, largely overlapping with “Southwest Asia” or “Southwestern Asia”, or “West Asia” as used by the UN subregion geoscheme (e.g., UNDP/ROWA). Even worse is a stereotyped reference to the “Islamic world” or even the “OIC nations” (Islamic and partly Islamic nations) and has therefore created confusion, misconceptions, generalizations and ceaseless debate over what states are included. For instance the Middle East could include several Arab nations while not encompassing others. In addition, the Middle East may even include the non-Arab states of Turkey, Iran and Israel, not to mention the significant ethnic minority populations residing throughout the region such as for instance Assyrians or Kurds. For a comprehensive description of the history, cultures and societies of the Middle East see Hourani et al., 2004., while for the definition and precise assessment of the history and political culture of the “Islamic World” in the twentieth century, revealing what these societies have in common as well as their equally profound differences see for instance Schulze, R., 2002. To make this absurdity more graphic – the comparison is between the top five ranking countries by GDP per capita in terms of purchasing power parity - PPP - and nominal values for the year 2007 (Qatar, Kuwait and UAE) with some of the lowest as in Mauritania, Sudan, Yemen and the West Bank. (The World Bank, 2007) Same could be noticed when looking at the three highest ranking carbon dioxide emissions per capita with again some of the lowest countries.

as well as the global impact on climate change (Walters et al., 2006). A relevant example may be that the United Arab Emirates (UAE) is aiming for 15 million tourists in now one of the most “water-imperiled” nations in the world, accompanied by a number of other environmentally unsustainable projects. This development has resulted in the UAE having already since 2003 the highest ecological footprint per capita in the world (Global Footprint Network, 2006).⁷

The GCC member states are not all uniformly performing irresponsibly when it comes to deliberately ignoring the future threat to their human security caused by this unprecedented environmental destruction, but by highlighting the worst case scenario of the UAE it is easier to demonstrate which pathways should certainly not serve as a model for the rest of the region. The general consensus among researchers on adaptation policies and climate change mitigation is that they can be more effective when consistently embedded within broader strategies designed to make national and regional development paths more sustainable (The Energy and Resources Institute, 2006).

3. The reality of political reform

To be able to give applicable ‘suggestions’ about how best to address some of the main issues mentioned earlier, we need to take a closer look at the actual reality of the political, legal and institutional framework conditions of the region. While the social sciences can offer several basic prerequisites for responses to the challenge of environmental protection, it is exactly these so called socio-political factors that make it more or less likely that reform efforts will succeed. The process of policy development is not a disembodied phenomenon but is nested in an effectively functioning institutional setting. Mapping out those variables can reveal something useful about the prospects for environmental reform in the Gulf and there is little value in continuously ignoring these conditions.

Gulf Cooperation Council (GCC) member states generally score poorly on international indicators of good governance and, despite their high capita income, the region fares much worse when even compared to countries in Africa (Al-Sayyid, 2006). Critical independent research will not only consider the extent to which various political, economic and social aspects of good governance have been successfully applied to date, but will also ask which part of the populace does it actually apply to. All the Gulf monarchies have made some progress in adopting more participatory forms of governance, but this progress is often identified as a result of changes in the international political and strategic environments rather than as a response to domestic demands for democracy. Empirical data not only shows that in view of increased regional stability, to avoid intra-communal conflict or to benefit from globalization little steps towards introducing political reforms, albeit at a varied speed, have been made (Ehteshami, 2003). After the recently discouraging performance of Kuwaiti style democracy, the process of political reform in the region has lost its momentum, since leaders envisage that the adaptation of such reforms will reduce the economic growth and internal security of their respective countries (Berkowitz, 2003; Münch, 2003; Worth, 2008). The shift from de-legitimizing an authoritarian regime towards creating and legitimizing a new political order requires the development of new and different skills for governmental and non-governmental actors on both the domestic and international level. However current tribal and ethnic bickering, lack of unity and social justice, inadequate educational systems and the above mentioned

⁷ Per capita ecological footprint (EF) is a means of comparing consumption and lifestyles, and checking this against nature's ability to provide for this consumption. The UAE footprint per capita showed an ecological deficit of 11 global hectares per capita (gha), while Saudi Arabia's was 3.7 gha, Germany's was 2.8 gha and China's was only 0.9 gha per person. The consumption has increased even further in the UAE since 2003.

near-absence of civil societies characterize the region. While NGOs and civil society at large generally profit from such a shift, this does not necessarily translate into an automatic increase of influence on the course of events. Eventually the primary impetus for political reform in the GCC will be an internal one, when the fiscal crises of the rentier economies coupled with crises of legitimacy will oblige the GCC leadership to address the reality of demographic trends and the distance it places between ruler and the ruled⁸ (International Crisis Group, 2004; Al Zu'abi, 2006). When this will happen, and which trend of reform the elites will choose to follow, nobody really dares to predict and this will certainly keep political scientists guessing for the next decades.

Just as in numerous other developing countries, reform movements in the Arab Gulf will be based on an objective analysis of the aspirations and desires of an influential faction in the ruling family, supported by the merchant middle class and powerful individuals who want to maintain a status quo that serves their interests and enables them to achieve their political and economic goals. However a top-down political reform is, understandably, a prospect with which GCC regimes are much more comfortable than the idea of instantaneous democratization (Neep, 2004). To conclude, the short term expectation for opposition movements, demands for democratic reform as well as governmental accountability is currently unfounded and there is therefore an urgent need for the global community to adapt their recommendations to the given political reality, instead on producing scenarios that will not be feasible in this region in the coming decades.

4. "Rentier society" — a special socio-cultural phenomenon

To understand some of the major constraints to effective responses to environmental threats we need to take a closer look at how these states stand out as "uniquely different" from the rest of the developing world. In conformity with the 'rentier' or distributive state paradigm, the major function of the authorities is the distribution of revenues to society, while the distinction between public service and private interest becomes increasingly blurred. The main characteristic of such a system is the creation of a "rentier mentality" (Moore and Salloukh, 2007; Pool, 2008), which has been well described by political scientist Fareed Zakaria. In his opinion such states generally fail to develop politically because, in the absence of taxes, citizens have less incentive to place pressure on the government to become responsive to their needs. Instead, rentier states frequently create a new bargain in which access to the states' goods and services is exchanged for the political submission of its citizenry. In other words the government essentially 'bribes' their populace with extensive social welfare programs (Beblawi, 1990; Smith, 2004; Basedau and Lacher, 2006). This explains the reasons behind some of the water policies in the region, which are entangled with supporting different sections of society. Similarly some water allocation and pricing policies in agriculture are often based on supporting local tribal or traditional economic activities or special interest groups (Elhadj, 2006). While in Qatar agriculture accounts for only 1% of GDP, the sector accounts for 74% of freshwater use (Al Yousef et al., 2000). Current rate of water use is about six times the natural renewal rate while over 50% of the water used is desalinated water or treated wastewater (Brook et al., 2006). As an effective way of passing on national wealth, water is supplied almost free of charge to the national population in several GCC states and this has stimulated an unprecedented wastage of the most precious

resource, resulting in some of the highest per capita water consumption levels in the world (Dawoud, 2005).

The situation has been described by Niblock as follows: "primarily living in a cocoon created by apparently unearned income, divorced from the problems facing other peoples, sets a population apart from the global community — creating attitudes and mentalities out of touch with international realities" (Niblock, 2007, p. 1). This "social contract" isolates position and reward from their causal relationship with talent and work and has therefore led to the emergence of an unhealthy perception towards the acquisition and exercise of authority, the rightful representation based on merit, towards the ethical superiority of work, fairness and equity, as well as responsibility and freedom (Amuzegar, 2001; Noreng, 1997). In extreme cases, income is derived simply from citizenship and in this respect a recent study from the Economic and Policy Research Unit at Zayed University has revealed that a male UAE national is receiving an average of 55,000 USD per year as benefits from the government (Brown, 2007). Eventually these "rentier societies" come to feel that they have sufficient resources to afford setting aside some fundamental ethical principles (Chourou, 2005). This cannot only be clearly seen in the attitude towards foreign workers from low-income countries (Human Rights Watch, 2006), but also in the disrespect for voluntarism and philanthropic engagement, which is often the essence of social cohesion. Among the typical characteristics associated with the oil monarchies of the GCC is that the public bureaucracy swells to immense proportions and is usually treated as a subcategory of the service sector. This frequently inefficient public sector is the ultimate employer in rentier states, since the government is said to use employment as a means of easing any political tensions arising from unemployment (The World Bank, 2004). Based on informal patronage networks that prevent equitable and predictable administrative behavior, civil servants see in a best case scenario their principal duty as being available in their offices during working hours. Hence in many cases, nationals have more of a symbolic character than a productive one (Thorleifsson, 1993). Contracts are commonly being awarded as an expression of gratitude rather than as a reflection of economic or environmental rationale (Moaddel, 2002; Smith et al., 2005). The Arab Human Development Report 2002 "Creating Opportunities for Future Generations" warns of the negative influence of the fact that the main societal rent does not require big efforts or hard work but investing one's status in the society. "Arab countries will need to re-examine and re-balance the tacit component of societal incentive structures so as to strengthen rather than undermine the fundamental values of human development" (UNDP, 2002).

Yet it needs to be mentioned that the situation is not this bad in all of the GCC member states. Once again the UAE can be considered a worst case scenario, Qatar is comparable, while income disparities in Bahrain and Saudi Arabia are much higher and such an extravagant lifestyle as well as attitude is only available to a selected few. Kuwait is making a serious effort to counteract the adopted "rentier mentality" and also already shows clear differences to Qatar and the UAE.

5. The demographic divide

As a result of the "rentier society" most of those involved in the productive work process are either non-citizen migrant workers or expatriate experts on short-term work contracts. Thus the presence of and in some cases absolute dependency upon large numbers of foreigners as a result of this rentier mentality, constitute a common long-term obstacle to sustainable development, which is largely ignored by experts. Notwithstanding, the proportion of foreigners in Saudi Arabia make up as of July 2006 approximately 20% of the residents, while the situation in the United Arab Emirates is far more extreme, with foreigners making up 80–85% of the population (Salama, 2006). Moreover, the dominance of expatriates has even been more pronounced in the workforce than in the total population.

⁸ Demographic challenges will manifest themselves next to a declining environmental security, especially in socio-economic problems. For instance, Saudi Arabia that clearly fits into Max Weber's definition of a neo-patrimonial state, will despite its enduring oil wealth, face the downward trend in internal stability as a result of a poorly managed rapid population growth.

Non-nationals constituted a majority of the labor force in all the GCC countries, with the average for the year 2004 being close to 70 percent (Kapiszewski, 2006). The lowest rates were recorded in Saudi Arabia and Bahrain, but even there expatriates constituted above 65 and 50 percent of the workforce, respectively; in Kuwait 82 percent of the workforce were foreign, in Qatar almost 90 percent, and in the UAE even above 90 percent. When looking at the private sector alone, the UAE has a 98% foreign workforce (Rafiq, 2006; Gulf Cooperation Council, 2006). In other words, when statistics on sustainable development or human development indicators are presented this "demographic divide" often results in the unintended falsification or misinterpretation of data. For instance the previously mentioned 2005 Environmental Sustainability Index gave the UAE a better rating than for instance Saudi Arabia, based on the alleged "Societal Capacity to Respond to Environmental Challenges". Those that are familiar with the situation in the UAE will immediately notice that this is "contrived imported foreign development" and has nothing to do with "real development", while in Saudi Arabia there is actually some form of "human agency".⁹ While the percentage of foreigners in the GCC populations has systematically been growing over the last decades, the population in the current GCC states has grown more than eight times in 50 years. The increase from 4 million in 1950 to 40 million in 2006 certainly marks one of the highest population growth rates in the world (Kapiszewski, 2006). This demographic development has not only posed security, economic, social and cultural threats to the local population, but also can be seen as a serious driver for further pressure on scarce resources and environmental degradation (Al-Zubari, 2003; Elhadj, 2006). The resulting rapid urbanization¹⁰ causes various problems; e.g., inter alia a housing shortage, lack of infrastructure, congested traffic, loss of productive land and progressive environmental degradation, and thus poses an additional serious threat to sustainable development (ESCWA, 2005). Inadequate urban planning and zoning has thus inflicted severe damage, environmentally, socially and aesthetically. The air quality in the UAE is already 10.5% and 11% worse than in the American states of Virginia and Michigan, respectively, and is constantly exceeding accepted standard WHO critical levels (El-Sayed, 2004; Corder, 2008).¹¹ Seasonal dust storms caused by progressive desertification pose another health risk, especially to people with asthmatic troubles. At the same time, governments in the Arab Gulf region have failed to comprehend and respond to the implications of a changing demographic picture and are actually still pursuing pro-natalist policies (Elhadj, 2006).

Domestic cures for the problems are well known and prosaic, but also politically unpopular, so there never seemed to be an appropriate moment to take the kind of bold and painful action required. This phenomenon is well illustrated in the very slow pace of 'indigenization' of the work forces in GCC states (Niblock, 2007).

The Bahraini labor minister, Majid Al-Alawi, noted that the presence of millions of foreign workers in the Gulf may pose a serious future threat. His suggestions however received a lot of criticism and his proposal was not followed up by the GCC council (Bowman, 2008).

So eventually this translates into the fact that almost all the appropriate responses to environmental management are designed and implemented by contracted foreigners, for instance the formulation of National Action Plans, scenario development, scientific research, civil society, etc. Developing adaptive capacity, creating awareness and working with multiple actors, at multiple scales can be

very difficult, when local stakeholders are not available in the working environment.¹² It must be emphasized that "real change" needs to be endemic and consequently Gulf Arabs must build their future with their own commitment and talents, supportive of each other, and engaged with the world.

6. The "knowledge deficit" – education & research under political oppression

The knowledge deficit, in terms of acquisition, production, promotion or diffusion, is still considered as one of the major constraints to sustainable development in the Arab world in general and especially with respect to the GCC member states (UNDP, 2003; Lord, 2008). One of the principal findings of the recently conducted comprehensive World Bank report, "The Road Not Traveled: Education Reform in the Middle East and North Africa" was that the quality of education in the Arab world is falling behind other regions in absolute terms and there is a need to overhaul their education systems to meet the demands of an increasingly exigent competitive world, if they are to tackle the future challenges of their large and growing youth population. The study emphasizes the central role of incentives and public accountability to meet sector objectives. However, across the region a growing censorship threatens the development of a knowledge culture. While the World Bank report argues that today's world of intense global competition and rapid technological change demands problem-solving, complex communication¹³ as well as language skills not being emphasized in the region, these will be exactly the same qualifications needed to develop an adaptive capacity to adequately deal with future environmental challenges. In the absence of those described skills, it is not surprising that proportionally more of the available research is limited to climatology and hydrology, while complex interdisciplinary studies on natural and human systems pertain to developed regions (Kiparsky et al., 2006).

Some scholars point out that local education systems have failed to compensate for the above mentioned rentier economy pitfall, however the psychological mindset that results from the established "rentier mentality" might present an even higher obstacle to solving those future challenges. Emphatically the problem of 'indigenization' is strongly related to an entire generation of rentier ethics that have defined the relationship of the Gulf Arab society toward salaried work, yet it can also be considered a result of the dearth of skills, driven by the absence of a dynamic training and re-training system for life-long education. Such a system is essential, particularly in a period of rapid transformation in the economic structure. Furthermore the knowledge gap described in the AHDR maybe inextricably linked to the rentier mentality as well, since it does not include the long range vision to develop the country's own work force, especially in more skilled jobs such as science and industry (Looney, 2004; Fasano and Goyal, 2004; Assuliman, 2007). Consequently, despite its enormous wealth, the GCC region is scoring worst in the world when it comes to Research & Development and the situation is even deteriorating (Nour, 2005). Serious implications of this trend are the miniscule local research output and the attitude towards participation in research initiatives. Monetary incentives are not sustainable and will certainly not change the attitude towards developing human capital. However,

⁹ The Saudi Geological Society or the Saudi Arabia Water Environment Association (SAWEA) have an active national base and are only two examples out of many.

¹⁰ Urbanization in the GCC in 2000: 97.6% of the population in Kuwait is urbanized, 92.2% in Bahrain, 85.7% in Saudi Arabia and 85.9% in the United Arab Emirates (ESCWA, 2007).

¹¹ Dubai actually overtook Cairo in traffic congestion and is now considered the most congested city in the Middle East. See: *Jordan Environment Watch*, 2007. Dubai most congested Arab city in the Middle East. Tuesday, July 03, 2007 from Middle East Online. Online: <http://www.arabenvironment.net/archive/2007/7/259819.html>.

¹² This is a unique situation and many assessments ignore this problem. Depending on foreign expertise is not a sustainable option, when it comes to developing adaptive capacity and is also not a reliable option, when regional insecurity is considered. The difficulty will become obvious when trying to communicate and network with any of the UNCCD focal points (who are actually nationals) in these countries. The GCC Network for Drylands Research and Development (NDRD) with a mandate to link stakeholders in the region has in three years only managed to get in touch with one of them (Kuwait).

¹³ Complex communication skills are defined by the World Bank as "interacting with humans to acquire information, to explain it, or to persuade others of its implications for action" (World Bank, 2008, p. 86).

this will only be achieved along with a competitive market based employment scheme, instead of political posting in an inflated bureaucracy. Psychologically reinforced by the intangible nature of bureaucratic output, this psychological mindset even thrives in the academic environment. In strong contrast to the Western competitive scholastic milieu, GCC nationals usually have a secure lifelong job, without checks or balances (The World Bank, 2008). The shortcomings of the education system and the low output of science bring about many manifestations of the weaknesses of the society, but undeniably the rentier mentality would flourish and acquiesce in such a system of uncritical mind (Fergany, 2006; Giles, 2006). In other words, the current paternalistic social system, based on submission to authority would not function, if educational reforms would be seriously considered as an option by the ruling elites. Gulf Arab institution-building is thoroughly politicized and education still places an emphasis on memorization, subordination and compliance, and not enough on developing students' cognitive and analytical skills (UNDP, 2003; Lord, 2008; The World Bank, 2008). Even if the majority of GCC nationals have either lost or never obtained the ability to think critically, there are certainly some reformists that voice their concerns (Fergany, 2000). Yet in the absence of human liberties, which are seen by Amartya Sen as a principal means to development (Sen, 1999), oppression or persecution of individuals or groups for political reasons are progressing (Kaufmann et al., 2008). Human rights organizations as well as other institutions are constantly reporting about the dramatic consequences that will be faced by anyone that offers a critical opinion¹⁴ (Maziak, 2005; ANHRI, 2007; HRW, 2008).

While there certainly is an urgent need to analyze the poorly elaborated linkages between environmental degradation and ecosystem management in the region, independent organizations or individuals that produce social research are still regarded as antagonists to the government rather than useful collaborators, though their ability to produce critical information is often limited. As a consequence, government decision-making tends to operate in isolation from socio-political research results, leading to inefficient policies. In view of all these difficulties the region is not only characterized by the absence of knowledge on how the indirect drivers, such as demographic, economic, sociopolitical, scientific/technological and cultural/religious factors, influence the environmental situation and human security in the region, but there is also almost no available data on the drivers that unequivocally influence ecosystem processes.

7. The quasi absence of civil society

Developing "adaptive capacity" therefore, depends on the ability of a society to act collectively, a factor that is heavily influenced by governance. While the IPCC as well as other international organizations are assuming that changing development pathways requires working with multiple actors, at multiple scales, it would first have to be determined if these multiple actors even exist.

Certainly it can be said that as an epiphenomenon of social capital, the emergence of a vigorous civil society as the key component to building and maintaining democratic structures has been increasingly

emphasized in development theory during the last few years. Evidence shows that this form of more or less institutionalized social cohesion is critical for human security as well as sustainable human and economic development. While social capital constitutes the cultural component of modern societies, which in other respects have been organized on the basis of formal institutions, the rule of law and rationality, co-operation between individuals, facilitating an understanding of the interconnectedness of society and interests within it, do not play a prominent role in the oil economies of the Arabian Gulf. While in some countries such as Kuwait and Bahrain there has been a very small emergence of an active civil society, the creation of independent organizations has been totally stifled by the ruling families in the UAE (Davidson, 2005). Notwithstanding, in a state-centralized political milieu, civil society may also have a tendency to promote civic qualities vital to authoritarian citizenship by supporting the ruling elites (Heydemann, 2007) and hence does not serve the above defined objectives to enhance the development of adaptive capacity. A disparity in power and access to decision makers may promote adaptive responses by some, while constraining them for others (Wilbanks et al., 2007). Hence, any assessment of the social cohesion of a society in order to develop adaptive capacity must take into account political contexts, including the relationships among associations, their leaders, and political institutions. Therefore while the mainstream arguments are based on the rentier state theory, one will need to consider the existing nature of the legal system and its role in creating, structuring and shaping civil society and especially whether the "traditional" political culture as well as the complexity of societal relations of the Gulf societies, inhibit the development of participatory politics (Cox, 2006; Samad, 2007). Consequently, apart from a few organizations serving professional and religious (charity) interests, the establishment of functioning civil society by GCC nationals remains underdeveloped with only limited prospects that the pace for change will increase substantially in the coming years (Jill, 2005).

8. Conclusion

In the Gulf Cooperation Council (GCC) member states, the tremendous economic advancement that has taken place in the past years has not been matched by a similar process of human development, political reform and democratization. The current orientation towards investment and maximum economic growth pictures an environmentally depressing future for the GCC countries (Al-Roubaie and Al-Zayer, 2006). Massive development activities along coastal zones and marine areas in combination with the general absence of an independent regulatory body as well as with poor management and regulations have led to progressive degradation (Kahn, 2007). Urban environments, as a result of foreign induced population pressure, are playing an increasingly important role in daily quality-of life issues, ecological processes, climate, flows of materials, and land transformations.

The implementation of adaptation strategies will not be successful, unless there is a willingness to adapt among those affected, especially among decision makers. It is also a function of awareness of society in general, as well as a degree of consensus regarding what types of actions are appropriate. However the current political ideology of the GCC states has established a "rentier society" that rewards access to power (organized coercion, political authority and wealth) and glorifies material possessions, at the expense of knowledge, labor and altruism. Generally this created a condition of "negative consent", in other words the decline of participation on the part of the people at large, thus resulting in a situation where citizens are sinking into a morass of individual interests at the expense of collective welfare (Noland and Pack, 2007). Certainly it is this mentality that needs to be changed, and change will occur only if ethical and normative standards are revived and respected (El-Sayed, 2004).

¹⁴ This may include scientists, journalists or even a critical environmental blog on the Internet. The highest risks in respect to conducting research and facing the consequences will again be faced in the UAE, which explains the absence of critical assessments (Environmental Impact Assessments) or documentaries. In September 2007, the UAE government issued instructions "not to imprison journalists for reasons related to their work," but indicated that other measures should be taken to penalize journalists for "violations." The Arabic Network for Human Rights Information however reports that the freedom of expression is still missing despite a decision banning imprisonment in the UAE. Symptomatic for the situation in the UAE would be the experience of a Fulbright scholar that went to the UAE to carry out routine academic research. See: Syed, A.: 'You must come with us', in: The Guardian, November 12, 2007.

Representing the view of many scholars of development policy and international relations, Rami Khouri, director of the Issam Fares Institute for Public Policy and International Affairs in Beirut, argued that reports should move beyond merely detailing the problems in the Arab World and should instead ask for "the whys and wherefores" (Walker, 2008). He expressed the same question that scholars of the region have been trying to analyze for years: why has there been a decline in governance, freedom, economic growth, and knowledge in this part of the world? Why has the correlation between education and economic growth in the high income GCC member states remained weak, representing a paradox to prevailing development theories?

Why are they confronted with severe water stress, desertification and environmental insecurity and will do nothing about it, unless it manifests itself as a fast financial opportunity? Why is there such a meager integration within the international scientific community?

The global scholarly community has made countless attempts to answer these questions – especially with respect to the democracy debate, but most of those theories have proved to be inconclusive. Why only this particular part of the world? There always seems to be at least one example from the rest of the developing world that will refute the latest idea. Moreover, the widespread approach used in research and practical assessments in respect to these nations' generalization into the "Arab world", compromises the accuracy of the work and distorts findings while perpetuating misinformation about the region. The implementation of adaptation strategies requires resources, inter alia social capital (e.g., strong institutions, transparent decision-making systems, formal and informal networks that promote collective action), human resources (e.g., skills and knowledge), financial capital and natural resources (e.g., land, water, biodiversity), but the GCC member states still believe that their financial resources will be sufficient to "buy solutions". Syrian scientist Wasim Maziak found some explanations in his Science article in saying that "most Arabs view science as a commodity that can be separated from the thought processes and socio-cultural attributes of its producers" (Maziak, 2005).

The GCC countries especially believed that oil money plus Western technology was a simple formula for industrialization and modernization. Thus, acquiring the latest technological innovations or shares in hi-tech industries became synonymous with being partners in the technological revolution of the modern world.

Maziak concludes "after all, this perspective makes it hard to appreciate the differences in culture and values between technology-producing and technology-consuming societies" (Maziak, 2005).

Generally it can be said that the development of "adaptive capacity" can be undermined by a refusal to accept the risks associated with resource degradation and climate change, or by a refusal of key decision makers to accept responsibility for adaptation. Such refusals may be ideological in nature, religious, cultural, or the consequence of vested interests denying the existence of risks associated with climate change. Moreover it would urgently be necessary to transcend from the all-too-common politicization and superficiality of International Governmental Organization reports and engage in further independent research to be able to give some feasible suggestions.

From the above discussion it should be clear that the presumed "good governance" concept is an ideal which is difficult to achieve in such a political setting and that we do not have the luxury in consideration of the current environmental vulnerability to wait a few decades until things may gradually change.

Regional cooperation will be a vital ingredient to developing adaptive capacity and it would be helpful if the Gulf Cooperation Council (GCC) would finally establish an interregional legal framework in compliance with their stated objective to prompt scientific and technical progress in the fields of industry, mining, agriculture, water and animal resources, as well as establishment of scientific research centers. This will in the long term enhance the possibility of a regional

civil society and give these organizations the possibility for accreditation within the UN system.

Finally, keeping in mind that climate change as well as human security is a global concern, we urgently need to introduce a paradigm change in respect to our Western foreign policy towards this particular region. Foreign policy should not be calculated according to economic and some abstract collection of imaginary "security interests" and take precedence over human rights. Despite the fact that our strong Western backing of political repression and autocracy are likely to enhance terrorism, the trade-off with environmental destruction and therefore the advance of global climate change will pose an even greater security risk in the future. If we would just stop treating the GCC countries as a mere market sector, but without any commitment to developing this sector's own science and technology capacities we would already achieve some success. Instead it is urgently suggested that we start to engage in a straightforward dialogue with Gulf Arab leaders (Conditionalities) and create awareness of environmental issues as well as providing international platforms to those reformists' voices.

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