

# GRC Environmental and Sustainability Research Program: Working towards a Sustainable Future for the Region



**Gulf Research Center**  
Knowledge for All



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## Introduction

Oil and gas revenues for GCC countries have enabled exceptional and accelerated development in all aspects of life. These countries have become hubs of intense activity in many spheres—geopolitical, military, economic, industrial, construction, and tourism, to name a few. However, the scale of oil and gas production and use, urbanization and industrialization in the region has also led to severe environmental problems.

## Sustainability

The GCC countries face a multitude of “traditional” environmental challenges, such as desertification, biodiversity loss, pollution in land, marine and coastal areas, air pollution, and water

**“The GRC Environment Security & Sustainability research program looks at environmental and sustainability issues in the Gulf region”**

scarcity and quality. During the past few years, an additional set of emerging environmental problems have emerged, especially those related to construction and demolition debris, electronic waste, climate change and energy security.

It is worth mentioning that traditional and emerging environmental threats are all interlinked. For instance, desertification leads to biodiversity loss; livestock increase and overgrazing leads to desertification; waste-dumping releases methane, which adds to the global warming problem, which in turn leads to desertification, water scarcity, and many other ecological disasters.

The environment being in the DNA of Sustainability is a topic of great interest today, particularly for the Gulf Cooperation Council (GCC) countries. The observed growth in the GCC countries has led to unsustainable consumption patterns of vital resources such as water, energy, and food,

highlighting the need for an urgent shift towards green growth and sustainable development strategies.

The GRC Environment Security & Sustainability research program looks at environmental and sustainability issues in the Gulf region, and seeks to document relevant and related information about specific concerns related to the Gulf, in order to deepen the awareness and understanding of the following key environmental issues such as:

- The trends in the state of the environment and natural resources.
- Key initiatives taken to address these issues and how they can be further strengthened
- Traditional environmental threats such as water, desertification, in addition to new and emerging threats such as climate change, demolition and construction residues
- Sustainable Development Goals (SDGs)
- Green economy, sustainable consumption and production, environmental governance and renewable energy in the Gulf region
- Environmental issues as an integral part in policy and decision-making at all levels
- Environmental issues and problems as the main driver of the GCC visions
- Environment as a non-traditional security issue
- Pollution associated with the oil and gas industry
- Clean technology and renewables as key for sustainable development in the region.

**“It took the pioneer initiative “Green Gulf 2020,” which, as a follow up to the GRC’s initial “Green Gulf Study” project, supported by UNEP and the Arab League”**



## “ Undertook many other studies focusing on environmental situation assessment of specific areas of the region ”

At the inception of the GRC Environment Security and Sustainability research program, it took the pioneer initiative “Green Gulf 2020,” which, as a follow up to the GRC’s initial “Green Gulf Study” project, supported by UNEP and the Arab League, focused on the proposal of a comprehensive sustainable development plan covering all environmental issues in the Gulf region, and including biodiversity issues, land degradation, coastal environment, water scarcity and quality, air pollution and solid waste management.

In addition, the research program undertook many other studies focusing on environmental situation assessment of specific areas of the region such as its collaboration with the Center for Environmental Studies at Sultan Qaboos University on “the Green Mountain Study Project” near Muscat, Oman (2009-2010).

### Renewable Energy

The fast-growing domestic energy demand in the Gulf Cooperation Council (GCC) countries poses a major challenge for energy security, and it is therefore extremely important to rethink policies and investments to ensure that the region is heading in the right direction toward sustainability and the efficient use of renewable and non-renewable resources.

Most importantly, given the vast potential for solar energy, renewable energy can play a key role in the shift towards a greener economy in the GCC. Indeed, given the key role of energy in socioeconomic development, especially in the Gulf, it can be argued that a simultaneous shift in the energy sector is a precondition for any green transition. Since the energy sector affects all other sectors, a green energy sector is very likely to have a positive spillover effect on the other sectors too.

From an environmental perspective, overall renewable energies produce very little greenhouse gas emissions (GHG). Furthermore, renewables provide an answer with more environmental acceptance to the growing domestic energy demand. In addition, scaling up renewable energy and promoting energy efficiency can unlock technology innovations, job creation, and green economic growth. It is worth mentioning that the GCC countries have many initiatives, plans and projects to increase the share of renewable energy in the energy mix of GCC countries such as MASDAR in UAE and the National Renewable Energy Program Saudi Arabia.

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## “ The GRC Environment ,2010 In Security & Sustainability research program co-created the EU–GCC Clean Energy Technology Network ”

In 2010, The GRC Environment Security & Sustainability research program co-created the EU–GCC Clean Energy Technology Network. This network addressed clean energy issues within a GCC-EU context. Its main components were:

- Creation of a network of GCC and EU entities including universities, research institutes, industries and utilities, to support and work on topics of mutual interest in the area of clean energy under 5 different headings: Renewable Energy Sources, Energy Efficiency & Demand Side Management, Electricity Interconnections and Market Integration, Clean Natural Gas Technologies and Carbon Capture & Storage
  - Capacity building events and joint research activities
  - Dissemination of information for an increased knowledge in the GCC on EU policies in the area of clean energy, and the promotion of joint projects in this area
  - Establishment of a sustainability strategy
- One of GRC's publications in this area is the book "Renewable Energy in the GCC Countries: Resources, Potential, and Prospects."

### Environment and Security

Environment resources can act as both the cause and victim of armed conflict in the West Asia region. Water, air and ecosystems, which are already fragile in the region, in addition to biodiversity, are the real victims of the military conflict in the region. Military operations lead to the pollution and destruction of water and soil, rendering it unsuitable for agriculture and habitation. Thus, the relationship between the

environment and security has begun to gain increased attention from leaders in the region with the aim to protect natural assets and the resource base for development, and of course to find peaceful solutions to these conflicts.

The Gulf Research Center has been a leader in environment and security research. GRC participated in the study project "Supporting the Ability to Plan Long-Term Conflict Prevention in the Middle East" in collaboration with the Crisis Management Initiative in Finland, the Jordan Strategic Center, Lebanon Center for Strategic Studies and Al-Ahram Center for Strategic Studies (2009-2012). GRC led the environment and security-working group.

## “ The Gulf Research Center has been a leader in environment and security research ”

### Global Environmental Policy

Since environmental problems are of global nature and do not recognize borders, the six countries of the Gulf region are active on the international level in many international fora and multilateral environmental agreements with the aim to exchange knowledge and generate international environmental policies that help humanity and the region to peruse a sustainable future. In this context, the Gulf Research Center Foundation was granted special consultative status with the Economic and Social Council (ECOSOC) of the United Nations. The status has allowed the GRCF to attend all UN conferences, request the Secretary-General to place items of special interest in the provisional agenda of the Council, designate representatives to the UN Headquarters in NY and the UN offices in Geneva and Vienna, and submit written statements and oral presentations to the Council.

Furthermore, since November 2005, the Gulf Research Center has been accredited to the Governing Council of UNEP, thereby granting it the status of an international non-governmental organization. This recognition has allowed the GRC to designate representatives to sit as observers at

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meetings pertaining to environmental issues hosted by the UNEP Governing Council and its subsidiaries. Since 2010, GRC has been one of two global representatives of the Science and Technology Major Group. In 2018, Dr. Mohamed Abdelraouf, the GRC Representative at UN Environment, was elected to co-chair the Major Groups Facilitating Committee (MGFC). This is the main committee that facilitates and coordinates the effective participation of all nine major groups at UNEP, i.e. the scientific community, NGOs, women, youth, etc., in the UN Environment Assemblies and its organs. In addition, GRC co-organizes and facilitates the Global Major Groups and Stakeholders Forum that is at UNEA as well as the "Green Tent" of Major Groups and other stakeholders.

Approximately every six years, UNEP produces the Global Environmental Outlook (GEO). The GEO report provides a clear assessment of the current state of the environment, the challenges that we face, and how well we have dealt with them, with due consideration given to gender, indigenous knowledge and other cultural dimensions. The assessment lays the foundation for continued socio-environmental assessments across relevant scales, with a thematic as well as an integrated focus, enabling and informing societal transitions and the tracking of Sustainable Development Goal targets and goals as well as previously agreed international environmental goals. The enhanced

and updated policy analysis in GEO reports is aimed at assisting member states to position themselves on the most effective pathways for transformations toward a sustainable future.

The Gulf Research Center is proud to have been part of the study team of GEO 5 and GHEO 6. GRC was the lead author for the environmental governance section of the West Asia chapter of GEO5 and 6. Environmental governance is of great importance for the Gulf region as it is a concept in political ecology and environmental policy that advocates sustainability as the supreme consideration for managing all human activities—political, social and economic. Environmental governance includes government, business and civil society, and emphasizes system management, unified goals, and activity design and execution.

In this regard, GRC has been present in all UN Environment Assemblies as an observer organization representing Science and Technology Major Groups, and recently GRC was elected to chair the Major Groups at the UN Environment Program, where the Gulf Research Center conducted several workshops, and was co-organizer of the Global Major Groups and Stakeholders Forum as well as organizer of the side events of the "Green Tent" during UNEA 4.

Finally, a dedicated workshop in 2010 on "Environmental Policies in the Gulf" was part of the annual Gulf Research Meeting. GRC has published a number of policy papers and books on this topic such as "Economic Instruments as an Environmental Policy Tool: Case of GCC Countries."



## Climate Change

Global warming is the ongoing rise of the average temperature of the Earth's climate system and has been measured using direct temperature and measurements of various effects of the warming such as sea level rise, extreme weather events, etc. The GCC countries will be directly impacted by such developments. If sea levels rise, natural and especially man-made islands in the region and elsewhere will disappear, with Bahrain potentially losing up to 15 kilometers of coastline. In addition, under-ground water salinity will increase, more land degradation will occur in the region, and biodiversity on land and in the Gulf will be affected. As one expert stated, "There are two major and immediate consequences: first, rising sea levels will affect coastlines and marine life severely and could impact on desalination plants that are the source of water for the region. Second, rising temperatures means increasing water demand and with falling freshwater levels and increasing salinity in sea water (which affects the efficiency of desalination plants); water scarcity is a fearsome prospect."

The social impact will be severe, as many workers will lose their jobs in agriculture, fishing, and some traditional oil industries as a result of a world shift toward renewable energy sources. In short, climate change threatens to seriously undermine efforts to eliminate poverty and realize the Sustainable development Goals.

The GCC is a global leader in improving air quality and understands the hazards posed by poor air quality. Two major initiatives in this regard, for example, include air pollution monitoring stations across the region and the World Future Energy Summit (WFES), which are of special importance for the Arab World in general and the GCC region in particular because renewable energy can diversify energy sources and help achieves energy security as well as cut green house gas emissions in order thus enabling the region to meet its obligations

under the Paris Climate Change Agreement.

The Gulf Research Center has focused much attention on climate change issues, and was part of the WANA Forum Project from 2008-2012, leading the Climate Change Working Group. In 2011, a dedicated Workshop on "The Impact of Climate Change on the Gulf Region" was part of the annual Gulf Research Meeting in Cambridge. GRC published many papers and books on this important topic such as the book "Climate Change in GCC Countries and Policy Responses".

## The GCC-Asia Environmental Relationship

The GCC-Asia relationship is built upon a foundation of mostly economic and trade-based exchanges. But what does it hold for the environment and what can we do to create useful relations between the two regions that can benefit environmental causes?

Although a major concern, global warming is not the only source of worry when it comes to environmental protection; the global food crisis has led to emerging nations trying to profit from the food shortage by getting big importers of crops to effectively lease their farmlands. It comes as no surprise that a majority of investors are from the GCC and that most of the countries leasing out their farmland are in the Asia region.

Despite the similarities in the nature of environmental problems of the GCC and some parts of Asia, there has been little collaboration between these countries on environmental issues. In the past decade, however, there has been a marked improvement with countries like Japan taking the lead in bridging the gap between the problems and available support and solutions. GCC and Asian countries have many common environmental problems when it comes to water, air and food security. Renewable energy is a key area for cooperation between the two regions.

With the push for alternative energy solutions, the growing market for renewable energy could prove to have strong commercial interests for businesses in the energy industry. Joint environmental projects to improve renewable energy technology could expedite the process of development and provide markets for these new technologies.

When looking at the market leaders for renewable energy technology, three Asian countries stand out for solar-thermal and wind energy: Japan, China and India. By cooperating with these three countries, the GCC can further its renewable energy ambitions with collaborations at the government, institutional and industry levels.

One of the study projects conducted by GRC in this area was the "GCC-India Relations Project" where the environment and environmental cooperation between the Gulf and India was a major focus area.

## 2030 Agendas

In response to the various environmental and sustainability concerns, the GCC countries have put in place several environmental management initiatives and apex-level institutions to oversee these. Several initiatives have been undertaken at the regional and international levels. Most GCC countries are active participants in international conventions dealing with the preservation and conservation of natural resources, and have ratified various multilateral environmental agreements.

However, the SDGs represent important models for the GCC countries to tackle their challenges and chart the way forward in a sustainable way. All GCC countries have formed future sustainable visions and strategies, which are summarized in the following table no.1:

**Table no. 1: Sustainable Visions and strategies in GCC countries**

Country	Visions and strategies	Main Aim
Saudi Arabia	Saudi Vision 2030	A package of social and economic policies designed to free the Kingdom from dependence on oil exports and to build a prosperous and sustainable economic future by focusing on the country's strength and policies.
UAE	UAE Vision 2021, Green Economy Strategy, Abu Dhabi vision 2030	A number of sustainable strategies that aim to make the UAE among the best countries in the world by the Golden Jubilee of the UAE Union.
Kuwait	Kuwait's Vision: The Year 2030	A long-term development plan as well as the transformation of Kuwait's unsustainable economy into a sustainable one
Bahrain	The Economic Vision 2030	A clear direction for the continued development of the Kingdom's economy and, at its heart, is a shared goal of building a better life for every Bahraini
Qatar	The Qatar National Vision 2030 (QNV 2030)	Transform Qatar into an advanced society capable of achieving sustainable development by 2030. The plan's development goals are divided into four central pillars: economic, social, human and environmental development.
Oman	Oman Vision 2040	To diversify its economic activities from the oil and gas sector to the tourism sector and other services sectors. In short, it aims at developing a sustainable economic development for Oman.

Source: Compiled by authors

These visions clearly indicate that the GCC is very keen and aware of the importance and the need for the shift towards the sustainability path in order to sustain their well being and good quality of life for current and future generations.

Taking into consideration the achievements at the UN Climate Conference in Paris on December 12, 2015 (COP 21), where a historical and ambitious agreement was reached by 195 nations to commit all countries to cut emissions, combat climate change, and unleash actions and investment towards a low carbon economy and sustainable future, progress on the SDGs can be realized too. Overall, there are tremendous benefits to be gained from moving forward on the path towards sustainability. The SDGs offer an opportunity that must be seized.

Achieving sustainable development rests almost entirely on getting the economy on the right path. The shift from brown to green economies can achieve sustainable development with a better quality of life, guarantee real investments, achieve social justice and, most importantly, create real green jobs.

In this regard, GRC has conducted a number of sustainability workshops at the annual Gulf Research Meeting in Cambridge such as:

- 2014 - Workshop and book published on "Green Economy in the Gulf"
- 2016 - Workshop and book publication on "Sustainability in the Gulf: Challenges and Opportunities"
- 2019 - Workshop entitled "Towards Sustainable Consumption and Production in the Gulf"

Finally, GRC has published additional books that tackle these important issues such as "The Green

Economy in the Gulf" and "Sustainability in the Gulf: Challenges and Opportunities" and "Sustainable Development Challenges in the Arab States of the Gulf."

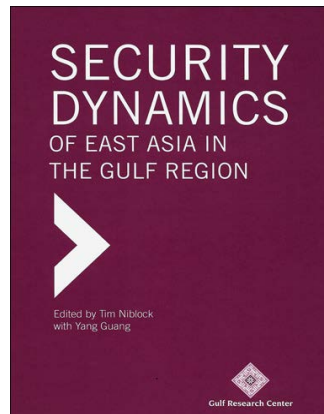
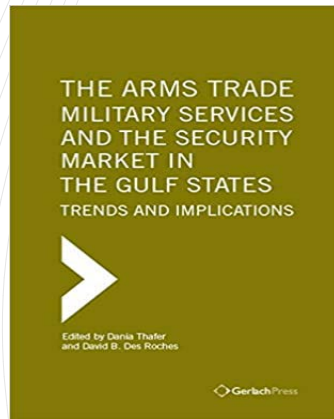
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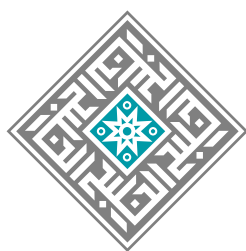
### Capacity Building

The main mission of the GRC is to fill the knowledge gap in the region. One of the main ways to do that is by providing up-to-date data and information relating to environmental issues in the region such:

- The emerging topic of water diplomacy that can be defined as the use of diplomatic instruments to existing or emerging disagreements and conflicts over shared water resources, with the aim to solve or mitigate those for the sake of cooperation, regional stability, and peace. A capacity building workshop on water diplomacy was conducted in the UAE in October 2019.
- The emerging topic of water footprint that is a measure of humanity's appropriation of fresh water in volumes of water consumed and/or polluted. The water footprint allows us to answer a broad range of questions for companies, governments and individuals. A regional training course on the water footprint for GCC and Arab countries was held in Bahrain (2015) and Oman (2014).
- How to understand UNEP and Environmental Negotiations, Nairobi, Kenya, March







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